ALABAMA COMMISSION ON HIGHER EDUCATION

Alabama Commission on Higher Education
RSA Union Building, 100 North Union Street, Room 782
Montgomery, Alabama 36104
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COMMISSION MEETING

Public Service Commission Hearing Room
RSA Union Building, 9th Floor
100 North Union Street
Montgomery, Alabama 36104

March 9, 2018
10:00 a.m.

Alabama Commission on Higher Education
2018 Committee Structure

Executive Committee

Charles Ball, Chairman
Randle McKinney, Vice-Chairman
Charles E. Sanders

Instructional Affairs Committee

Charles E. Sanders, Chairman
Karen Calametti
Stan R. Pylant
Miranda Bouldin Frost

Finance Committee

Patricia McGriff, Chairman
Charles Buntin
Amy Price
Timothy Gyan

AGENDA

ALABAMA COMMISSION ON HIGHER EDUCATION

RSA Union Building, 9th Floor
Public Service Commission Hearing Room

March 9, 2018
10:00 a.m.

I. Call to Order / Pledge of Allegiance

II. Roll Call of Members and Determination of Quorum

III. Approval of Agenda

IV. Consideration of Minutes of December 8, 2017 1

V. Chairman's Report
Commissioner Charles Ball

VI. Executive Director's Report
Dr. Jim Purcell

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Staff Presenter: Ms. Margaret Pearson

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AUBURN UNIVERSITY AT MONTGOMERY (AUM)

TROY UNIVERSITY

UNIVERSITY OF ALABAMA (UA)

UNIVERSITY OF ALABAMA AT BIRMINGHAM (UAB)

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1. Master of Arts in Integrated Marketing Communications (CIP 09.0199) 234
   Staff Presenter: Dr. Lenny Lock

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IX. Adjournment

ALABAMA COMMISSION ON HIGHER EDUCATION

MINUTES OF MEETING

December 8, 2017

I. Call to Order

The Alabama Commission on Higher Education met in regular session on Friday, December 8, 2017 in the Public Service Commission Hearing Room, RSA Union Building, Montgomery, Alabama. Commissioner Ball called the meeting to order at 10:00 a.m.

Commissioner Ball welcomed presidents, institutional representatives, and guests.

Commissioner Ball said a prayer and asked the audience to recite the Pledge of Allegiance.

II. Roll Call of Members and Determination of Quorum

Members present: Charles Ball, Charles Buntin, Karen Calametti, Charles Sanders, Randle McKinney, Patricia McGriff, and Stan Pylant. Members absent: Amy S. Price, Norman Crow, Miranda Frost, and Timothy Gyan. A quorum was determined by roll call of members present.

III. Approval of Agenda

RESOLVED: Commissioner Calametti moved to approve the agenda. Commissioner Sanders seconded. Motion carried. The agenda was approved.

IV. Consideration of Minutes of September 28, 2017

RESOLVED: Commissioner Buntin moved for approval of the September 28, 2017 minutes. Commissioner Pylant seconded. Motion carried. The minutes were approved.

V. Chairman's Report

There was no report.

VI. Executive Director's Report

Dr. Purcell announced that a presentation will be given by Complete College America after the Commission meeting and invited institutions to attend. He then gave a power point presentation with updates on the following issues:

- FAFSA Completion Project
- Open Educational Resources
- Workforce and Economic Development

A copy of the presentation is attached.

VII. Nominating Committee Report and Election of Officers

On behalf of the Nominating Committee, Commissioner Pylant recommended that Commissioner Ball continue to serve as Chair and Commissioner Mckinney as Vice-Chair. There were no other nominations from the floor.

RESOLVED: Commissioner Calametti moved to accept the Nominating Committee's recommendation. Commissioner Pylant seconded. The Nominating Committee's recommendation was accepted.

VII. Discussion Items

A. Annual Report: Alabama Commission on Higher Education 2016-2017

Ms. Margaret Gunter presented the Annual Report: Alabama Commission on Higher Education 2016-2017. A copy of the report is attached.

RESOLVED: Commissioner Calametti moved that the Commission accept the report. Commissioner Sanders seconded. The Annual Report was accepted.

Ms. Gunter then introduced Dr. Alfred Tcherbi-Nartech, Assistant Professor of Materials Science and Engineering at Tuskegee University and a co-principal investigator of the $20 million plasma science grant awarded by the National Science Foundation.

He shared his experiences as a Alabama EPSCoR Graduate Research Scholars Program (GRSP) recipient. He thanked the Commission for their support of the GRSP program. A copy of the power point presentation he presented is attached.

VIII. Decision Items

A. Alabama Commission on Higher Education's Strategic Plan: Building Human Capital: The Educational Path to Alabama's Economic Success

Dr. Purcell presented the five priorities of the Alabama Commission on Higher Education's Strategic Plan (2018-2030). A copy of the power point presented is attached.

RESOLVED: Commissioner Mckinney moved to accept the Plan. Commissioner Calametti seconded. Motion passed.

B. Executive Budget Request for FY 2018-2019

Ms. Veronica Harris presented the staff recommendation to the Commission with a recommendation for approval.

RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner McGriff seconded. Motion carried.

C. Consolidated Budget Recommendation for FY 2018-2019

Ms. Susan Cagle presented the staff recommendation to the Commission with a recommendation for approval.

RESOLVED: Commissioner Sanders moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

D. Report on the Facilities Master Plan & Capital Projects Requests for FY 2018-2019 - FY 2022-2023

Ms. Susan Cagle presented the staff recommendation to the Commission with a recommendation for approval.

RESOLVED: Commissioner Calametti moved to accept the staff recommendation for approval. Commissioner Pylant seconded. Motion carried.

E. Final Approval of Amendments to the Administrative Procedures for the Alabama National Guard Educational Assistance Program

Mr. Tim Vick presented the staff recommendation to the Commission with a recommendation for approval.

RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner McGriff seconded. Motion carried.

F. Final Approval of Administrative Procedures for the Alabama Math and Science Teacher Education Program

Mr. Tim Vick presented the staff recommendation to the Commission with a recommendation for approval.

RESOLVED: Commissioner McKinney moved to accept the staff recommendation for approval. Commissioner Sanders seconded. Motion carried.

G. Final Approval of Amendments to the Administrative Procedures Relating to Reasonable Extensions-Alterations of Existing Units and Programs of Instruction

Mr. Tim Vick presented the staff recommendation to the Commission with a recommendation for approval.

RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

H. Procedural Changes Regarding Post-Implementation Conditions Review (Preliminary Approval)

Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

I. Academic Programs

FOUR-YEAR INSTITUTIONS

AUBURN UNIVERSITY (AU)

1. Doctor of Nursing Practice in Nursing (CIP 51.3818)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Calametti moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

AUBURN UNIVERSITY AT MONTGOMERY (AUM)

1. Doctor of Nursing Practice in Nursing (CIP 51.3818)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Sanders moved to accept the staff recommendation for approval. Commissioner McGriff seconded. Motion carried.

ATHENS STATE UNIVERSITY

1. Bachelor of Science in Health Care Management (CIP 51.0701)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Calametti moved to accept the staff recommendation for approval. Commissioner Sanders seconded. Motion carried.

TROY UNIVERSITY (TU)

1. Bachelor of Science in Electronics Engineering Technology (CIP 15.0399)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner McGriff moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

2. Bachelor of Science in Interdisciplinary Studies (CIP 30.999)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Sanders moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

3. Bachelor of Science in Applied Health Sciences (CIP 51.0000)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner McGriff moved to accept the staff recommendation for approval. Commissioner Sanders seconded. Motion carried.

4. Bachelor of Science in Occupational Education (CIP 13.1319)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner McKinney moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

UNIVERSITY OF ALABAMA (UA)

1. Master of Science in Population Health Sciences (CIP 51.2299)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Calametti moved to accept the staff recommendation for approval. Commissioner Sanders seconded. Motion carried.

2. Doctor of Philosophy in Human Nutrition (CIP 19.0504)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Buntin moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

UNIVERSITY OF ALABAMA AT BIRMINGHAM (UAB)

1. Master of Science in Healthcare Simulation (CIP 30.0601)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Sanders moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

2. Establishment of the Department of Orthopaedic Surgery in the School of Medicine

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Calametti moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

UNIVERSITY OF ALABAMA IN HUNTSVILLE (UAH)

1. Bachelor of Science in Cybersecurity (CIP 11.1003)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner McGriff seconded. Motion carried.

UNIVERSITY OF NORTH ALABAMA (UNA)

1. Bachelor of Science in Information Technology (CIP 11.0103)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Sanders moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

UNIVERSITY OF NORTH ALABAMA (UNA) (CONT'D)

2. Master of Science in Mathematics (CIP 27.0101)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

UNIVERSITY OF WEST ALABAMA (UWA)

1. Doctor of Education in Rural Education (CIP 13.9999)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner McKinney moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

ALABAMA COMMUNITY COLLEGE SYSTEM (ACCS)

BISHOP STATE COMMUNITY COLLEGE

1. Certificate in Structural Welding (CIP 48.0508)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner Sanders seconded. Motion carried.

GADSDEN STATE COMMUNITY COLLEGE

1. Associate in Applied Science in Diagnostic Medical Sonography (CIP 51.0910)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Calametti moved to accept the staff recommendation for approval. Commissioner Sanders seconded. Motion carried.

INGRAM STATE TECHNICAL COLLEGE

1. Certificate in Carpentry (CIP 46.0201)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Pylant moved to accept the staff recommendation for approval. Commissioner Buntin seconded. Motion carried.

INGRAM STATE TECHNICAL COLLEGE (CONT'D)

2. Certificate in Cosmetology (CIP 12.0401)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Sanders moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

3. Certificate in Logistics and Supply Chain Technology (CIP 52.0203)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Buntin moved to accept the staff recommendation for approval. Commissioner McGriff seconded. Motion carried.

SOUTHERN UNION STATE COMMUNITY COLLEGE

1. Associate in Applied Science in Physical Therapy Assistant (CIP 51.0806)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Buntin moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

TRENHOLM STATE COMMUNITY COLLEGE

1. Associate in Applied Science in Nursing—ADN (CIP 51.3801)

   Ms. Margaret Pearson presented the staff recommendation to the Commission with a recommendation for approval.

   RESOLVED: Commissioner Sanders moved to accept the staff recommendation for approval. Commissioner Calametti seconded. Motion carried.

J. **Extensions/Alterations to Existing Programs of Instruction**

RESOLVED: Commissioner Pylant moved that the Commission accept Extensions/Alterations of Existing Programs 1 through 6. Commissioner Sanders seconded. Motion carried.

1. Alabama A&M University, Addition of a Concentration in General Music to the Existing BM in Music (CIP 50.0901)

2. University of Alabama at Birmingham, Addition of a Concentration in Cybersecurity Management to the Existing BS in Management Information Systems (CIP 52.1201)

3. University of Alabama at Birmingham, Addition of a Concentration in Exercise Bioenergetics to the Existing BSEd in Kinesiology (CIP 13.1314)

4. University of Alabama at Birmingham, Addition of a Option in Environmental and Occupational Health to the Existing MPH in Public Health (CIP 51.2201)

J. **Extensions/Alterations to Existing Programs of Instruction (Cont'd)**

5. University of North Alabama, Addition of an Option in Chemial Engineering Technology to the Existing BS in Engineering Technology (CIP 15.0000)

6. Troy University, Addition of a Nursing Leadership Track to the Existing DNP in Nursing (CIP 51.3802)

IX. Information Items

RESOLVED: Commissioner Sanders moved that the Commission accept Information Items 1 through 9. Commissioner Calametti seconded. Motion carried.

1. Implementation of Approved Programs
2. Summary of Post Implementation Reports
3. Implementation of New Short Certificate Programs (Less than 30 Semester Hours)
4. Changes to the Academic Program Inventory
5. Implementation of Non-Degree Programs at Senior Institutions
6. Implementation of Distance Education Programs
7. Change in the Name and Establishment of Centers and Departments
8. Annual Off-Campus Site Follow-Up Report for Academic Year 2016-2017
9. University of North Alabama, Addition of a Traditional Alternative Class A Teaching Certificate in Family and Consumer Sciences to the Existing MAEd in Secondary Education (CIP 13.1205)

X. Adjournment

The meeting was adjourned at 11:50 a.m. The next meeting of the Commission is scheduled for March 9, 2018.

_____
Charles Ball, Chairman

Sworn to and subscribed before
me this the ___ day of _____
2018.

_____
Jim Purcell, Executive Director

_____
Notary Public

DISCUSSION ITEM A: Fall Enrollment Trends Report, 2013-2017

Staff Presenter: Mrs. Subrena Simpkins
Director of Research Services

Staff Recommendation: For discussion only

Background: This PowerPoint presentation details Alabama postsecondary fall enrollment trends for the five-year period of 2013 through 2017. Trends are reviewed by sector, race/ethnicity, gender, residency status, age, and intensity (full-time versus part-time status). Information of the 2016-17 college completions data are also included.

Data in this report were collected from the Alabama Statewide Student Unit Record Data System, which now houses **11,716,717** student records.

Supporting Documentation: Sources: The Alabama Statewide Student Unit Record Data System and the Integrated Postsecondary Education Data System (IPEDS).

DECISION ITEM A:	Administrative Code: Proposed Amendment to Program Review Chapter 300-2-1-.02
Staff Presenter:	Dr. Elizabeth C. French, Director Office of Institutional Effectiveness and Planning
Staff Recommendation:	That the Commission approve the proposed amendment to Chapter 300-2-1-.02 regarding the operation of non-resident institutions in Alabama in accord with audit findings of Examiners of Public Accounts presented at the exit interview on January 25, 2018. The amendment is intended to publish in the regulations the current fee structure associated with the programmatic review of proposed postsecondary course offerings in Alabama by non-Alabama institutions seeking state authorization.
Statutory Authority:	No institution of postsecondary education located outside of Alabama may offer units or programs of instruction within Alabama without prior approval of the Commission, except for those units or programs approved by regional accrediting authorities located in states participating in reciprocity agreements entered into by the Governor or the Commission. The Commission under its rulemaking authority shall establish criteria for the approval of such institutions and program.
Supporting Documentation:	Proposed amendment to Chapter 300-2-1.02, Administrative Code (attached). .

ALABAMA COMMISSION ON HIGHER EDUCATION
ADMINISTRATIVE CODE

INSTITUTIONAL EFFECTIVENESS AND PLANNING

CHAPTER 300-2-1
PROGRAM REVIEW

300-2-1-.02 Review and Approval or Disapproval of Proposed Postsecondary Course Offerings in Alabama by Non-Alabama Institutions Seeking State Authorization.

(1) **Purpose.** It is the responsibility of the Alabama Commission on Higher Education to establish policies and procedures for the review and approval or disapproval of all proposed postsecondary credit courses or program of instruction offered in the State of Alabama by non-Alabama institutions of higher education. These institutions must also be licensed to do business in Alabama by the Alabama Community College System.

(2) **Definitions.** For purposes of this rule, the following definitions apply:

(a) Programs of Instruction (Courses): Any course or sequence of courses for which credit toward any postsecondary degree, certificate, or diploma is to be awarded.

(b) System: The Alabama Community College System.

(c) Exempt Institutions: Those postsecondary institutions that are granted a certificate of exemption from licensure by the Alabama Community College System and for which the System has waived formal licensure application and review.

(d) Faculty: A faculty member who has a contract for formal teaching responsibilities with the proposing institution.

(e) Main Campus: The physical boundaries of the location of an institution's principal administrative offices. In the case of an institution eligible for Title IV funds, the campus designated by the U.S. Department of Education's Office of Postsecondary Education identification number (OPEID).

(f) Non-Alabama Institutions: A postsecondary educational institution, public or private, profit or nonprofit, whose main campus or headquarters is located outside the State of Alabama.

(g) Unaccredited Institution: An institution not accredited by an agency recognized by the United States Department of Education or Council on Higher Education Accreditation.

(3) **Procedures for Program Approval of an Unaccredited Institution.** As a prerequisite to program approval, an unaccredited institution requesting to offer degree programs in Alabama must undergo an external review of its programs of study by an outside consultant(s) chosen by the Commission. The unaccredited institution will underwrite all costs related to the external review.

(4) **Institutions exempt under the Alabama Private School License Law.** Those non-Alabama institutions that are granted a certificate of exemption from licensure by the System and for which the System has waived formal licensure application and review shall nonetheless apply for Commission review and approval of courses or programs of instruction. Every application for approval of a course or program of instruction shall be accompanied by a certificate of exemption from formal licensure issued by the Alabama Community College System.

(5) **Commission Review Criteria.** The Commission shall establish review criteria designed to evaluate the academic quality of proposed courses or programs of instruction. The review includes, but is not restricted to: The qualifications of faculty and supporting staff, the quality of academic support resources (library, laboratories, etc.), and the academic validity of the proposed courses. In general, program proposals must meet standards used by the Commission proposals for new off-campus offerings by in-state public institutions and in doing so be in full compliance with the Southern Association of Colleges and Schools Commission on Colleges (SACS COS) guidelines. Since the use of state appropriated funds is not involved, the question of unnecessary duplication is not an issue when proposals of non-Alabama institutions are reviewed.

(6) **Site visits.** The Commission reserves the right to conduct a site visit to the proposed location for an evaluation of a course or program of instruction before or subsequent to concluding its review of a pending application. There is no charge for mileage or per diem payments to staff employees of the Commission for such visits. In the event that the Commission appoints other education or external specialists as on-site visit consultants, the appointees will be paid a consulting fee as well as expenses.

(7) **Timeline for Review.** In the absence of unavoidable delays, the Commission will report its approval or disapproval of proposed courses or program(s) of instruction to the System and to the applying institution within sixty (60 working days following receipt of the required data and information forms from the applying institution.

(8) Fees. Application materials for initial program approval or for renewal shall be accompanied by a programmatic review fee in accord with the programmatic review fee schedule published within the Commission's application(s) for programmatic approval and posted to the Commission's website. The programmatic review fee schedule may be revised from time to time upon reasonable notice at the discretion of the commission. The current fee schedule is: Application for Single Institution,$2500; Renewal Application for Single Institution,$1500; Desk Audit Application,$500.

(9) **Appeals.** Any person or institution aggrieved by the action of the Commission in its administration of this rule may, by written petition filed with the Commission within thirty (30) days after notice of the aggrieving action, request a rehearing by the Commission. The Commission shall schedule the requested rehearing to be held no less than twenty (20) nor more than thirty (30) days after receipt of the petition. The aggrieved party may present written and oral evidence supporting its petition and may be represented by counsel, if desired. The decision of the Commission following the rehearing shall be final.

Author: Elizabeth French
Statutory Authority: Code of Ala. 1975, §§16-5-1, et seq.
History: Filed December 10, 1985. Rule 300-2-1-.02 was formerly referenced as Chapter 300-2-1; it has been repealed and reinserted as a rule within this chapter. The rule title remains unchanged from its previous chapter title. The contents are also unchanged except for slight format changes and the addition and deletion of certain definitions: Filed April 10, 1989. **Amended:** Filed August 21, 1996; effective

September 25, 1996. **Amended:** Filed January 6, 2003; effective February 10, 2003. **Amended:** Filed May 6, 2004; effective June 10, 2004. **Amended:** Filed February 8, 2010; effective March 15, 2010. **Amended:** Filed November 5, 2013; effective December 10, 2013. **Amended:** Filed May 9, 2016; effective June 23, 2016.

DECISION ITEM B:	Final Approval of Procedural Changes Regarding Post-Implementation Conditions Review
Staff Presenter:	Dr. Lenny Lock Director of Instruction and Special Projects
Staff Recommendation:	That the Commission grant final approval to the proposed post-implementation procedural changes.
Background:	The preliminary approval of the Procedural Changes regarding Post-Implementation Conditions Review, granted by the Commission on December 8, 2017, was filed with the Legislative Reference Service and subsequently published in *Alabama Administrative Monthly* as required. Interested parties had 35 days to comment. No comments were received. Since there were no comments, the Commission may grant final approval to these proposed changes at its March 9, 2018 meeting. The proposed changes will then go into effect 45 days after the changes are certified by the ACHE Executive Director and subsequently filed with the Legislative Reference Service.
Statutory and Administrative Basis:	The Code of Alabama 1975 in Section 16-5-8 (a)(1) authorizes the Commission on Higher Education to review periodically all new and existing programs and units of instruction, research, and public service funded by state appropriations at the state universities and colleges and to share with the appropriate governing board, through the president of the institution, and state Legislature, its recommendations. Additionally, the Code of Alabama 1975 in Section 16-5-8 (2) states “as a part of its program review process, the commission shall enforce, monitor, and report on minimum degree productivity standards for all existing programs of instruction at public two-year and four-year institutions of higher education.” More specific reference to these conditions is provided in The Alabama Commission On Higher Education Planning and Coordination Administrative Code, Chapter 300-2-1.05, Program Review, 6.(d).
Supporting Documentation:	The Alabama Commission On Higher Education Planning and Coordination Administrative Code, Chapter 300-2-1-.04, Operational Policy On The Approval, Disapproval, Deferral, And Withdrawal Of New Programs Of Instruction, attached.

Attachment 1
The Alabama Commission On Higher Education
Planning and Coordination Administrative Code, 300-2-1-.04

Operational Policy On The Approval, Disapproval, Deferral, And Withdrawal Of New Programs Of Instruction

(1) The purpose of the operational policy on the approval, disapproval, deferral, and withdrawal of new programs of instruction is to ensure that all such programs are subject to a fair and consistent evaluation and determination.

(2) It is the responsibility of the Alabama Commission on Higher Education to establish policies and procedures for approving, disapproving, deferring, and withdrawing new programs of instruction.

(3) Approval: The approval of a new program of instruction shall require the concurrence of a majority (7) of all the members of the Commission.

(4) Disapproval: A program that receives a negative recommendation by a majority vote of Commission members present may be reconsidered after one year at the request of the institution, provided substantive changes indicate the need for reconsideration.

(5) Disapproval: A program that receives a favorable vote of a majority of the members present but which falls short of receiving a favorable vote by a majority of the members of the Commission may be reconsidered at the next regularly scheduled meeting at the request of the institution provided substantive changes indicate the need for reconsideration.

(6) Deferral: Should the Commission (by majority vote of members present) defer action on a proposed program, it will specify the future meeting at which the program will be reconsidered, being mindful of the ten-month deadline for program action. If the ten-month limitation has been reached or will be reached before the next scheduled meeting of the Commission, action will not be deferred; however, if the Commission decides that special consideration is warranted, such a program may be disapproved by a majority of members present with the provision that the program can be reconsidered at a specified meeting scheduled prior to the one-year restriction on resubmission of disapproved programs. Deferral is a Commission, not an institutional prerogative.

(7) Withdrawal: Should an institution withdraw a proposed program from Commission consideration, it may be resubmitted at any time; however, the time which has expired prior to the withdrawal will not count toward the ten-month deadline on Commission program action. The Commission will have ten months beginning at the time the program is resubmitted to take action on the program.

(8) Post-implementation conditions on enrollment, graduation rates, and the efficacy of the assessment system will be placed on the approval of new academic programs.

(a) Programs with program-specific accreditation will be required to report steps to be taken to obtain accreditation in the proposal/ application, and the accreditation status as a post-implementation condition of approval. Programs which require licensure will be required to report steps to be taken to optimize exam pass rates in the proposal/ application, and the licensure pass rate as a post-implementation condition of approval.

(b) The unemployment/ continuing education rate post-implementation reporting will be considered as informational/ notification only, and will not be a consequential consideration in evaluating attaining/ meeting post-implementation.

(9) The window will be 30 months (2 ½ years) from the time of Commission approval to implementation, before Commission approval will expire.

Author: William O. Blow
Statutory Authority: Code of Ala. 1975, §§16-5-1, et seq.
History: Filed April 10, 1989. Amended: Filed March 12, 1996;
effective April 16, 1996.

DECISION ITEM CAL-1: Calhoun Community College, Associate in Applied Science in Dental Hygiene (CIP 51.0602)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description/Objectives: Dental Hygiene prepares individuals to clean teeth and apply preventive materials, provide oral health education and treatment counseling to patients, identify oral pathologies and injuries, and manage dental hygiene practices. This includes instruction in dental anatomy, microbiology, and pathology; dental hygiene theory and techniques; cleaning equipment operation and maintenance; dental materials; radiology; patient education and counseling; office management; supervised clinical training; and professional standards. In addition, the following program objectives will allow the program to:

- Expand the limited opportunity for Alabama residents to graduate with an Associate in Applied Science degree in Dental Hygiene from an accredited, non-profit institution.
- Increase healthcare program offerings to students in north Alabama in a field of growing employment.
- Graduate knowledgeable, skilled, competent, professional, and service-oriented entry-level Dental Hygienists to provide quality care that meets the needs of employers and the public.

Measurable program objectives:

1. At least 90 percent of program graduates will report satisfaction with the overall adequacy of preparation for entry-level dental hygiene practice.
2. At least 80 percent of program graduates will pass the Dental Hygiene National Board and Regional Board exams on the first attempt.
3. At least 80 percent of graduates seeking employment will be employed as a dental hygienist within 6 months of licensure.
4. At least 90 percent of employers will rate the CAL dental hygiene graduate as effectively prepared for entry into practice.
5. The attrition rate of enrolled students in the dental hygiene program will be 30 percent or less per cohort.
6. The program attains and maintains American Dental Association Commission on Dental Accreditation (CODA) status at all times.

Role: The proposed program is within the instructional role recognized for Calhoun Community College (CAL).

Mode of Delivery: Distance learning will not be utilized for the proposed program.

Similar Programs: Wallace State Community College (Hanceville) has the only other Dental Hygiene program located at CIP 51.0602 in the Academic Program Inventory.

Collaboration: The only other Dental Hygiene program is located 50 miles away from CAL. The distance of this program makes sharing of faculty and facilities impractical.

Licensure: In Alabama, dental hygienists must submit a licensure application and satisfactorily complete the Alabama Dental Hygiene Board Exam administered by the Council of Interstate Testing Agencies (CITA). This practical exam consists of two components - the Patient Treatment Clinical Exam and the Computer Simulated Clinical Examination.

Graduates of CODA accredited dental hygiene programs are additionally eligible to sit for the written National Board of Dental Hygiene Examination, a requirement for licensure in most states. Success on both a practical and written dental hygiene exam affords graduates of AAS degree programs greater professional opportunities.

Resources: A total of $2,386,850 in new funds will be needed for the program in the first five years, and a total of $2,711,850 will be available through internal reallocations, extramural funds and tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. Following program approval, CAL will seek accreditation through the Commission on Dental Accreditation (CODA). This process could take anywhere from 12 to 18 months.

2. CAL conducted a survey of 72 dental offices in seven north Alabama counties. The survey asked dentists how many dental hygienist vacancies they anticipated in their practice over the next three years. A total of twenty-six surveys were returned that indicated that there would be 30 dental hygienist opening in the next three years.

DECISION ITEM CAL-1: Calhoun Community College, Associate in Applied Science in Dental Hygiene (CIP 51.0602)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Associate in Applied Science and Certificate in Dental Hygiene.

The program will have the implementation date and post-implementation conditions listed below.

Implementation Date: The proposed program will be implemented January 2019. Based on Commission policy, the proposed program must be implemented by March 9, 2020 or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 13, based on the proposal.

2. That the annual average number of graduates for the period 2020-21 through 2023-24 (four-year average) will be at least 9, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment.

4. That information regarding an overall assessment of the program will be provided, particularly as related to objectives and assessment measures stated in the proposal.

Calhoun Community College (CAL) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than February 1, 2024.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Calhoun Community College proposal, dated December 8, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

INSTITUTION Calhoun Community College

PROGRAM Associate in Applied Science in Dental Hygiene (CIP 51.0602)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2019-20	2020-21	2021-22	2022-23	2023-24	TOTAL
FACULTY	$180,000	$257,000	$257,000	$268,000	$268,000	$1,230,000
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$800,000	$0	$0	$0	$0	$800,000
EQUIPMENT	$250,000	$0	$0	$0	$0	$250,000
STAFF	$0	$20,000	$20,000	$20,000	$20,000	$80,000
OTHER	$16,850	$2,500	$2,500	$2,500	$2,500	$26,850
TOTAL	$1,246,850	$279,500	$279,500	$290,500	$290,500	$2,386,850

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2019-20	2020-21	2021-22	2022-23	2023-24	TOTAL
INTERNAL REALLOCATIONS	$1,170,350	$125,220	$103,940	$112,660	$110,380	$1,622,550
EXTRAMURAL	$100,000	$75,000	$50,000	$50,000	$50,000	$325,000
TUITION	$76,500	$154,280	$175,560	$177,840	$180,120	$764,300
TOTAL	$1,346,850	$354,500	$329,500	$340,500	$340,500	$2,711,850

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2019-20	2020-21	2021-22	2022-23	2023-24	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	10	20	25	30	30	23
NEW ENROLLMENT HEADCOUNT	10	10	15	15	15	13
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	5	10	10	10	9

Attachment 3
Calhoun Community College
Associate in Applied Science in
Dental Hygiene

Dental Hygiene Program Requirements			
Semester	Course #	Course Name	Semester Hours
1	ORI 100	Freshman Seminar	1
	BIO 201	Human Anatomy & Physiology I	4
	DHY 110	Dental Hygiene Theory	2
	DHY 112	Pre-Clinical Dental Hygiene	3
	DHY 114	Dental Radiology	3
	DHY 116	Dental Anatomy, Histology & Embryology	2
	DHY 118	Anatomy, Embryology, & Histology of the Head & Neck	2
			1st semester total = 17
2	BIO 201	Human Anatomy & Physiology II	4
	ENG 101	English Composition I	3
	DHY 120	Dental Materials	2
	DHY 122	Clinical Dental Hygiene I	3
	DHY 124	Dental Hygiene Theory II	2
	DHY 126	Periodontology	2
	DHY 128	Pharmacology / Medical Emergencies	2
			2nd semester total = 18
3	BIO 220	General Microbiology	4
	PSY 200	General Psychology	3
	CHM 104	Introduction to Inorganic Chemistry	4
	DHY 130	Biological Chemistry & Applied Nutrition	1
	DHY 132	Clinical Dental Hygiene II	2
	DHY 134	Dental Hygiene Theory III	1
	DHY 216	Dental Research	1
			3rd semester total = 16
4	SOC 200	Introduction to Sociology	3
	MTH 100	Intermediate College Algebra	3
	DHY 210	General and Oral Pathology	2
	DHY 212	Clinical Dental Hygiene III	4
	DHY 214	Dental Hygiene Theory IV	1
	DHY 217	Community Dental Health	1
			4th semester total = 14
5	SPH 106/107	Fundamentals of Oral Communication or Fundamentals of Public Speaking	3
	HUM / FA	Humanities or Fine Arts Elective	3
	DHY 218	Clinical Dental Hygiene IV	4
	DHY 220	Dental Hygiene Theory V	1
			5th semester total = 11
			Total hours required for degree = 76

DECISION ITEM ENT-1: Enterprise State Community College, Associate in Applied Science and Certificate in Medical Assistant Technology (CIP 51.0801)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description/Objectives: The Medical Assistant Technology (MAT) program will prepare individuals, under the supervision of physicians to provide medical office administrative services and perform clinical duties including patient intake and care, routine diagnostic and recording procedures, pre-examination and examination assistance, and the administration of medications and first aid. The program includes instruction in basic anatomy and physiology; medical terminology; medical law and ethics; patient psychology and communications; medical office procedures; and clinical diagnostic, examination, testing, and treatment procedures. Further, objectives of the proposed program will include:

- Enhancing the health-related offerings of Enterprise State Community College to provide additional options for students seeking a career as a healthcare practitioner.
- Recruiting, retaining, and preparing students for careers in clinics, nursing homes, physician's offices and hospitals.
- Assisting in meeting the community' needs for healthcare practitioners.

Role: The proposed program is within the instructional role recognized for Enterprise State Community College (ENT).

Mode of Delivery: According to the application, MAT classes will not be offered online, with the exception of MAT/HIT 101 (Medical Terminology) and MAT 120 (Medical Administrative Procedures I). Currently, the following required general education courses are offered online: BIO 201 (Biology), ENG 101 (English), MTH 100 (Math), SPH 106 (Oral Communications), IDS 102 (Ethics), and PSY 200 (Psychology).

Similar Programs: The following schools have an Associate in Applied Science program in Medical Assistant Technology: Chattahoochee Valley Community College, Coastal Alabama Community College, Drake State Community and Technical College, Northeast Alabama Community College, Northwest-Shoals Community College, Southern Union State Community College, Trenholm State Community and Technical College, Wallace State Community College (Dothan), and Wallace State Community College (Hanceville).

Collaboration: Enterprise State Community College, Lurleen B. Wallace Community College, and Wallace State Community College (Dothan) (WSD) are currently collaborating to provide dual enrollment opportunities in Medical Assistant Technology for area high school students on ENT's Enterprise Campus.

Licensure: Although licensure is not required for the proposed Medical Assistant Technology program, students may seek the following industry recognized certifications:

- Certified Patient Care Technician (CPCT)
- Phlebotomy Technician (CPT)
- Certified Nursing Assistant (CNA)
- Certified EKG Technician (CET)
- Certified Medical Administrative Assistant (CMAA)
- Certified Medical Assistant (CMA)

Resources: A total of $663,000 in new funds will be needed for the program in the first five years. A total of $764,900 will be available through internal reallocation and tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. According to ENT officials, several local healthcare facilities in their service area have expressed the need for the proposed program.

2. Annual demand has increased in Dale and Geneva counties for Medical Assistants. Both counties are shared between Wallace State Community College (Dothan), Lurleen B. Wallace Community College, and Enterprise State Community College. ENT officials believe the proposed program is not duplicative because of the high demand from surrounding counties for Medical Assistants that cannot be met by one institution.

DECISION ITEM ENT-1: Enterprise State Community College, Associate in Applied Science and Certificate in Medical Assistant Technology (CIP 51.0801)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Associate in Applied Science and Certificate in Medical Assistant Technology.

The program will have the implementation date and post-implementation conditions listed below.

Implementation Date: The proposed program will be implemented August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 10, based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 8, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment.

4. That information regarding an overall assessment of the program will be provided, particularly as related to objectives and assessment measures stated in the proposal.

Enterprise State Community College (ENT) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Application Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Enterprise State Community College proposal, dated December 8, 2017. Available upon request.

5. "Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

INSTITUTION Enterprise State Community College

PROGRAM Associate in Applied Science and Certificate in Medical Assistant Technology (CIP 51.0801)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$108,000	$108,000	$108,000	$110,000	$110,000	544,000
LIBRARY	$10,000	$5,000	$3,000	$3,000	$3,000	$24,000
FACILITIES	$25,000	$0	$0	$0	$0	$25,000
EQUIPMENT	$25,000	$10,000	$10,000	$5,000	$5,000	$55,000
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$3,000	$3,000	$3,000	$3,000	$3,000	$15,000
TOTAL	$171,000	$126,000	$124,000	$121,000	$121,000	$663,000

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$125,000	$50,000	$25,000	$10,000	$5,000	$215,000
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$53,280	$101,250	$116,280	$131,670	$147,420	$549,900
TOTAL	$178,280	$151,250	$141,280	$141,670	$152,420	$764,900

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	8	15	17	19	21	16
NEW ENROLLMENT HEADCOUNT	8	9	10	11	12	10
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	6	7	8	9	8

Attachment 3

Enterprise State Community College
Associate in Applied Science and Certificate in
Medical Assistant Technology

Program Requirements

	Course #	Course Name	Sem. Hours/ SH	Total
Semester 1	**MAT 101**	**Medical Terminology**	**3**	
	MAT 111	**Clinical Procedures for the Medical Assistant**	**3**	
	MAT 125	**Laboratory Procedures I for the Medical Assistant**	**3**	
	BIO 201	**Anatomy & Physiology I**	**4**	
	ENG 101	**English Composition I**	**3**	
				16
Semester 2	**MAT 211**	**Clinical Procedures I for the Medical Assistant**	**3**	
	MAT 218	**EKG Technician**	**3**	
	MAT 215	**Laboratory Procedures II for the Medical Assistant**	**3**	
	MAT 239	**Phlebotomy Preceptorship**	**3**	
	MAT 200	**Management of Office Emergencies**	**2**	
	BIO 202	**Anatomy & Physiology II**	**4**	
				18
		Completion of Sem 2: Student is eligible for Phlebotomy Certification; EKG Certification		
Semester 3	**MAT120**	**Medical Administrative Procedures I**	**3**	
	MAT 216	**Pharmacology for the Medical Office**	**4**	
	MTH 100	**Intermediate College Algebra**	**3**	
	SPH 106	**Fundamentals of Oral Communication**	**3**	
	IDS 102	**Ethics**	**3**	
				16
Semester 4	**MAT 220**	**Medical Office Insurance**	**3**	
	MAT 229	**Medical Assistant Practicum**	**3**	
	MAT 228	**Medical Assistant Review Course**	**1**	
	MAT	**Electives**	**3-6**	
	PSY 200	**General Psychology**	**3**	**13-16**
		Total Hours Required for Degree		**63-66**

Medical Assistant Technology
Certificate

Program Requirements

	Course #	Course Name	Sem. Hours/ SH	Total
Semester 1	**MAT 101**	**Medical Terminology**	**3**	
	MAT 111	**Clinical Procedures for the Medical Assistant**	**3**	
	MAT 125	**Laboratory Procedures I for the Medical Assistant**	**3**	
	BIO 201	**Anatomy & Physiology I**	**4**	
				13
Semester 2	**MAT 211**	**Clinical Procedures I for the Medical Assistant**	**3**	
	MAT 218	**EKG Technician**	**3**	
	MAT 215	**Laboratory Procedures II for the Medical Assistant**	**3**	
	MAT 239	**Phlebotomy Preceptorship**	**3**	
	BIO 202	**Anatomy & Physiology II**	**4**	
				16
		Completion of Sem 2: Student is eligible for Phlebotomy Certification; EKG Certification		
Semester 3	**MAT120**	**Medical Administrative Procedures I**	**3**	
	MTH 100	**Intermediate College Algebra**	**3**	
	SPH 106	**Fundamentals of Oral Communication**	**3**	
	IDS 102	**Ethics**	**3**	
				12
Semester 4	**MAT 220**	**Medical Office Insurance**	**3**	
	MAT 229	**Medical Assistant Practicum**	**3**	
	MAT 200	**Management of Office Emergencies**	**2**	
	ENG 101	**English Composition I**	**3**	
				11
		Total Hours Required for Degree		**52**

DECISION ITEM SHEL-1: Shelton State Community College, Associate in Applied Science in Welding (CIP 48.0508)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description/Objective: The proposed Welding program will prepare individuals to apply technical knowledge and skills to join or cut metal surfaces. The program will include instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards.

According to program officials, the main program objective is to establish welding skills necessary for entry-level job placement and to enhance the skills of experienced welders in various arc-welding processes used by industry. The student will be able to make quality welds, layout and fabricate various pipe connections, perform repair work, and have knowledge of welding codes and blueprint reading.

Role: The proposed program is within the instructional role for Shelton State Community College (SHC).

Mode of Delivery: Due to the hands-on nature of the program, the proposed program will not be offered online.

Similar Programs: Currently, there are a total of sixteen (16) Certificate programs (including SHC) in Welding located at CIP 48.0508 in the Academic Program Inventory. Bevill State Community College has the only Associate in Applied Science/Certificate program in Welding at CIP 48.0508.

Collaboration: According to SHC officials, collaborations will not be sought at this time.

Licensure: Although licensure is not required for the proposed Welding program, students may seek business and industry credentials. According to program officials, the program will provide students with an opportunity to obtain the American Welding Society industry recognized credential when the program is completed.

Resources: No new funds will be needed for the program in the first five years, and a total of $463,680 will be available through tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. According to the program application, occupational forecast data indicates employers within SHC's service area will need to fill 149 welding related positions over the next 10 years.

2. An articulation agreement between SHC and the United Association of Journeymen and Apprentices of Plumbing and Pipe Fitting (United Association) supports the addition of an advanced Welding award. The articulation agreement allows SHC Welding graduates to enter the United Association Apprenticeship training program with advanced placement and pay.

3. An AAS in Welding may provide graduates with opportunities for advancement not currently available to individuals lacking a college degree.

DECISION ITEM SHEL-1: Shelton State Community College, Associate in Applied Science in Welding (CIP 48.0508)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Associate in Applied Science in Welding.

The program will have the implementation date and post-implementation conditions listed below.

Implementation Date: The proposed program will be implemented August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 10, based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 8, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment.

4. That information regarding an overall assessment of the program will be provided, particularly as related to objectives and assessment measures stated in the proposal.

Shelton State Community College (SHC) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Application Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Shelton State Community College proposal, dated December 8, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

INSTITUTION Shelton State Community College

PROGRAM Associate in Applied Science in Welding (CIP 48.0508)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$46,368	$86,940	$98,532	$110,124	$121,716	$463,680
TOTAL	$46,368	$86,940	$98,532	$110,124	$121,716	$463,680

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	8	15	17	19	21	16
NEW ENROLLMENT HEADCOUNT	8	9	10	11	12	10
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	6	7	8	9	8

Attachment 3

SHC
Associate in Applied Science in
Welding

	Course #	Course Name	Sem. Hours
Semester 1	WDT 102	SMAW/OFC	6
	WDT 110	Industrial Blueprint Reading	3
	WDT 126	Gas Metal Arc/Flux Cored Arc Welding	6
	ORI 101	Orientation to College	1
Semester 2	WDT 104	SMAW Fillet/PAC/CAC	6
	WDT 106	Shield Metal Arc Welding Groove	6
	WDT 218	Certification Theory	3
	MTH 100 or MTH 116	Intermediate College Algebra or Mathematical Applications or higher level math	3
		Eligible for WDT STC	
Semester 3	WDT 232	Gas Tungsten Arc Welding	6
	WDT 260	SMAW Carbon Pipe	6
	SPH 106 or 107	Fundamentals of Oral Communication or Fundamentals of Public Speaking	3
Semester 4		History or Social/Behavioral Science Elective	3
	ENG 101	English Composition I	3
	CIS 146	Microcomputer Applications	3
		Computer Science or Math or Natural Science Elective	3-4
		Fine Art or Humanities	3
		Total Hours Required for Degree	64-65

DECISION ITEM SHEL-2: Shelton State Community College, Associate in Applied Science and Certificate in Computer Science Technology (CIP 11.0101)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description/Objective: The proposed Computer Science Technology program will focus on computing, computer science, and information science and systems. Program objectives of the Computer Science degree include: (a) providing accessible postsecondary computer science education and training for individuals residing in SHC's service area; (b) establishing degree and certificate options that will qualify individuals for numerous computer related career options within SHC's service area; and (c) enhancing in-field employability by providing students opportunities to obtain industry specific certifications.

Effectiveness of the Computer Science program will include evaluation of the following student learning outcomes:

- Proper setup and maintenance of secure LANs including network architecture, IP protocol, and OSI implementation.
- Adeptness in Structured Query Language and relational database theoretical models.
- Fundamental understanding and operation of programmable computer software and operating systems.
- Student obtainment of industry specific certifications such as CompTIA, Cisco, and Microsoft.

Role: The proposed program is within the instructional role for Shelton State Community College (SHC). Approval of the proposed program will expand academic subdivision groupings "Computer and Information Science" to the Certificate and AAS levels.

Mode of Delivery: Program delivery methods will include, but not limited to, traditional classroom, traditional laboratory, online instruction, and hybrid instruction. Initially online/hybrid course offerings will be limited to approximately 10 percent of AAS degree requirements. Courses identified as being deliverable via online/hybrid include CIS 146 Microcomputer Applications and CIS 203 Introduction to the Information Highway.

Similar Programs: Currently, there are a total of twenty-two (22) schools with Associate and Certificate programs in Computer Science located at CIP 11.0101 in the Academic Program Inventory.

Collaboration: Collaborations will not be sought at this time.

Licensure: Although licensure is not required, the Computer Science Technology program will provide students with opportunities to obtain multiple industry credentials. These credentials will include, but are not limited to various CompTIA, Cisco, and Microsoft credentials.

Resources: A total of $475,000 in estimated new funds will be needed for the program in the first five years, and a total of $785,516 will be available through internal reallocations, extramural funds, and tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. According to the program application, occupational forecast data indicates employers within SHC's service area will need to fill 488 computer related positions over the next 10 years.

2. Data from companies who completed the Community and Business Needs Survey conducted by SHC officials indicate an average annual demand of 49 computer related positions in the institution's service area.

DECISION ITEM SHEL-2: Shelton State Community College, Associate in Applied Science and Certificate in Computer Science Technology (CIP 11.0101)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Associate in Applied Science and Certificate in Computer Science Technology.

The program will have the implementation date and post-implementation conditions listed below.

Implementation Date: The proposed program will be implemented August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 10, based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 8, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment.

4. That information regarding an overall assessment of the program will be provided, particularly as related to objectives and assessment measures stated in the proposal.

Shelton State Community College (SHC) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Application Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Shelton State Community College proposal, dated December 8, 2017. Available upon request.

5. "Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

INSTITUTION Shelton State Community College

PROGRAM Associate in Applied Science in Computer Science Technology (CIP 11.0101)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$70,000	$70,000	$75,000	$75,000	$75,000	$365,000
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$45,000	$65,000	$0	$0	$0	$110,000
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$115,000	$135,000	$75,000	$75,000	$75,000	$475,000

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$100,000	$115,000	$75,000	$75,000	$75,000	$440,000
EXTRAMURAL	$22,500	$15,000	$0	$0	$0	$37,500
TUITION	$39,744	$55,890	$63,342	$70,794	$78,246	$308,016
TOTAL	$162,244	$185,890	$138,342	$145,794	$153,246	$785,516

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	8	15	17	19	21	16
NEW ENROLLMENT HEADCOUNT	8	9	10	11	12	10
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	6	7	8	9	8

Attachment 3

SHC
Associate in Applied Science in
Computer Science Technology

	Course #	Course Name	Sem. Hours
Semester 1	CIS 146	Microcomputer Applications	3
	CIS 149	Introduction to Computers	3
	CIS 191	Intro to Computer Programming Concepts (CIS 193A co-requisite)	3
	CIS 193A	Intro to Computer Programming Lab (CIS 191 co-requisite)	1
	ENG 101	English Composition I	3
	ORI 101	Orientation to College	1
Semester 2	CIS 157	Introduction to APP Development-Swift	3
	CIS 203	Introduction to the Information Highway	3
	CIS 249	Microcomputer Operating Systems	3
	MTH 100 or MTH 116	Intermediate College Algebra or Mathematical Applications or higher level math	3
Semester 3	CIS 268	Software Support	3
	CIS 220	APP Development with Swift I	3
	CIS 251	C++ Programming (CIS 193B co-requisite)	3
	CIS 193B	C++ Programming Lab (CIS 251 co-requisite)	1
		CIS Programming & APP Development Elective	3
Semester 4	CIS 269	Hardware Support	3
	CIS 227	APP Development with Swift II	3
		CIS Programming & APP Development Elective	3-4
	SPH 106 or 107	Fundamentals of Oral Communication or Fundamentals of Public Speaking	3
Semester 5		CIS Programming & APP Development Elective	3-4
		History or Social/Behavioral Science Elective	3
		Fine Art or Humanities Elective	3
		Total Hours Required for Degree	60-62

Certificate

	Course #	Course Name	Sem. Hours
Semester 1	CIS 149	Introduction to Computers	3
	CIS 191	Intro to Computer Programming Concepts (CIS 193A co-requisite)	3
	CIS 193A	Intro to Computer Programming Lab (CIS 191 co-requisite)	1
	CIS 203	Introduction to the Information Highway	3
	MTH 100 or MTH 116	Intermediate College Algebra or Mathematical Applications or higher level math	3
	ORI 101	Orientation to College	1
Semester 2	CIS 157	Introduction to APP Development-Swift	3
	CIS 268	Software Support	3
	CIS 249	Microcomputer Operating Systems	3
	ENG 101	English Composition I	3
Semester 3	CIS 269	Hardware Support	3
	CIS 220	APP Development with Swift I	3
	CIS 251	C++ Programming (CIS 193B co-requisite)	3
	CIS 193B	C++ Programming Lab (CIS 251 co-requisite)	1
	SPH 106 or 107	Fundamentals of Oral Communication or Fundamentals of Public Speaking	3
Semester 4	CIS 227	APP Development with Swift II	3
		CIS Programming & APP Development Elective	3
		CIS Programming & APP Development Elective	3-4
		CIS Programming & APP Development Elective	3-4
		Total Hours Required for Degree	51-53

DECISION ITEM AU-1: Auburn University, Bachelor of Science in Sustainable Biomaterials and Packaging (CIP 03.0599)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description/Objective: According to Auburn University officials, the proposed undergraduate program in Sustainable Biomaterials and Packaging will satisfy several interests. First, incoming freshman will have a 21st century program that not only works to solve environmental problems, but also pays a healthy salary in the process. Second, employers from an emerging biomaterial-based industry are having tremendous problems finding students with the right skill sets. The Forest Products Development Center (FPDC) on the Auburn University campus fields questions all the time as to why there are no students available for the industry.

The packaging industry is an emerging field that desires more sustainable solutions to a petroleum concentrated market. Currently, many of the plastics that are used as packaging products end up in landfills or oceans and takes centuries to degrade. There is thus an increased interest by the younger generation to find sustainable solutions to problems inherited by global climate change and excessive dependence on fossil fuels.

The proposed program will be supported by faculty from the College of Agriculture and the College of Engineering. The curriculum will be STEM oriented, and the first of its kind in the United States because it will utilize supporting faculty across five (5) schools/colleges

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Mode of Delivery: According to the proposal, approximately 5 percent of the program will be offered through distance education modalities. The degree will be traditional lecture and laboratory courses. However, some of the AU required core courses might fall under the "flipped classroom" pedagogy of instruction that focuses on experiential and inquiry-based learning.

Similar Programs: Alabama A&M University has a Bachelor of Science in Forestry located at CIP 03.0599. There are no other baccalaureate programs at that CIP code.

Collaboration: The School of Forestry and Wildlife Sciences (SFWS) will accept credit for equivalent courses taken at other institutions and teaching faculty will interact across departments, especially the College of Business and the College of Science and Math; however, the University is not planning any formal collaborations with other institutions at this time.

Resources: No new funds will be required for the program over the first five years. A total of $3,433,400 through tuition will be available over that period.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. According to AU officials, the School of Forestry and Wildlife Science (SFWS) is the only forest-product based program in Alabama that has the faculty and staff to offer the proposed degree program.

2. The SFWS is the home of the Forest Products Development Center, a region-based research cooperative that has access to and can tap into the billion-dollar industry for support, internships and direction of the degree program.

3. The proposed program curriculum will be supported by faculty from the College of Agriculture and the College of Engineering. The curriculum will be STEM oriented and the first of its kind in the United States.

4. The curriculum for the proposed program will be unique nationally because it utilizes supporting faculty across five (5) schools/colleges.

DECISION ITEM AU-1: Auburn University, Bachelor of Science in Sustainable Biomaterials and Packaging (CIP 03.0599)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Bachelor of Science in Sustainable Biomaterials and Packaging.

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 16, based on the proposal.

2. That the annual average number of graduates for the period 2020-21 through 2022-23 (three-year average) will be at least 9, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in entering graduate school.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Auburn University program proposal, received December 6, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

ATTACHEMENT 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University

PROGRAM: Bachelor of Science in Sustainable Biomaterials and Packaging (CIP 03.0599)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$184,400	$379,800	$667,400	$870,400	$1,331,400	$3,433,400
TOTAL	$184,400	$379,800	$667,400	$870,400	$1,331,400	$3,433,400

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	10	22	37	47	72	38
NEW ENROLLMENT HEADCOUNT	10	12	15	20	25	16
						3-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	5	10	12	9

Attachment 2

Summary of Background Information

Bachelor of Science in Sustainable Biomaterials and Packaging
Auburn University

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Program Description/Objective: According to Auburn University officials, the proposed undergraduate program in Sustainable Biomaterials and Packaging will satisfy several interests. First, incoming freshman will have a 21st century program that not only works to solve environmental problems, but also pays a healthy salary in the process. Second, employers from an emerging biomaterial-based industry are having tremendous problems finding students with the right skill sets. The Forest Products Development Center (FPDC) on the Auburn University campus fields questions all the time as to why there are no students available for the industry.

The packaging industry is an emerging field that desires more sustainable solutions to a petroleum concentrated market. Currently, many of the plastics that are used as packaging products end up in landfills or oceans and takes centuries to degrade. There is thus an increased interest by the younger generation to find sustainable solutions to problems inherited by global climate change and excessive dependence on fossil fuels.

The proposed curriculum will be supported by faculty from the College of Agriculture and College of Engineering. The curriculum will be STEM oriented, and the first of its kind in the United States because it will utilize supporting faculty across five (5) schools/colleges.

Administration: The program will be administered by the School of Forestry & Wildlife Sciences, Dr. Janaki Alavalapati, Dean.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the university Chief Academic Officers. There were no objections to either.

Accreditation: The program will fall under the Society of Wood Science and Technology, which is an oversight group that has accredited other University degree programs. In addition, many of the courses taught within the SFWS as part of this new degree program fall under either the Society of American Foresters or the Wildlife Federation, which are part of an accreditation body currently in use within the SFWS.

Curriculum: Program Completion Requirements:

Credit hours required in major courses	37
Credit hours required in minor	0
Credit hours in institutional general education or core curriculum	42
Credit hours required in support courses	38
Credit hours in required or free electives	3
Credit hours for thesis or dissertation	0
Total credit hours required for completion	**120**

Collaboration: The School of Forestry and Wildlife Sciences (SFWS) will accept credit for equivalent courses taken at other institutions and teaching faculty will interact across departments, especially the College of Business and the College of Science and Math; however, the University is not planning any formal collaborations with other institutions at this time.

Distance Education: According to the proposal, approximately 5 percent of the program will be offered through distance education modalities. The degree will be traditional lecture and laboratory

courses. However, some of the AU required core courses might fall under the "flipped classroom" pedagogy of instruction that focuses on experiential and inquiry-based learning.

Admissions: The program will have no special admission requirements.

Need: Currently the southeastern United States does not have a University that supplies undergraduate students to the biomaterials and sustainable packaging industry. Likewise, enrollment in 20th century Wood Science programs has recently declined throughout the United States. In order to reverse these trends, several programs across the US have reinvented themselves to attract students. For example, in the last 5 years Virginia Tech changed their name from the Department of Forest Products to the Department of Sustainable Biomaterial, with dramatic enrollment results.

Alabama agriculture and forestry related industries account for 580,295 jobs and generate $70.4 billion for the economy. Finding an output for agricultural waste and crops and small diameter and underutilized trees will help to further stimulate the economy while relieving some of the impact of petroleum based products. There is currently strong support from alumni and industry to hire graduates and interns from this new degree program. These stakeholders also communicated which classes would enhance student success upon graduation, and have been involved in the courses developed within the proposed curriculum.

Student Demand: According to AU officials, the projected enrollment numbers for the proposed program were gathered from a few areas. First, there is currently strong support from alumni and industry to hire graduates and interns from the proposed program, if approved. Simply, put they cannot locate qualified employees, as the "forest product" market is not attractive to today's current students; thus, the rebranding of the degree program and the most compelling reason for student enrollment. In 2014, the Forest Products Department at Virginia Tech rebranded and retooled their degree program. At the time, enrollment had been stagnate for 8 years at 20-30 students per year. Within 4 years, their enrollment increased from 20 to 130 students. Similarly, at NC State, enrollment was at 120 for 10 years, after rebranding/retooling and reformulating their forest product degree program to Sustainable Biomaterials and Packing, their enrollment increased to 300 within 6 years.

The school of Forestry and Wildlife Sciences is aligned geographically to the industry and the college-bound students who are 1) not interested in "Forest Products", but are looking to become involved in Sustainability of the biomaterial industry, and 2) perhaps capture some of those students that may be attending VT, NC State or Purdue, over Auburn University. According to program officials, it is expected within 6 years to have an average of 20-25 students enrolled in this new degree program.

Faculty/Staff:

Current Primary Faculty—
Full-time: 2
Part-time: 0
Current Support Faculty—
Full-time: 0
Part-time: 0

Additional faculty to be hired:
Primary Faculty—
Full-time: 0
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Equipment: No new equipment will be needed for the program.

Facilities: No new facilities will be needed for the program.

Library: According to the proposal, AU has sufficient library resources for the proposed program.

Program Budget: No new funds will be required for the program over the first five years. A total of $3,433,400 through tuition will be available over that period

Attachment 3

Auburn University
Bachelor of Science in Sustainable Biomaterials and Packaging

Freshman Year	32
ENGL 1 100 & 1 120 English Composition I & II	6
BIOL Principals of Biology & Lab 1020/1021 & 1030/1031	8
Math 1 130 Pre-Calculus Trig or Higher	3
CORE History (or Literature Sequence)	3
INDD 1 120 Industrial Design in Modern Society	3
CORE History or Social Science	3
CORE History	3
STAT 2510 Statistics Biological and Health Sciences	3
Sophomore Year	32
CHEM 1030/1031 & CHEM 1040/1041	8
BIOP 2120 Frontiers of Sustainable Materials	3
ECON 2020 Principals of Microeconomics	3
CORE Literature (or History sequence)	3
COMM 1000 Public Speaking	3
MKTG Principals of Marketing	3
CORE Humanities	3
CORE Arts	3
SUST 2000 Introduction to Sustainability	3
Junior Year	28
BIOP 3390 Intro Forest Products and Packaging	3
BIOP 3391 Forest and Manufacturing Processes	1
BIOP 4050 Biomass Processing Chemistry	3
BIOP 4060 Economics of Bioproducts and Packaging	3
BIOP 4070 Performance & Durability of Products and Packaging	3
BIOP 4080 Business Management for Products	3

BIOP 4360 Sustainable Biomaterials Trade and Marketing	3	
SCMN 3150 Management of Business Process	2	
MATL 2220 or MATL 2230	1	
Senior Year	28	
BIOP 4840 Sustainability & Life Cycle Assessment	3	
BIOP 5250 Wood Composites for Biomaterials and Packaging	3	
BSEN 4400 Agricultural Production & Facility Techniques	3	
BIOP 4400/4410 Biomaterials Product Development I & II	2	
ENVD 4010 Elements of Design, Thinking and Communication	3	
BIOP 4800 Biopolymers for Biomaterials and Packaging	3	
SCMN 5720 Quality and Process Improvement	3	
BSEN 4240 Fundamentals Bulk Sold Behavior & Processes	3	
FORY 4820 Forestry in the Private Sector	1	
Free Elective	3	

Total **120**

DECISION ITEM AU-2: Auburn University, Bachelor of Science in Neuroscience (CIP 26.1501)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description/Objective: The proposed Bachelor of Science in Neuroscience will connect diverse courses and faculty to create a new degree that examines all aspects of the structure and function of brains, and prepares students for further study in professional schools and graduate programs and for careers in health-related sciences. The proposed program would address a growing interest in the field of neuroscience and would offer students additional undergraduate research opportunities often necessary for admission into graduate and professional programs. Additionally, by emphasizing the psychological, social, and biological foundations of behavior, the proposed Neuroscience program would prepare students to perform well on the Medical College Admission Test, and to succeed in medical school. Involving more than 50 faculty members across 17 academic units, the proposed curriculum includes coursework from the College of Liberal Arts, the College of Education, and the College of Sciences and Mathematics.

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Mode of Delivery: According to the proposal, instructional delivery methods will be traditional lecture and laboratory courses.

Similar Programs: The University of Alabama at Birmingham has the only other program in Neuroscience at CIP 26.1501 in the Academic Program Inventory.

Collaboration: According to AU officials, at this time there are no immediate plans for collaboration with other universities. However, the institution plans to work with the Alabama Advanced Imaging Consortium (AAIC) to enhance student experiences with opportunities to shadow neuroscientists and receive specialized training at other universities within the AAIC.

Resources: The proposal stated that the program will require $0 in new funds over the first five years. A total of $2,687,160 through tuition will be available over that period.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The United States Department of Labor occupational outlook for medical scientists, such as neuroscientists, expects a 12.9 percent increase in jobs from 2016 to 2026. A need for neuroscientists will continue because they help develop treatments and medicine for mental health.

2. Currently, there are only seven (7) public universities in the southeastern United States that offer neuroscience as a major compared to 74 public universities in the entire US (9.5 percent). Census data indicate that the southeastern United States comprises over 17 percent of the US population, demonstrating a need for more public universities that offer neuroscience as a major in the southeast United States.

3. The proposed neuroscience program would prepare students to perform well on the Medical College Admission Test (MCAT). The new MCAT places emphasis on Psychological, Social, and Biological Foundations of Behavior. Graduates of the program will be in a strong position for careers in health-related sciences.

DECISION ITEM AU-2: Auburn University, Bachelor of Science in Neuroscience (CIP 26.1501)

Staff Presenter: Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Bachelor of Science in Neuroscience.

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 20, based on the proposal.

2. That the annual average number of graduates for the period 2021-22 through 2022-23 (two-year average) will be at least 18, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in entering graduate school.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Auburn University program proposal, received December 7, 2017 Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

ATTACHEMENT 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University

PROGRAM: Bachelor of Science in Neuroscience (CIP 26.1501)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$164,520	$329,040	$548,400	$822,600	$822,600	$2,687,160
TOTAL	$164,520	$329,040	$548,400	$822,600	$822,600	$2,687,160

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	15	30	50	75	75	49
NEW ENROLLMENT HEADCOUNT	15	15	20	25	25	20
						2-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	0	15	20	18

Attachment 2

Summary of Background Information

Bachelor of Science in in Neuroscience
Auburn University

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Objectives: The proposed Bachelor of Science in Neuroscience will connect diverse courses and faculty to create a new degree that examines all aspects of the structure and function of brains, and prepares students for further study in professional schools and graduate programs and for careers in health-related sciences. The proposed program would address a growing interest in the field of neuroscience and would offer students additional undergraduate research opportunities, which are often necessary for admission into graduate and professional programs. Additionally, by emphasizing the psychological, social, and biological foundations of behavior, the proposed neuroscience program would prepare students to perform well on the Medical College Admission Test and to succeed in medical school. Involving more than 50 faculty members across 17 academic units, the proposed curriculum includes coursework from the College of Liberal Arts, the College of Education, and the College of Sciences and Mathematics.

Student learning outcomes for the program state that upon completion of the program, graduates should:

1. Demonstrate knowledge of molecular, cellular, and tissue-level organization of the central and peripheral nervous system.

2. Demonstrate knowledge of cellular communication.

3. Demonstrate knowledge of the neurophysiology, neuroanatomy, and neurochemistry underlying brain function and development.

4. Demonstrate an understanding of the principles by which behavior and cognition are studied and organized.

5. Demonstrate the ability to understand interactions among brain neurobiology, cognitive function, and neurobehavioral disorders.

6. Demonstrate the ability to orally present and write hypotheses and research plans to test hypotheses that are neuroscience based.

Administration: The program will be administered by the College of Liberal Arts, Dr. Joseph Aistrup, Dean; and the Department of Psychology, Dr. Ana Franco-Watkins, Chair.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the university Chief Academic Officers. There were no objections to either.

Accreditation: There is no accreditation agency for the proposed program.

Curriculum: Program Completion Requirements:

Credit hours required in major courses	34
Credit hours in general education core:	52 semester hours (sh)
Credit hours required in support courses:	33 sh
Credit hours required in free electives:	1 sh
Total:	120 sh

Collaboration: According to AU officials, at this time there are no immediate plans for collaboration with other universities. However, the institution plans to work with the Alabama Advanced Imaging Consortium (AAIC) to enhance student experiences with opportunities to shadow neuroscientists and receive specialized training at other universities within the AAIC.

Distance Education: According to the proposal, courses for the proposed program are approved for in-class instruction. Instructional delivery methods will be traditional lecture and laboratory courses.

Admissions: The proposed program has no special admission requirements.

Need: Neuroscience is a rapidly growing area and one that represents some of the most exciting scientific discoveries, but its representation in Alabama has much room to develop. In Alabama, only UAB has an undergraduate neuroscience major. A neuroscience degree at Auburn University will help prepare students for medical school, especially given the new Medical College Admission Test (MCAT) emphasis on Psychological, Social, and Biological Foundations of Behavior. Importantly, many disorders pertinent to Alabamians have a neuroscientific connection: closed head injuries, neurodegenerative disorders, developmental and intellectual disabilities, autism, and other diseases of development like schizophrenia. Substance abuse is understood primarily through behavioral neuroscience. Graduates with a neuroscience degree will be able to contribute to spurring Alabama's economic growth via obtaining jobs, where there is currently a work force shortage of jobs, which require higher-level abilities in science, technology, and mathematics.

Employment opportunities for graduates of the program include diverse careers in health-related sciences, such as Audiology, Clinical Psychology, Dentistry, Food Science, Law (e.g., neuroethics), Medicine (MD, DO), Neuropsychology, Optometry, Pharmacy, Physical Therapy, research and teaching, and Veterinary Science. Graduates of this program will be in an excellent position to further develop their skills in graduate programs.

Student Demand: Student demand was in part based on a Psychology major student survey conducted in Spring 2017 to determine whether students would be interested in pursuing a B.S. degree in Neuroscience. The survey (n = 74) indicated 33.8 percent were extremely interested, 12.2 percent very interested, and 24.3 percent moderately interested. Furthermore, AU has many undergraduate students outside of the Psychology major that enroll in neuroscience classes. They often express interest in the neurosciences, but need a major that would prepare them better for employment opportunities and graduate/professional programs.

Faculty/Staff:

Current Primary Faculty—
Full-time: 6
Part-time: 0
Current Support Faculty—
Full-time: 58
Part-time: 0
Additional faculty to be hired:
Primary Faculty—
Full-time: 0
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Equipment: No new equipment is needed for the program.

Facilities: No new facilities will be required for the program.

Library: The AU library has current digital and physical collections of journals in Neuroscience, Psychology, and Biology to support the needs of the proposed program.

Program Budget: The proposal stated that the program will require $0 in new funds over the first five years. A total of $2,687,160 through tuition will be available over that period.

Attachment 3

Curriculum
Bachelor of Science in Neuroscience

Freshman Year Fall	
ENGL 1100 English Composition I	3
MATH 1610 Calculus I	4
CHEM 1030 Fundamental Chemistry I[1]	3
CHEM 1031 Fundamental Chemistry I Lab	1
BIOL 1020/1021 Principles of Biology + Lab	4
Freshman Year Spring	
PSYC 2010 Introduction to Psychology	3
ENGL 1120 English Composition II	3
CHEM 1040 Fundamental Chemistry II[1]	3
CHEM 1041 Fundamental Chemistry II Lab	1
BIOL 1030/1031 Principles of Biology + Lab	4
LBAR 2010 Liberal Arts Careers Preparation	2
Sophomore Year Fall	
PSYC 2130 Analytics for Soc & Beh Sci	4
PSYC 3530 Sensation & Perception	3
CHEM 2070 Organic Chemistry I	3
CHEM 2071 Organic Chemistry I Lab	1
CORE HISTORY I[2]	3
PHYS 1500 General Physics I	4
Sophomore Year Spring	
PSYC 3510 Behavioral Neuroscience	3
CORE HISTORY II[2]	3
CHEM 2080 Organic Chemistry II	3
CHEM 2081 Organic Chemistry II Lab	1
PHYS 1510 General Physics II	4
PHIL 1030 Ethics and the Health Sciences	3

PSYC 3520 Psychology of Learning	3
BIOL 3000 Genetics	4
CORE LITERATURE[2]	3
CORE SOCIAL SCIENCE[2]	3
Junior Year Spring	
PSYC 3540 Cognitive Psychology	3
PSYC 3620 Cognitive Neuroscience	3
COMM 1000 Public Speaking	3
CORE SOCIAL SCIENCE[2]	3
Senior Year Fall	
PSYC 5620 Drugs, Brain and Behavior	3
CORE FOREIGN LANGUAGE[2]	4
BIOL 4100 Cell Biology	3
BIOL 4100 Cell Biology Laboratory	2
Major Electives	3
Senior Year Spring	
CORE FOREIGN LANGUAGE[2]	4
CORE FINE ARTS[2]	3
Major Electives	6
Free Elective	1

Total Hours 120

DECISION ITEM AU-3: Auburn University, Bachelor of Arts in Law and Justice (CIP 22.0000)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description/Objective: The proposed Bachelor of Arts (BA) in Law and Justice is designed to prepare students to excel primarily in law school, but also in graduate school or careers in which critical thinking, analytical reasoning, strong writing, and verbal communication skills are required. This interdisciplinary BA features courses from the departments of Political Science and Philosophy, along with communication courses from the School of Communication and Journalism, that focus on logical thinking, critical analysis, reasoning, oral communication, legal research and writing, case law, and creating and refuting arguments.

This proposed major is related to the University's mission and goals, especially strategic plan Priority 1: Enhance Student Success and Diversify Enrollment. This degree will help fulfill Auburn University's strategic commitment to "strengthen professional and career preparedness" through "better preparing interested students for graduate and professional study" and to "establish interdisciplinary degrees between various departments that focus on "gaps" in existing degree options".

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Mode of Delivery: According to the proposal, no distance education plans exist at this time for the major courses, although students may choose to complete some courses in the university core curriculum via distance education.

Similar Programs: There are no similar programs at this level.

Collaboration: According to AU officials, the program is the first of its kind in the state, and no collaboration is currently planned.

Resources: The proposal stated that the program will require $0 in new funds over the first five years. A total of $2,687,160 through tuition will be available over that period.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The Law and Justice degree will utilize the strengths of three different departments at AU (Political Science, Philosophy, and Communications) to create a superior plan of study focused on readiness for law school and other post-graduate study.

2. The Law and Justice degree will combine coursework in legal studies and logical reasoning, a required internship, and opportunities to participate in moot court and mock trial activities, along with advising by a dedicated pre-law coordinator to improve student success.

3. According AU officials, the Law and Justice program will be among the first in the United States with this focus, and the first program of its kind in Alabama.

DECISION ITEM AU-3: Auburn University, Bachelor of Arts in Law and Justice (CIP 22.0000)

Staff Presenter: Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Bachelor of Arts in Law and Justice.

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 20, based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 15, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in entering graduate school.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Auburn University program proposal, received December 7, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

ALABAMA COMMISSION ON HIGHER EDUCATION
Friday, March 9, 2018

ATTACHMENT 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University

PROGRAM: Bachelor of Arts in Law and Justice (CIP 22.0000)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$164,520	$329,040	$548,400	$822,600	$822,600	$2,687,160
TOTAL	$164,520	$329,040	$548,400	$822,600	$822,600	$2,687,160

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	15	30	50	75	75	49
NEW ENROLLMENT HEADCOUNT	15	15	20	25	25	20
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	10	15	15	20	15

Attachment 2

Summary of Background Information

Bachelor of Arts in Law and Justice
Auburn University

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Program Description/Objectives: The proposed Bachelor of Arts (BA) in Law and Justice is designed to prepare students to excel primarily in law school, but also in graduate school or careers in which critical thinking, analytical reasoning, strong writing, and verbal communication skills are required. This interdisciplinary BA features courses from the departments of Political Science and Philosophy, along with communication courses from the School of Communication and Journalism, that focus on logical thinking, critical analysis, reasoning, oral communication, legal research and writing, case law, and creating and refuting arguments.

This proposed major is related to the University's mission and goals, especially strategic plan Priority 1: Enhance Student Success and Diversify Enrollment. This degree will help fulfill Auburn University's strategic commitment to "strengthen professional and career preparedness" through "better preparing interested students for graduate and professional study" and to "establish interdisciplinary degrees between various departments that focus on "gaps" in existing degree options."

Student learning outcomes for the program are as follows. Graduating students from this program will be able to:

- Demonstrate familiarity with legal databases.
- Accurately and effectively conduct legal research.
- Critically analyze legal information.
- Understand and interpret complex legal writing.
- Craft, assess, and/or refute legal arguments both orally and in writing.

Administration: The program will be administered by the College of Liberal Arts, Dr. Joseph Aistrup, Dean; and the Department of Political Science, Dr. Cynthia Bowling, Chair.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the university Chief Academic Officers. There were no objections to either.

Accreditation: There is no specialized accrediting organization for the proposed program.

Curriculum: Program Completion Requirements:

Credit hours in general education core:	41 semester hours (sh)
Credit hours required in the major courses	18-21 sh
Support courses	28 sh
Free electives:	33 sh
Total:	120-123 sh

Collaboration: According to AU officials, the program is the first of its kind in the state, and no collaboration is currently planned.

Distance Education: The application states that this degree, in total, will not be a distance program. However, some individual required classes are offered through both online and traditional methods. When available, some classes in the curriculum will be accepted as either online or traditional classes. Approximate distant education would be equal to 10 percent.

Admissions: The proposed program has no special admission requirements.

Need: According to AU's proposal, over 37,000 students nationwide enrolled in juris doctorate degree programs in American Bar Association accredited law schools in Fall 2016 (374 in Alabama law schools). In Fall 2014, the University of Arizona became the first major university in the country to offer an undergraduate degree in law; the program grew to include over 300 majors in only two years. Auburn University will be among the first schools to provide this undergraduate major to students, and the only university in Alabama to do so. Although a law concentration in the Political Science major and a non-degree pre-law certificate program already exist at AU, the Law and Justice major will better prepare students for the rigors of law school by using an interdisciplinary approach combining Political Science, Communication, and Philosophy; requiring a legal internship; and integrating pre-professional advising throughout the program. Likewise, graduates who do not decide to enroll in law school will also be well prepared with strong research, analysis, and communication skills that will prepare them for success in other graduate programs and a range of management, consulting, and business occupations. The National Association of Colleges and Employers 2018 Job Outlook identifies "Critical Thinking / Problem Solving" and "Oral/Written Communications" as key skills employers want in employees yet seem in too short of supply; they rated recent graduates as only demonstrating proficiency 56 percent and 42 percent of the time respectively on these attributes. Graduates of this program will be highly proficient at both. (NACE, Job Outlook, Nov. 2017).

Student Demand: The initial influx of students to the Law and Justice major will come from the students pursuing the informal concentration in law within the Political Science degree program who choose to change majors or double major. Our primary gauge for student demand is drawn from student self-identification with the existing non-degree pre-law scholars programing and listserv communication network. Students sign up for the list through the College of Liberal Arts website; the communications network is directed by the Pre-Law Advisor. Currently, almost 300 students subscribe to the list, indicating their interest in pre-law advising, activities, and courses. These students have many different majors, but all indicate at least an interest in pursuing law school after finishing their undergraduate degrees. For students who do not want a Political Science degree, but are interested in attending law school, the Law and Justice major offers a more distinct degree option and excellent preparation for post-graduate study. Interactions with prospective students interested in a career in law indicate the major will be attractive to incoming students as well.

Faculty/Staff:

Current Primary Faculty—
Full-time: 11
Part-time: 0
Current Support Faculty—
Full-time: 30
Part-time: 5
Additional faculty to be hired:
Primary Faculty—
Full-time: 0
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Equipment: No new equipment is needed for the program.

Facilities: No new facilities will be required for the program.

Library: Currently the library provides in print or electronic access to law reviews, political science, and philosophy related journals sufficient to conduct legal research as attested to by relevant faculty. Legal databases, such as Westlaw and LexisNexis, are available for use. Further, the AU library is a government repository with access to regulations and other government documents. Finally, inter-library loan can provide access to other holdings through arrangements with a wide group of other institutions.

Program Budget: The proposal stated that the program will require $0 in new funds over the first five years. A total of $2,687,160 through tuition will be available over that period.

Attachment 3
Curriculum
Bachelor of Arts in Law and Justice

University Core Curriculum Courses	
PHIL 1010 Introduction to Logic or PHIL 1020 Introduction to Ethics	3
POLI 1090 American Government in a Multicultural World	3
ENGL 1100 and ENGL 1120 Composition I & II	6
COMM 1000	3
CORE History	6
CORE Science	8
CORE Math	3
CORE Literature	3
CORE Social Science	3
CORE Fine Arts	3
College of Liberal Arts Core Courses	
World Languages	8
I-BAR 2010: Careers in the Liberal Arts	2
Major Courses	
PHIL 3110: Symbolic Logic	3
PHIL 3640: Philosophy of Law	3
POLI 3360: Federal Jurisdiction	3
POLI 3380: Evidence and Legal Reasoning	3
POLI 4920: Internship (3-6)	3-6
POLI 5570: Legal Profession	3
Choose 2 Courses from Group I PHIL 3100: Intermediate Ethics PHIL 3500: Epistemology PHIL 3600: Political Philosophy OR POLI 3020: Intro to Political Theory PHIL 3660: Applied Ethics PHIL 4110: Advanced Logic	6

Choose 2 Courses from Group 2 POLI 4010: Constitutional Law: Separation of Powers POLI 4020: Constitutional Law: First Amendment POLI 4030: Constitutional Law: Civil Rights	6
POLI 4040: Constitutional Law: Criminal Law	
Choose 2 Courses from Group 3 COMM 3100: Speaking Before Audiences COMM 3110: Persuasion COMM 3300: communication & Conflict COMM 3600: Rhetorical Theory COMM 3700: Argumentation COMM 4700: Legal Communication PHIL 3550: Philosophy of Language POLI 3340: Intro to Conflict Resolution POLI 5340: Theory & Practice. of Mediation POLI 5570: Advanced Mediation	6
Recommended Electives: Choose 5 Courses. HADM 3700: Health Law POLI 3300: Law and Society POLI 3320: Judicial Process POLI 3350: Controversies in Constitutional Law POLI 3370: Federal Indian Law POLI 4340: Contemporary Political Theory POLI 5170: Election Law POLI 5180: Administrative Law POLI 5570: Mock Trial ACCT 2700: Business Law AGE-C 4070: Agricultural Law ANTH 4300: Anthropology of Law AVMG 5090: Aviation Law and Policy BSCI 4850: Construction Law CIVI- 5480: Legal Aspects of Civil Engineering CMJN 4000: Mass Media Law & Regulations ECON 3100: Law and Economics ENGL 4150: Language and the Law FORY 5540/5543: Environmental Law FORY 5550/5553: Property Law PHIL 3620 Contemporary Political Philosophy SOCY 5200: Sociology of Law	15
Free Electives	15-18
Total Hours	**120-123**

DECISION ITEM AU-4: Auburn University, Bachelor of Computer Engineering in Computer Engineering (CIP 14.0901)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description: Computer Engineering is recognized as a major branch/category of engineering that emphasizes modern computer systems, computer-controlled equipment, and networks of intelligent devices. It is thus comprised of both hardware and software. The primary goal of the proposed program at Auburn University is to prepare students to become technically proficient in the practice of computer engineering.

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Mode of Delivery: This degree will be traditional lecture and laboratory courses on the AU campus. However, some of the required courses may fall under the "flipped classroom" pedagogy of instruction that focuses on experimental and inquiry-based learning.

Similar Programs: University of South Alabama (Bachelor of Science in Computer Engineering), the University of Alabama in Huntsville (Bachelor of Science in Computer Engineering in Computer Engineering), and Auburn University (Bachelor of Software Engineering in Software Engineering) at CIP Code 14.0901 in the Academic Program Inventory.

Collaboration: According to AU officials, credit will be accepted for equivalent courses at other institutions, but there are no plans for formal collaborations with other institutions at this time.

Resources: The proposal stated that the program will require $6,821,365 in estimated new funds over the first five years. A total of $10,964,976 through tuition will be available over that period.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The program's primary faculty from Electrical and Computer Engineering and from Computer Science and Software Engineering are experts in the various facets of computer engineering. Two of the primary faculty are Institute of Electrical and Electronic Engineering (IEEE) Fellows, and two have national and international experience in the design and accreditation of computer engineering programs.

2. The proposed program is the elevation of a current Computer Engineering option within AU's Bachelor of Electrical Engineering program. Enrollment in the computer engineering option has been steady over the past 5 years, fluctuating around 140 students enrolled per year and averaging 24 graduates a year. Elevating the option to program status will see those enrollment numbers increase to 160-175 students over the next 5 years.

DECISION ITEM AU-4: Auburn University, Bachelor of Computer Engineering in Computer Engineering (CIP 14.0901)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Bachelor of Computer Engineering in Computer Engineering.

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 30 based on the proposal.

2. That the annual average number of graduates for the period 2018-19 through 2022-23 (five-year average) will be at least 27, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in entering graduate school.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Auburn University program proposal, received October 6, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

ATTACHEMENT 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University

PROGRAM: Bachelor of Computer Engineering in Computer Engineering (CIP 14.0901)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$958,865	$958,865	$958,865	$958,865	$958,865	$4,794,325
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$294,391	$294,391	$294,391	$294,391	$294,391	$1,471,955
EQUIPMENT	$22,083	$22,083	$22,083	$22,083	$22,083	$110,415
STAFF	$75,068	$75,068	$75,068	$75,068	$75,068	$375,340
ASSISTANTSHIPS	$13,866	$13,866	$13,866	$13,866	$13,866	$69,330
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$1,364,273	$1,364,273	$1,364,273	$1,364,273	$1,364,273	$6,821,365

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$2,019,864	$2,116,048	$2,212,232	$2,308,416	$2,308,416	$10,964,976
TOTAL	$2,019,864	$2,116,048	$2,212,232	$2,308,416	$2,308,416	$10,964,976

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	105	110	115	120	120	114
NEW ENROLLMENT HEADCOUNT	30	30	30	30	30	30
						5-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	25	25	25	30	30	27

Attachment 2

Summary of Background Information

Bachelor of Computer Engineering in Computer Engineering
Auburn University

Role: The program is within the instructional role recognized by the Commission for Auburn University (AU).

Program Description: Computer engineering is recognized as a major branch/category of engineering that emphasizes modern computer systems, computer-controlled equipment, and networks of intelligent devices. It is thus comprised of both hardware and software. The primary goal of the proposed program at Auburn University is to prepare students to become technically proficient in the practice of computer engineering. Additional goals are to develop students' abilities to communicate, work in teams, learn on their own, and conduct themselves in a professional and ethical manner. Achievement of these goals represents attainment of the "...knowledge, skills, and values so essential to educated and responsible citizens" (from the university mission statement). It should be noted that the relationship of the program to the Auburn University Mission Statement and Strategic Plan is the same as with the existing electrical engineering degree with the computer engineering option.

According to the proposal, student learning outcomes associated with the program will be assessed by showing that graduates of the program will be able to:

1. Demonstrate technical proficiency in the practice of computer engineering.
2. Communicate effectively to a variety of audiences, both technical and nontechnical.
3. Contribute to the success of their various enterprises through effective work in teams comprised of individuals from multiple engineering, technical, and non-technical backgrounds.
4. Expand their knowledge and skills through lifelong scientific inquiry and learning.

Administration: The program will be administered by the Samuel Ginn College of Engineering, Christopher Roberts, Dean; and the Department of Electrical and Computer Engineering, R. Mark Nelms, Chair.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the university Chief Academic Officers. There were no objections to either.

Accreditation: The Accreditation Board for Engineering and Technology (ABET) will accredit the proposed Computer Engineering program.

Curriculum: No new courses will be added to the program.

Program Completion Requirements:	
Credit hours required in major courses	55
Credit hours required in minor	0
Credit hours in institutional general education or core curriculum	36
Credit hours required in support courses	23
Credit hours in required or free electives	8
Total credit hours required for completion	122

Collaboration: According to AU officials, credit will be accepted for equivalent courses at other institutions, but there are no plans for formal collaborations with other institutions at this time.

Distance Education: This degree will be traditional lecture and laboratory courses on the AU campus. However, some of the required courses may fall under the "flipped classroom" pedagogy of instruction that focuses on experimental and inquiry-based learning.

Admissions: The program has no special admission requirements.

Need: The proposed program will be an elevation of a current Computer Engineering option within the Bachelor of Electrical Engineering program. Computer Engineering has evolved into a discipline in its own right, as opposed to a sub discipline of Electrical Engineering. The proposed degree would increase the profile of the Computer Engineering program to both students and employers, and would help AU graduates acquire jobs classified as requiring "computer engineers". Presently, most electrical and computer engineering departments offer separate degrees in electrical engineering and computer engineering. As the state continues to emphasize high tech, the need for computer engineers will continue to grow.

Student Demand: Enrollment in the Computer Engineering option has been steady over the past 5 years, fluctuating around 140 students enrolled per year and averaging 24 graduates a year. It is estimated that 120 students in the existing option would switch to the new degree program. With the change to a dedicated degree program, it is anticipated that an increase in enrollment to 160-175 students will occur over the next 5 years. In subsequent years, 30 additional students would enter the new program (an increase from 25 to 30 because of the new program name), and that all students remain in the program and graduate in 4 years.

Faculty/Staff:
Current Primary Faculty—
Full-time: 12
Part-time: 6
Current Support Faculty—
Full-time: 0
Part-time: 0

Additional faculty to be hired:
Primary Faculty—
Full-time: 0
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Equipment: No additional equipment will be needed for the program.

Facilities: No new facilities will be required.

Library: The libraries at AU have sufficient Engineering journal subscriptions, and over 227 electronic databases related to topics in Computer Engineering.

Program Budget: The proposal stated that the program will require $6,821,365 in estimated new funds over the first five years. A total of $10,964,976 through tuition will be available over that period.

Attachment 3

Curriculum
Bachelor of Computer Engineering in Computer Engineering

Freshman Year	
MATH 1610 & 1620 Calculus I & II	8
PHYS 1600 & 1610 Engineering Physics I & II	8
ENGR 1110 Introduction to Engineering	2
ENGL 1100 & 1120 English Composition I & II	6
ENGR 1100 Engineering Orientation	0
COMP 1210 Fundamentals of Computing I	3
Core Fine Arts	3
Sophomore Year	
COMP 2210 Fundamentals of Computing II	4
MATH 2630 Calculus III	4
MATH 2650 Linear Differential Equations	3
ELEC 2200 Digital Logic Circuits	3
COMP 2710 Software Construction	3
MATH 2660 Topics in Linear Algebra	3
ELEC 2110 Electric Circuit Analysis	4
ELEC 2220 Computer Systems	3
CHEM 1030/1031 Fundamentals of Chemistry I and Lab	4
Junior Year	
COMP 3240 Discrete Structures	3
COMP 3500 Introduction to Operating Systems	3
ELEC 2120 Linear Signals & Systems Analysis	3
ELEC 2210 Digital Electronics`	4
CORE HISTORY	3
COMP 3270 Introduction to Algorithms	3
ELEC 3700 Analog Electronics	3
ELEC 3800 Random Signals & Systems	3
ELEC 4200 Digital System Design	3

ELEC 3050 Embedded System Design Lab	1
CORE HISTORY or CORE SOCIAL SCIENCE	3
Senior Year	
ELEC 5200 Computer Architecture & Design	3
ELEC 5220 Information Networks & Technology	3
INSY 3600 Engineering Economy	3
CORE LITERATURE	3
CORE SOCIAL SCIENCE	3
ELEC 4000 Senior Design Projects	3
ECE Elective	5
PHIL 1020 Intro to Ethics or PHIL 1040 Business Ethics	3
FREE ELECTIVE	3
Total	**122**

DECISION ITEM AU-5: Auburn University, Master of Engineering in General Engineering (CIP 14.0101)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The purpose of the proposed program is to provide an individualized plan of study for practicing engineers to more effectively perform their job and advance their careers. One of the areas of focus for land-grant institutions is engineering. In addition, the proposed target of meeting the needs of practicing engineering is well aligned with the Auburn University Mission Statement, which states that "the University will provide traditional and non-traditional students broad access to the institution's educational resources," since the program will expand access to the non-traditional working students.

This is also articulated in Goal #3 under priority number one of the Auburn University Strategic Plan, “the University will redefine its role in the development of e-learning programs (including distance education), meeting the needs of current and new Auburn students in ways that are consistent with the university's academic standards." Moreover, one of the target groups identified is working professionals.

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University (AU).

Mode of Delivery: Courses will be offered through the Graduate Outreach Program at Auburn University, which produces videos of on-campus lectures and makes them available to students through Panapto and the CANVAS learning management system. Approximately 100 percent of the total program's courses will be provided via distance technology.

Similar Programs: The following institutions offer similar programs at this level: The University of Alabama at Birmingham (UAB) offers a master of engineering degree. The University of Alabama in Huntsville (UAH) also offers a master of engineering degree. In both instances, students pursuing this degree must select from a set of predetermined specialization areas.

The proposed program is similar to the master of engineering programs at UAB and UAH, but allows students to develop individual specializations, which may potentially be similar to those offered at UAB and UAH -- but could also be different according to the student's particular needs and curriculum interests.

Collaboration: AU has no objections to collaborating with other institutions, if opportunities, such as sharing courses to take advantage of complementary expertise become available, but has no specific plans in place at this time.

Resources: The proposal projected that $0 in new funds will be required for the program over the first five years, and that $2,402,955 will be available over the same period through tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The proposed program will provide working professionals the opportunity to obtain the specific knowledge and skills needed to advance their career.

2. The degree provides an opportunity for working engineers to obtain a technical advanced degree that has the balance of breadth and depth appropriate to meet their needs.

3. Courses will be offered online so students can pursue the degree while working full-time.

4. The degree will provide a platform in which courses designed for working professionals, rather than researchers, can be applied to an advanced degree.

DECISION ITEM AU-5: Auburn University, Master of Engineering in General Engineering (CIP 14.0101)

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed, Master of Engineering (MOE) in General Engineering and the post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020 or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, will be at least 13, based on the proposal.

2. That the annual average number of graduates for the period 2021-22 and 2022-23 (two-year average) will be at least 7, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or entering a doctoral program.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Auburn University program proposal, received October 26, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University

PROGRAM: Master of Engineering (MOE) in General Engineering (CIP 14.0101)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$113,880	$263,063	$439,434	$659,152	$927,426	$2,402,955
TOTAL	$113,880	$263,063	$439,434	$659,152	$927,426	$2,402,955

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT*	8	18	30	40	50	29
NEW ENROLLMENT HEADCOUNT	8	10	12	15	18	13
						2-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	0	5	8	7

*All students are projected to be part-time.

Attachment 2

Summary of Background Information
Master of Engineering in General Engineering
Auburn University

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University.

Description and Objectives: The program is designed for students to establish objectives relative to their specific needs. The first two outcomes listed below are the general student learning outcomes. Outcomes 3-6 are some specific examples corresponding to example plans of study. (Four example plans of study situations are shown in Attachment 3.)

1. Demonstrate improved proficiency in selected skills.

2. Demonstrate new skills that lead to enhanced capabilities and expanded job opportunities.

3. Demonstrate improved proficiency in the quality control of a manufacturing process.

4. Demonstrate improved proficiency in the mechanical design of microelectronic devices.

5. Demonstrate an understanding of supply chain management and lean production.

6. Demonstrate an understanding of approaches and strategies for securing critical information.

Assessment: Students will be required to identify the specific student learning outcomes associated with their particular educational needs. The students will develop a plan of study which will describe the courses that support each of these student learning outcomes. At the end of each term, the students will be asked to rate and describe the extent to which the course(s) supported the associated learning outcome(s) as expected.

At the completion of the degree, each student will be asked to rate and describe the extent to which the overall degree program supported the objectives articulated in the original plan of study. In addition, the student will be asked to describe how the degree contributed to advancements in their career and expansion or enhancement of their capabilities.

The results from these inputs will be evaluated to improve the program. For example, if a course does not support a particular outcome as expected, this feedback will be provided to the instructor to consider in possibly revising the course. If it turns out that the course is not as well-aligned with that particular outcome as originally thought, then other students with interest in that particular outcome would be advised to select alternative courses.

A follow-up plan to determine accomplishments of graduates such as obtaining relevant employment or being admitted to a masters or doctoral program (graduate or professional). Annual surveys will be conducted to gather data on employment and career advancement for graduates of the program. The surveys will be coordinated by the Associate Dean for Graduate Studies.

Administration: The program will be administered by the Samuel Ginn School of Engineering, Dean Dr. Christopher Roberts; Chairperson Department of Engineering Administration, Dr. Jeffrey Fergus (Associate Dean for Graduate Studies).

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). Three members of the ACGD participated in the final vote. All three members voted to approve the proposal.

Accreditation: Engineering programs can be accredited by Accreditation Board for Engineering and Technology (ABET). Although accreditation of master's programs by the Engineering Accreditation Commission of ABET is possible, like the vast majority of engineering programs, Auburn University only pursues ABET accreditation for its undergraduate engineering programs.

Curriculum: Program completion requirements are as follows:

Credit hours required in major courses	21
Credit hours required in minor	N/A
Credit hours required in support courses	N/A
Credit hours in required or free electives	9
Credit hours for thesis or dissertation	0
Total credit hours required for completion	**30**

This degree requires a coordinated program of 30 credit hours of graduate level coursework. In coordination with an engineering faculty advisory committee, each student in the program will design a plan of study to meet his or her specific needs and interests. The plan must identify multiple outcomes, each of which should be supported by multiple courses in the plan of study. The plan must contain at least 21 hours of 6000-level and above engineering courses. There is no thesis requirement, and research and thesis credits cannot be used to meet the requirements of this degree.

Collaboration: AU has no objections to collaborating with other institutions, if opportunities, such as sharing courses to take advantage of complementary expertise become available, but has no specific plans in place at this time.

Distance Education: Courses will be offered through the Graduate Outreach Program at Auburn University, which produces videos of on-campus lectures and makes them available to students through Panapto and the CANVAS learning management system. Approximately 100 percent of the total program's courses will be provided via distance technology. Courses will be available on-line, and since the target students are practicing engineers, most students are expected to obtain the degree through distance education. However, the degree will also be available to on-campus students.

Admissions: This program has no special admission requirements.

Need: The Bureau of Labor Statistics (https://www.bls.gov/home.htm) indicates that there are approximately 31,000 engineers in the state of Alabama, which corresponds to a percentage of the total labor force (1.6 percent) that is larger than that in the 16 SREB states (1.1 percent) or the entire U.S. (1.3 percent). This is largely due to the high concentration engineering activity in the Huntsville area, which is #3 in the nation for the highest location quotient for Architecture and Engineering Occupations. The only two areas that are higher than Huntsville are areas near Los Alamos National Laboratory and the Naval Air Station, Patuxent River, both of which have relatively small local populations. Thus, there are a large number of practicing engineers, many of whom may need new knowledge and skills to advance in their careers and continue to develop professionally. The proposed degree is targeted to supporting these needs.

Career and College Readiness/Preparation -- Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	10	10	10	10	10	50
State	930	935	940	945	950	4,700
SREB	16,000	16,100	16,200	16,300	16,400	81,000
Nation	54,200	54,400	54,600	54,800	55,000	273,000

The table directly above is an estimate of the number of engineering openings based on data from the Bureau of Labor Statistics (https://www.bls.gov/home.htm). The project tool was used to estimate that the number of engineering jobs is expected to increase from 1.167 million to 1.744 million from 2014 to 2024 which corresponds to an annual increase of 0.44 percent. During that time, there are projected to be 512,000 openings, which corresponds to the number of openings being about 3 percent of the number of employees. This growth rate and percentage of opening were applied to the number of engineers in the Auburn-Opelika area, the State of Alabama, the 16 SREB states, and the nation to determine the number of openings shown in the table Career and College Readiness/Preparation -- Projected Job Openings.

Student Demand: The proposal states that AU has surveyed degrees offered at institutions throughout the U.S. and learned that general engineering master's degrees have substantive enrollments, which demonstrates the need for this type of degree. AU plans to engage industry to determine specific courses or combinations of courses that would meet the needs of their employees, so that these courses can be offered within the framework of this degree.

Resources:

Faculty:

Current Primary Faculty—
Full-time: 71
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Additional Faculty to Be Hired:

Primary Faculty—
Full-time: 0
Part-time: 0

Support Faculty—
Full-time: 0
Part-time: 0

Support Staff: No additional support staff will be required.

Fellowships and Assistantships: No fellowships or assistantships will be offered.

Equipment: No special equipment will be needed to support the proposed program.

Facilities: No additional facilities are needed.

Library: The combined collections of the Auburn University Libraries contain over 3.2 million volumes as well as 2.6 million government documents, 2.5 million microforms, and over 148,000 maps. The Libraries receive over 35,000 current periodicals, many of which are available online. The library also provides access to over 227 electronic databases and has over 10 million archival and manuscript items.

Program Budget: The proposal projected that $0 in new funds will be required over the program in the first five years, and that $2,402,955 will be available over the same period through tuition.

Attachment 3
Curriculum
Auburn University
Master of Engineering in General Engineering – Four Example Plans of Study

SITUATION 1	
Industrial engineer moving into a managing a materials processing plant	
OUTCOMES	
• Demonstrate proficiency in quality control of a manufacturing process	
• Develop an understanding of the structure-property-processing relationships in materials	
COURSES	**Cr. Hrs.**
INSY 6600/6606 MANUFACTURING AND PRODUCTION ECONOMICS	3
INSY 6800/6806 LEAN PRODUCTION	3
INSY 6840/6846 CONTROL OF THE MANUFACTURING FLOOR AND PROCESSES	3
INSY 6330/6336 DATA BASED DECISION MAKING USING SIX SIGMA	3
INSY 7380/7386 RELIABILITY ENGINEERING	3
MECH 6970/6976 INTERMEDIATE SPECIAL TOPICS IN MECHANICAL ENGINEERING - ADDITIVE MANUFACTURING OF METALS	3
MATL 6100/6106 THERMODYNAMICS OF MATERIALS SYSTEMS	3
MATL 6300/6306 PHASE TRANSFORMATIONS IN MATERIAL PROCESSING	3
MATL 6500/6506 NUMERICAL SIMULATION OF MATERIALS PROCESSING	3
SCMN 7600/7606 SUPPLY MNGT AND MANUFACTURING	3
	30

SITUATION 2	
Mechanical engineer moving into designing small devices	
OUTCOMES	
• Demonstrate proficiency in the mechanical design of microelectronic devices	
• Develop an understanding of transduction mechanisms for sensors	
COURSES	**Cr. Hrs.**
MECH 6210/6216 ELECTRONICS THERMAL MANAGEMENT	3
MECH 6310/6316 MECHANICS OF ELECTRONIC PACKAGING	3
MECH 7240/7246 NUMERICAL METHODS IN HEAT TRANSFER	3
MECH 6430/6436 BASICS OF SENSOR APPLICATIONS	3
ELEC 6760/6766 SOLID STATE SENSORS	3
ELEC 6820/6826 MEMS TECHNOLOGY	3
MATL 7410/7416 CHEMICAL SENSORS	3
MATL 7610/7616 ENGINEERING ASPECTS OF BIOLOGICAL AND CHEMICAL DETECTION	3
INSY 6850/6856 ELECTRONICS MANUFACTURING SYSTEMS	3
INSY 7380/7386 RELIABILITY ENGINEERING	3
	30

SITUATION 3	
Chemical engineer who is moving into management of a biofuels processing plant	
OUTCOMES	
• Demonstrate proficiency in the processing of biofuels	
• Develop an understanding of supply chain management and lean production	
COURSES	**Cr. Hrs.**
CHEN 6800/6806 BIOCHEMICAL ENGINEERING	3
CHEN 6670/6676 POLLUTION PREVENTION ENGINEERING	3
CHEN 6820/6826 ADVANCED TOPICS IN ENVIRONMENTAL BIOTECHNOLOGY	3
CHEN 6430/6436 BUSINESS ASPECTS OF CHEMICAL ENGINEERING	3
BSEN 6260 RENEWABLE ENERGY IN BIOSYSTEMS PROCESS OPERATIONS	3
BSEN 6540 BIOMASS AND BIOFUELS ENGINEERING	3
INSY 6600/6606 MANUFACTURING AND PRODUCTION ECONOMICS	3
INSY 6800/6806 LEAN PRODUCTION	3
SCMN 7600/7606 SUPPLY MNGT AND MANUFACTURING	3
SCMN 7800/7806 SUPPLY CHAIN STRATEGY	3
	30

SITUATION 4	
Increased responsibility for web presence and information security	
OUTCOMES	
• Demonstrate proficiency in the development of web interfaces	
• Develop an understanding of approaches and strategies for securing critical information	
COURSES	**Cr. Hrs.**
COMP 6000/6006 WEB APPLICATION DEVELOPMENT	3
COMP 6010/6016 INTERACTIVE APPLICATIONS IN VISUAL BASIC	3
COMP 6020/6026 ADVANCED WEB APPLICATION DEVELOPMENT	3
ELEC 6110/6116 WIRELESS NETWORKS	3
ELEC 6150/6156 INFORMATION SECURITY	3
ELEC 6410/6416 DIGITAL SIGNAL PROCESSING	3
INSY 7100/7106 ADAPTIVE OPTIMIZATION	3
ISMN 6280/6286 INFORMATION SYSTEMS ARCHITECTURE IN THE SMALL LAND MEDIUM-SIZE ENTERPRISE	3
ISMN 6380/6386 SOCIAL MEDIA AS A TOOL FOR BUSINESS STRATEGY	3
ISMN 6670/6676 SECURITY AND INFORMATION ASSURANCE	3
	30

DECISION ITEM AU-6: Auburn University, Master of Science in Cybersecurity Engineering in Cybersecurity Engineering (CIP 11.1003)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The purpose of the proposed program is to equip students with the advanced education required to analyze, develop, investigate, protect, and defend computer information systems. The degree focuses on the engineering and technical aspects of cybersecurity.

This program is aligned with the University's land-grant mission of engineering. It relates to the University's priorities by addressing a career path that is in critical demand and will attract students from a variety of cultures; by attracting research and strong faculty; by attracting students capable of deep research and scholarship; and by engaging in projects of relevance beyond the academic sphere.

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University (AU).

Mode of Delivery: One-hundred percent of the total program's courses offered that will be provided by distance education. The degree can be completed entirely through distance education, on campus, or a combination of the two.

Similar Programs: Programs with the same CIP Code are: CIP 11.1003 Auburn University at Montgomery, MS in Cybersecurity and Information Security; CIP 11.1003 University of Alabama at Birmingham, MS in Computer Forensics and Security Management; and CIP 11.1003 University of Alabama in Huntsville, MS in Cybersecurity.

Other similar programs are: CIP 11.0101, Jacksonville State University, MS in Computer Science and Software Design Information Security and Assurance Concentration; CIP 11.0101, Troy University, MS in Computer Science -- Network and Security Concentration; and CIP 11.0101, University of South Alabama, MS in Computer and Information Sciences -- Cyber-Security and Information Assurance Focus area.

Collaboration: AU has no objections to collaborating with other institutions, if opportunities such as sharing courses to take advantage of complementary expertise become available, but AU has no specific plans in place at this time.

Resources: The proposal projected that $0 in new funds will be required for the program over the first five years, and that $1,608,860 will be available over the same period through tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. This program addresses a clear and present need: educate engineers to defend the nation's cyber infrastructure.

2. The program is designed for engineers whose career goals include working in industry and government.

3. Auburn University is well-positioned to offer a strong program because it is designated by the National Security Agency as a Center of Academic Excellence in Cyber Defense/Information Assurance Education and as a Center of Academic Excellence in Cyber Defense/Information Assurance Research.

4. The University is also one of only 19 universities in the nation designated by the National Security Agency as a Center of Academic Excellence in Cyber Operations.

5. The degree requires no additional courses or faculty, relying instead on refocusing existing courses to emphasize cybersecurity content.

DECISION ITEM AU-6: Auburn University, Master of Science in Cybersecurity Engineering in Cybersecurity Engineering (CIP 11.1003)

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed, Master of Science in Cybersecurity Engineering (MSCE) in Cybersecurity Engineering and the post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020 or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, will be at least 10, based on the proposal.

2. That the annual average number of graduates for the period 2019-20 and 2022-23 (four-year average) will be at least 8, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or entering a doctoral program.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Auburn University program proposal, received October 26, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University

PROGRAM: Master of Science in Cybersecurity Engineering (MSCE) in Cybersecurity Engineering (CIP 11.1003)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$166,680	$278,490	$333,360	$388,230	$442,100	$1,608,860
TOTAL	$166,680	$278,490	$333,360	$388,230	$442,100	$1,608,860

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	10	20	20	20	20	18
NEW ENROLLMENT HEADCOUNT	10	10	10	10	10	10
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	8	8	8	8	8

Attachment 2

Summary of Background Information
Master of Science in Cybersecurity Engineering in Cybersecurity Engineering
Auburn University

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University.

Description and Objectives: The most prominent student learning outcomes of the program are:

1. Demonstrate proficiency in computer science and software engineering beyond the baccalaureate level.

2. Demonstrate proficiency in identifying and assessing cybersecurity threats.

3. Demonstrate proficiency in developing suitably protective and resilient network and software mechanisms.

4. Demonstrate proficiency in defending against cyber-attacks.

5. Demonstrate proficiency in detecting, triaging, and mitigating cybersecurity breaches.

6. Acquire skills relevant to the workforce.

Assessment: Achievement of overall objectives is determined by successful completion of coursework. Students will be required to state the specific cybersecurity learning outcomes required to meet their particular educational/career needs. Students will use this to develop a plan of study that identifies the electives and capstone project that supports the outcomes. The students will work with an advisor to determine the extent to which the outcomes were achieved and to make changes as necessary.

At the completion of the degree, each student will be asked to rate and describe the extent to which the overall degree program supported the objectives articulated in the original plan of study. In addition, the student will be asked to describe how the degree contributed to advancements in their career and expansion or enhancement of their capabilities.
The results from these inputs will be evaluated to improve the program. For example, if a course does not support a particular outcome as expected, this feedback will be provided to the instructor to consider in possibly revising the course. If it turns out that the course is not as well-aligned with that particular outcome as originally thought, then other students with interest in that particular outcome would be advised to select alternative courses.

As follow-up, annual surveys will be conducted to gather data on employment and career advancement for graduates of the program. The surveys will be carried out under the direction of the Department of Computer Science and Software Engineering Graduate Program Officer.

Administration: The program will be administered by the Samuel Ginn School of Engineering, Dean, Dr. Christopher Roberts; Chairperson Department of Computer Science and Software Engineering, Dr. Hari Narayanan.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). Two members of the ACGD participated in the final vote. Both members voted to approve the proposal.

Accreditation: Engineering programs can be accredited by ABET. Although accreditation of master's programs by the Engineering Accreditation Commission of ABET is possible, like the

vast majority of engineering programs, Auburn University only pursues ABET accreditation for its undergraduate engineering programs.

Curriculum: Program completion requirements are as follows:

Credit hours required in major courses	21
Credit hours required in minor	N/A
Credit hours required in support courses	0
Credit hours in required or free electives	12
Credit hours for thesis or dissertation	0
Total credit hours required for completion	**33**

A project demonstrating mastery of cybersecurity engineering is required for the degree. The project includes both software and a written report. A proposal supporting the project must be approved by the student's advisor before work on the project may start. The format for the proposal and the project report are determined by the student's advisor. The project report must be given to the department's graduate program office upon completion for filing as a technical report.

Collaboration: AU has no objections to collaborating with other institutions, if opportunities such as sharing courses to take advantage of complementary expertise become available, but AU has no specific plans in place at this time.

Distance Education: One-hundred percent of the total program's courses offered will be offered by distance education. The degree can be completed entirely through distance education, on campus, or a combination of the two.

Admissions: Applicants should have a baccalaureate degree in computer science, software engineering, or an equivalent technically-deep software-oriented degree from an institution of recognized standing. Degrees or significant work experience in information technology, electrical engineering, or other related disciplines may also be suitable. Applications will be evaluated on an individual basis by the department's graduate admission committee.

Need: Nation: Bureau of Labor Statistics estimates that job openings due to growth and replacements for "Computer and Mathematical Occupations" will increase by 1.157 million from 2014 to 2024 [https://www.bls.gov/emp/ep table 104.html, a growth rate of 29.15 percent per year. BLS data also indicates that 23.24 percent of those employed in these job categories in 2014 attained an advanced degree This approximates an increase in the need for advanced degreed openings by 268,000 per year from 2014 to 2024, a growth of 27,000 jobs per year.

AU believes this to be a very conservative estimate due to the way jobs are categorized for statistical purposes. AU only looked at The North American Industry Classification System (NAICS) categories that explicitly call for skills related to cybersecurity. The ubiquity of computers across industry suggests that cybersecurity positions are in demand but may be masked by being coded with an industry-specific NAICS category. This is very evident in the Federal Government, which is only now in the beginning stages of developing a unique job identifier for cybersecurity jobs. Cybersecurity jobs currently appear as a variety of descriptors: engineer, security specialist, information assurance, etc.

SREB and State: Government statistics are not extensive and are inconsistent regarding the number of cybersecurity-related openings available within the SREB area. All the major job search engines -- Monster, LinkedIn CareerBuilder, Indeed, Gov.jobs, ZipRecruiter permit searching for jobs that have the key word "cybersecurity." Of these, ZipRecruiter provides the most readily accessible count of the number of open positions in each state. The ZipRecruiter statistics show 35,670 open jobs matching the "cybersecurity" keyword in the nation, 9,255 of

which are in the SREB states, and 267 in Alabama. AU used these values to estimate that 25.95 percent of national cybersecurity openings are in the SREB area and .75 percent are in Alabama.

Local: Local openings in Year 1 were obtained by averaging the number of jobs advertised on each of the job search engines noted above. Years 2 through 5 reflect the national growth rate.

Career and College Readiness/Preparation -- Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	5	6	8	11	14	44
State	432	558	720	930	1,201	3,841
SREB	14,966	19,328	24,962	32,239	41,636	133,131
Nation	57,679	74,493	96,208	124,252	160,472	513,103

Student Demand: Government and industry designate the cybersecurity workforce as being in critically short supply. Training programs are being used as a stop-gap measure, but these programs are designed to convey specific skills rather than underlying fundamental principles. Government and industry are turning to higher education to provide a knowledgeable, as well as skilled workforce. Reference: EducationDive. Higher Ed Stepping in to Fill Cybersecurity Gaps. Accessed June 2, 2017. http://www.educationdive.com/news/higher-ed-stepping-in-to-fill-cybersecuritygaps/443370/

Cybersecurity skills of critical need have been documented by the National Institute of Standards and Technology (NIST). For more information, see NIST. Special Publication 800-818, The National Initiative for Cybersecurity Education NICE Workforce Framework. August 2017. https://d0i.org/10.6028/NIST.SP.800-181

Resources:

Faculty:

Current Primary Faculty—
Full-time: 21
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Additional Faculty to Be Hired:

Primary Faculty—
Full-time: 0
Part-time: 0

Support Faculty—
Full-time: 0
Part-time: 0

Support Staff: No additional support staff will be required.

Fellowships and Assistantships: No fellowships or assistantships will be offered.

Equipment: No special equipment will be needed to support the proposed program.

Facilities: No additional facilities are needed.

Library: The combined collections of the Auburn University Libraries contain over 3.2 million volumes as well as 2.6 million government documents, 2.5 million microforms, and over 148,000 maps. The Libraries receive over 35,000 current periodicals, many of which are available online. The library also provides access to over 227 electronic databases and has over 10 million archival and manuscript items.

Program Budget: The proposal projected that $0 in new funds will be required over the program in the first five years, and that $1,608,860 will be available over the same period through tuition.

Attachment 3
Curriculum
Auburn University
Master of Science in Cybersecurity Engineering in Cybersecurity Engineering

Course Number and Title	Credit Hours	* If New Course
Foundational Courses 1. COMP7270/7276 Advanced Algorithms 2. COMP7300/7306 Advanced Computer Architecture 3. COMP7500/7506 Advanced Operating Systems	9	
Required Cybersecurity-Specific Courses 1. COMP6350/6356 Digital Forensics 2. COMP6370/6376 Computer and Network Security 3. COMP7370/7376 Advanced Computer and Network Security	9	
Elective Cybersecurity-Specific Courses (any three of the courses below) • MATH6180 Cryptography • COMP6520/6526 Network and Operating System Administration • COMP6700/6706 Software Process • COMP6720/6726 Real Time and Embedded Systems • COMP7700/7706 Software Architecture • COMP7710/7716 Software Environments • COMP7720/7726 Software Re-Engineering	9	
Elective Courses • 6000/7000/8000-level coursework relevant to cybersecurity and approved by the major professor.	3	
Capstone experience • COMP7980/7976 Capstone Engineering Project	3	
Total	**33**	

DECISION ITEM AU-7: Auburn University, Doctor of Philosophy in Earth System Science (CIP 40.0699)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The proposed new graduate PhD degree program in Earth System Science (ESS) is based on the integration of scientific disciplines from five participating colleges and nine academic departments, as well as seven new cluster-hired tenure-track faculty at Auburn University. There are substantive consequences of food, water, and energy shortage due to change in climate and Earth's physical environments and ecosystems. Because of the complexity and multi-disciplinary nature of these problems, traditional single discipline training in the classical natural and social sciences is not well suited for addressing these issues.

The Earth System Science, by its very nature, involves the linkage of the physical, chemical, and biological, and social sciences to the understanding the interaction of Earth-system processes and humans. Thus, Earth system-based advanced training, which incorporates the elements of natural and social sciences, offers an effective way to train the next-generation professionals that our state and nation require. Students pursuing a PhD can choose among various areas of academic specialization (e.g., climate and Earth systems, forestry and wildlife sciences, geosciences and energy, water resources and hydrology, ecosystem and food security, coupled natural and human systems, big data science and engineering, etc.), providing for a curriculum of unusual richness and breadth.

Auburn reports that it has recently concluded the first phase of its Strategic Hiring Initiative with the decision to fund five key research cluster areas, including the Climate, Human and Earth System Sciences. The proposed new PhD program thus represents an important milestone in the university's efforts to implement its strategic plan and enhance Auburn University's mission as a Land Grant University.

Employers have quickly recognized that hiring next-generation professionals with an interdisciplinary scientific background are crucial to address the use, security, and management of natural (energy, water, food, and minerals) resources in Alabama and society as a whole.

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University (AU).

Mode of Delivery: Approximately 10 percent of the total program's courses will be offered via distance technology.

Similar Programs: A distinguishing feature of this new AU program is its interdisciplinary focus. Earth System Science is a highly interdisciplinary degree that draws from diverse fields of study and requires a strong background in many traditional, single discipline sciences, including geology, geography, biology/ecology, physics, chemistry, mathematics and modeling, forestry, agricultural sciences, computer sciences, and human sciences.

This new degree program is not duplicative of any existing single discipline programs. Rather, it offers a new option for students interested in conducting research across various disciplines to effectively address complex environmental and societal issues.

The following institutions in Alabama offer interdisciplinary programs (related science and engineering fields) at the PhD level:

1. UAB, PhD in Interdisciplinary Engineering.
2. University of Alabama, Tuscaloosa, PhD in Interdisciplinary Studies.
3. University of South Alabama, Interdisciplinary PhD Program in Basic Medical Sciences.
4. University of Alabama in Huntsville, Interdisciplinary PhD Program in Biotechnology Science and Engineering.
5. Auburn, PhD in Applied Economics.

Collaboration: AU plans to collaborate with the following institutions that offer similar Earth System Science programs at this level:
1. Natural Resources and Earth Systems Science PhD Program at the University of New Hampshire;
2. Earth Systems PhD Program at Stanford;
3. The Earth System Science PhD Program at UC Irvine;
4. Earth Systems and Geo-Information Sciences PhD Program at George Mason University; and
5. The Earth Sciences and Environmental Sustainability PhD Program at the University of Northern Arizona.

Resources: The proposal projected that $0 in new funds will be required for the program over the first five years, and that $1,417,325 will be available over the same period through internal reallocations, extramural funding, and tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. Provide students with a multidisciplinary background that will enable them to conduct state-of-the art research in Earth System and Environmental sciences, including academic disciplines from nine different departments among five different colleges/schools tailored to their career interests.

2. The program is well aligned with the university's strategic plan and research initiatives that recently resulted in the hiring of seven new faculty in Earth System Science (ESS) and provided start-up research resources.

3. The program will facilitate students in developing collaboration and communication skills while working with others who have different perspectives.

4. The program will facilitate students further becoming critical thinkers who analytically and creatively embrace new ideas to address the most challenging of societal problems.

5. Auburn is the only university in the SEC system that does not have a PhD program in the Geosciences, which Auburn asserts is contrary to its Land Grant Mission. The ESS PhD program will better position the Geoscience Department to generate higher-levels of scholarly research, attract truly outstanding faculty and students, and have greater success in competing for external funding.

DECISION ITEM AU-7: Auburn University, Doctor of Philosophy in Earth System Science (CIP 40.0699)

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed, Doctor of Philosophy in Earth System Science and the post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020 or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, will be at least 2, based on the proposal.

2. That the annual average number of graduates for the period 2021-22 and 2022-23 (two-year average) will be at least 3, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or entering a doctoral program.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Letter from Dr. Robert B. Jackson, Douglas Provostial Professor and Chair, Department of Earth System Science, Stanford University, attached.

5. Letter from Mr. Barry H. Tew, Jr., State Geologist and Oil and Gas Supervisor, Geological Survey of Alabama, attached.

6 Letter from Dr. Steve Frolking, Natural Resources and Earth Systems Science (NRESS) PhD Program, Research Professor, NRESS Faculty Chair, Earth Systems Research Center, Institute for the Study of Earth, Oceans, and Space, Department of Earth Sciences, University of New Hampshire, attached.

7. Auburn University program proposal, received October 26, 2017. Available upon request.

8. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University

PROGRAM: Doctor of Philosophy in Earth System Science (CIP 40.0699)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$101,000	$101,000	$101,000	$101,000	$121,211	$525,211
EXTRAMURAL	$0	$25,000	$50,000	$50,000	$75,000	$200,000
TUITION	$72,854	$91,068	$127,495	$182,135	$218,562	$692,114
TOTAL	$173,854	$217,068	$278,495	$333,135	$414,773	$1,417,325

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	4	5	7	10	12	8
NEW ENROLLMENT HEADCOUNT	4	1	2	3	2	2
						2-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	0	3	3	3

Attachment 2

Summary of Background Information
Doctor of Philosophy in Earth System Science
Auburn University

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University.

Description and Objectives: The program is designed to accomplish the following student learning outcomes:

1. To provide students with a multidisciplinary background in the sciences that will enable them to conduct state-of-the art research in Earth System and Environmental Sciences, but at the same time allow specialization in the student's main area of interest.

2. To give students the scientific background necessary to address the use, security, and management of energy, water, food, and mineral resources in Alabama, the southeast, the nation, and the globe. These natural resources are not infinite and good management practices must be founded on sound scientific understanding.

3. To provide field-, lab-, and computational-based instruction so students have the ability to conduct research in interconnected Earth, environmental, and human sciences and work towards being the future stewards of essential natural resources.

4. To provide the necessary training for students to gain skills and eligibility to be able to teach Earth and Environmental Science at the university and college levels.

5. To provide students with state-of-the-art training to be able to: collect, analyze, and interpret data in complex natural and human systems using computer assisted techniques, such as Geospatial Sciences (Geographic Information Systems, Remote Sensing), Hydrologic and Ecological Modeling, and Big Data Management and Synthesis.

6. To provide training in new interdisciplinary areas so students have the ability to develop competitive proposals in new interdisciplinary research programs sponsored by U.S. government funding agencies.

Assessment: The assessments are designed to determine whether students are achieving program learning outcomes.

1. The assessment of learning outcomes will include oral and written preliminary exams and course work and examinations that will be used to assess students' mastery of subject materials.
2. A final written and oral defense of the dissertation proposal, a committee review of the dissertation and an oral defense of the dissertation.
3. The student's committee will also assess: a. a required submitted proposal for external funding in support of the students' research; b. multiple research presentations by the student given at professional meetings; and c. preparation of at least three manuscripts for publication in peer-reviewed journal outlets.

All students are expected to make satisfactory progress by: 1. maintaining a GPA of 3.00 or better; 2. successfully participating in scholarly activities and making significant research contributions; and 3. fulfilling all program requirements. Overall program reviews will be conducted through the AU Graduate Council on a specified cycle or more frequently as appropriate.

As a follow-up plan, annual surveys will be conducted to gather data on employment and career advancement for all graduates. This will be accomplished by surveying department faculty who

will have the most current information regarding their former students. The survey information will be maintained by the departmental office in collaboration with the Graduate Program Officer.

Administration: The program will be administered by the College of Sciences and Mathematics (COSAM), Dean Dr. Nicholas Giordano; Chairperson Geosciences Department, Dr. Mark Steltenpohl.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). Two members of the ACGD participated in the final vote. Both members voted to approve the proposal.

Accreditation: There is no accrediting body for this degree program.

Curriculum: Program completion requirements are as follows:

Credit hours required in major courses	7
Credit hours required in minor	N/A
Credit hours required in support courses	N/A
Credit hours in required or free electives	43
Credit hours for thesis or dissertation	10
Total credit hours required for completion	**60**

Collaboration: UAB plans to collaborate with the following institutions that offer similar Earth System Science programs at this level:

1. Natural Resources and Earth Systems Science PhD Program at the University of New Hampshire;
2. Earth Systems PhD Program at Stanford;
3. The Earth System Science PhD Program at UC Irvine;
4. Earth Systems and Geo-Information Sciences PhD Program at George Mason University; and
5. The Earth Sciences and Environmental Sustainability PhD Program at the University of Northern Arizona.

UAB indicates that it will start with informal exchanges of ideas over the development of curricula and core academic strengths, followed by web-based meetings, lectures, and seminars that can spark conversations and lead to new approaches and collaborations. UAB's goal is to provide a long-term stream of proposal development and collaborative projects that can bolster academic strength.

Distance Education: Approximately 10 percent of the total program's courses will be offered via distance technology.

PhD students are expected to conduct collaborative research and complete course work on campus. Under certain circumstances, PhD students from industry and governmental organizations, who require a supervisor with similar research interest, will be allowed to pursue the PhD. Students may fulfill deficiencies in their undergraduate or graduate program or academic preparation by taking on-line or distance learning courses, with the approval from his or her home department.

Admissions: This program has no special admission requirements. The requirements are comparable to similar disciplines.

Need: Earth's systems play a fundamental role in shaping natural ecosystems and the human economies and cultures that depend on them. Our environment and climate is changing with disruptive impacts on sustainable supplies of food, energy, and water. Scientists project that these trends of rapid environmental changes will continue and in some cases accelerate, posing

significant risks to human health, forests, agriculture, clean freshwater supplies, coastlines, and other natural resources that are vital to Alabama state's economy, environment, and our quality of life.

Because so many systems are tied to the Earth system, a change in that system can affect many related aspects of where and how people, plants and animals live, such as food production, availability and use of water, and health risks. Our state and societies around the globe need to avoid worsening climate and environmental impacts and reduce the risk of creating changes beyond our ability to respond and adapt. The proposed new PhD program is designed to educate the next-generation of scientists to gain an understanding of Earth's system and socio-economic variables that affect sustainable food, energy, water, and mineral supplies. Students will be engaged in all aspects of research and mentored by strong cross-disciplinary advisors from different fields. This new PhD program will provide long-term sustainability of inter-disciplinary research and training beyond what any single-discipline program can offer. New faculty hires of Auburn's Coupled Human-Natural systems and Earth System Sciences (CHESS) initiative are fundamental to the establishment of this intercollegiate Ph.D. program.

Career and College Readiness/Preparation -- Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	2	2	2	2	2	10
State	5	5	5	5	5	25
SREB	80	80	80	80	80	400
Nation	250	250	250	250	250	1,250

According to the Bureau of Labor Statistics, there were a total of 296,963 geoscience jobs nationwide in 2012, and this number is expected to increase by 14 percent by 2022 to a total of 339,737 jobs (Status of Geoscience Workforce, AGI 2014). Moreover, approximately 143,000 geoscientists are expected to retire by 2022, but over the next decade, only 51,000 students will be graduating with their bachelor's, master's, or doctoral degrees in the geosciences. Therefore, assuming minimal non-retirement attrition from the geoscience workforce, there is expected to be a deficit of approximately 135,000 geoscientists by 2022. The total employment opportunities for related ESS fields (e.g., Environmental Sciences, Environmental Engineering, Forestry, Atmospheric Science, etc.) are also expected to increase in the next decade, since a relatively large percentage of the workforce is close to retirement (e.g., 40-65 percent at or within five years of typical retirement age range of 60-65 years). Regionally, Environmental Engineering and related jobs in the Gulf Coast Region are expected to grow by 28.6 percent (1,050 to 1,350) from 2012 to 2022 (http://www.wrksolutions.com/forindividuals/career-exploration/environmental-engineering).

Student Demand: According to the 2011 Status of the Geoscience Workforce reported by the American Geosciences Institute, during the 2009-2010 academic year, the number of graduate geoscience enrollments increased markedly to 9,054 jumping 15.7 percent from the 2008-2009 academic year. These increases in enrollments in all Earth System Science related fields are likely linked to continued high prices of commodities, robust employment opportunities in Earth and environmental fields, and improved recruitment of students.

The number of geoscience degrees conferred by U.S. institutions in the 2009-2010 academic year also increased markedly (Bachelor's degrees: 3,037, Master's degrees: 1,078, Doctorates:

668). The increases in degree production are likely tied to concurrent growth in undergraduate enrollments and the state of the economy that is encouraging graduate students to complete their studies at a higher rate rather than seek employment prior to receiving their graduate degree. Due to the excellent employment and research opportunities for ESS fields, we expect the degree will result in an enrollment of averaging 7 PhD students per year in the first 5 years. Student enrollment is expected to increase since most established ESS PhD programs in US universities (e.g., Stanford and University of New Hampshire) are the largest graduate programs in their colleges in terms of student enrollments.

Resources:

Faculty:

Current Primary Faculty—
Full-time: 25
Part-time: 0
Support Faculty—
Full-time: 20
Part-time: 0

Additional Faculty to Be Hired:

Primary Faculty—
Full-time: 0
Part-time: 0

Support Faculty—
Full-time: 0
Part-time: 0

Seven new faculty have been hired via the CHESS faculty cluster hiring initiative. These new faculty hires are in the areas of coupled natural human system, paleoclimatology, Earth system modeling, geospatial analysis, agroclimatology, big data sciences, and ecohydrology.

These faculty were recently hired via the CHESS cluster initiative and all are participating in the ESS PhD program. No other new faculty hires are required for the program.

Support Staff: No additional support staff will be required.

Fellowships and Assistantships: Seven assistantships will be offered annually over five years.

Note: In regard to Ph.D. assistantships, the Department of Geosciences (DG) currently has 20 permanently funded Graduate Assistant (GTA) lines per year ($20,202 annually). AU also routinely support three to four (3-4) graduate research assistants through external funding secured by our faculty. Since DG currently has no PhD program, these lines are supporting MS students. As Ph.D. students are admitted to the program some of these GTA lines will be converted to Ph.D. lines and, therefore, do not represent new costs for the program.

In addition to these currently budgeted GTA positions, COSAM is reallocating funds to support two (2) new GTA lines and the SFWS is supporting one (1) for this program, giving a total of five GTA positions; SFWS expects to support one (1) more additional line within the first five (5) years. AU anticipates being able to provide external funding (through grants) for at least five (5) Ph.D. GRAs within the first five (5) years of our program. Three part-time Ph.D. students, assuming AU can recruit self-funded PhD students (from the US or foreign government funds, or industry), are possible given the applied nature of this program.

Equipment: Listed below are existing major research instruments at Auburn University:

- Inductively Coupled Plasma Mass Spectrometer (ICP-MS)
- X-Ray Diffraction (XRD) and x-Ray Fluorescence (XRF);
- Noble Gas Mass Spectrometers;
- Light Detection and Ranging (LiDAR) Laser Scanner;
- Gas Chromatograph Mass Spectrometer (GC-MS);
- Scanning and Transmission Electron Microscopy (SEM/TEM);
- Ion Chromatograph (IC);
- High Precision Liquid Chromatograph (HPLC);
- Nuclear Magnetic Resonance Spectroscopy (NMR);
- Computational Facilities;
- Stable isotope (carbon, oxygen, and hydrogen) mass spectrometers;
- Thermal Ionization Mass Spectrometers (TIMS);
- Electron Microprobe Analyzer (EMPA).

New equipment, lab spaces and their renovation have been secured through the CHESS initiative with seven new cluster hires. Additional lab and classroom spaces will be also available in the new Interdisciplinary Science Building (to be completed in 2019).

Facilities: No additional facilities are needed.

Library: With funding from the Provost's office, the AU Library has purchased new resources specifically in support of the Cluster Hire Initiative, including the expanded Web of Science. In addition, AU Libraries' subject specialists (in Biology, Forestry, and Wildlife, and Geosciences) will provide the following support: regarding writing grant proposals for needed information resources;
conducting literature reviews and/or coordinating bibliographies; meeting with potential hires or graduate students to introduce them to library resources available at Auburn; and purchasing requested materials and resources.

Program Budget: The proposal projected that $0 in new funds will be required over the program in the first five years, and that $1,417,325 will be available over the same period through internal reallocations, extramural funding, and tuition.

Attachment 3
Curriculum
Auburn University
Doctor of Philosophy in Earth System Science (CIP 40.0699)

Course Number and Title: Required	**Number of Credit Hours**	* **If New Course**
ESSI 8000 Earth System Science and Global Change	3	*
ESSI 8100 Earth System Observation and Analysis	3	*
ESSI 8200 Earth System Science Seminar	1	*
ESSI 8990 PhD Dissertation	10	*
Course Number and Title: Recommended Elective	**Number of Credit Hours**	* **If New Course**
GEOL/ESSI 8900 Directed Studies	3	*
GEOL 6440 Electron Microprobe Analysis	3	*
GEOL 6600 Applied Geophysics	3	
GEOL 7170 Impact and Planetary Geology	3	*
GEOL 7200 Tectonics	3	
GEOL 7250 Groundwater Hydrogeologic Modeling	3	
GEOL 7260 Aqueous and Environmental Geochemistry	3	
GEOL 7280 Climate Change Literacy and Communication	3	*
GEOL 7300 Cycles through Earth History	3	
GEOL 7400 Advanced Economic Geology	3	
GEOL 7450 Mineral Resources and Environment	3	
GEOL 7500 Paleoclimatology	3	*
GEOL 7550 Advanced Geophysics	3	
GEOL 7600 Petrology	3	
GEOL 7610 Structure and Metamorphic Analysis	3	
GEOL 7650 Facies Analysis and Sequence Stratigraphy	3	
GEOL 7700 Analytical and Isotope Geochemistry	3	*
GEOG 6010 Urban Geography and Sustainability	3	
GEOG 6210 Climatology	3	
GEOG 6220 Geomorphology	3	
GEOG 6350 Quantitative Methods and Spatial Analysis	3	
GEOG 6600 Global Resources and the Environment	3	

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GEOG 6850 Geographic Information System Applications	3	
GEOG 6870 Advanced Remote Sensing	3	
STAT 7000 Experimental Statistics I	4	
STAT 7020 Regression Analysis	3	
STAT 7670 Applied Longitudinal Data Analysis	3	
STAT 7840 Applied Multivariate Statistical Analysis	3	
STAT 7860 Applied Time Series Analysis	3	
BIOL 6090 Conservation Biology	3	
BIOL 6150 Community Ecology	3	
BIOL 6510 Biogeography	3	
BIOL 7075 Introduction to Oceanography	3	*
BIOL 7370 Stream Ecology	4	
BIOL 7380 Ecology & Management of Riverine Systems	4	
BIOL 7705 Tropical Biology: Ecological Approach	8	
BIOL/STAT 7970 Quantitative Methods for Biological Data	4	
ANTH 6970 Political Ecology	3	
ECON 8540 Seminar in Environmental Economics	3	
RSOC 7630 Political Economy of Development	3	
CSES 6000 Soils and Environmental Quality	3	
CSES 6020 Nutrient Management	3	
CSES 6060 Soil Microbiology	3	
CSES 6061 Soil Microbiology Lab	1	
CSES 6080 Soil Resources and Conservation	4	
CSES 6300 Soil Chemistry	4	
CSES 6590 Environmental Soil Physics	4	
CSES 6150 Soil Morphology	4	
CSES 7080 Experimental Methods	3	

CESE/ENVI 7600 Agroclimatology	3	*
BSEN 6220 Geospatial Technologies in Biosystems	3	
BSEN 6250 Deterministic Modeling	3	
BSEN 6260 Renewable Energy in Biosystems Process Operations	3	
BSEN 6510 Ecological Engineering	3	
BSEN 6520 Watershed Modeling	3	
BSEN 6540 Biomass and Biofuels	3	
FISH 5725/6725 Marine Ichthyology	6	
FISH 6320/6321 Limnology/Limnology Lab	4	
FISH 7530 Fish Population Dynamics	3	
FISH 7340 Fish Ecology	3	
FISH 7540 Quantitative Techniques in Fishery Assessment	3	
FISH 7650 Traditional Approaches to Fish Genetic Enhancement	2	
FISH 7750 Biotechnological Approaches to Fish Genetics	2	
CIVL 6110 Open Channel Hydraulics	3	
CIVL 6120 Hydrologic Analysis & Modeling	3	
CIVL 7140 Ecohydrology	3	*
CIVL 6150 Groundwater Hydraulics	3	
CIVL 6210 Chemical Principle Of Enviro Engineering	3	
CIVL 6240 Air Pollution	3	
CIVL 6250 Biological Principal of Environmental Engineering	3	
CIVL 6970 Urban Hydraulic System Design	3	
CIVL 7170 Numeric Methods for Hydraulics and Hydrology	3	
CIVL 7210 Methods Of Pollution Analysis	3	
CIVL 7220 Wastewater Ops Proc I	3	

CIVL 7230 Wastewater Ops Proc II	3	
CIVL 7280/7286 Surface Water Quality Modeling	3	
CIVL 7970 Numerical Modeling of Free Surface Flows	3	
CIVL 7970 Environmental Fluid Dynamics	3	
CIVL/ESSI 7970 Social-Ecological Systems	3	*
COMP 6120 Database Systems I	3	
COMP 7120 Database Systems II	3	
FORY 6470 GIS Applications in Natural Resources	2	
FORY 6480 GIS Database Design And Analysis	2	
FORY 6250 Wetland Ecology and Management	3	
FORY 7110 Forest Biogeochemistry	3	
FORY 7160 Ecosystem Responses to Chemical Climate Change	3	
FORY 7210 Ecosystem Ecology	3	
FORY 7250 Advanced Ecosystem Modeling	3	
FORY 7550 Watershed Hydrology	3	
FOWS 6050 Urban Ecology	3	
FOWS 6220 Landscape Ecology	3	
FOWS 6320 Environmental Services	3	
FOWS 6880 Ecological Economics	3	
FOWS 7150 Spatial Statistics for Natural Resources	3	
WILD 7100 Applied Ecological Modeling	2	
WILD 7150 Advanced Analysis for Ecological Sciences	4	
GSEI/ESSI 6200 Land Processes and Climate Interactions	3	*
GSEI/ESSI 6500 Digital Earth and Big Data	3	*
GSEI/ESSI 6600 Climate Modeling	3	*

ERMA 7200 Basic Methods in Science Education	3	
ERMA 7210 Theory and Methodology of Qualitative Research	3	
ERMA 7300/7306 Design and Analysis in Education I	3	
ERMA 7310 Design and Analysis in Education II	3	
ERMA 8200/8206 Survey Research Methods	3	
CTSE 7510 Research Studies: Science	3	
CTSE 7540 Evaluation of Program: Science	3	

Year 1	Conduct preliminary literature review and research
Year 2	Prepare dissertation proposal
Year 3	Conduct research, present proposal, and take preliminary qualifying exam
Year 4-5	Complete dissertation and present and defend dissertation

Attachment 4

Letter from Dr. Robert B. Jackson, Douglas Provostial Professor and Chair, Department of Earth System Science, Stanford University

STANFORD UNIVERSITY

Dr. Timothy Boosinger, Provost
208 Samford Hall
Auburn University
Auburn, Alabama 36849

26 May 2017

Re: Proposal for Auburn Earth Systems Program

Dear Provost Boosinger and Auburn Board of Trustees,

I am writing in support of Auburn's proposed interdisciplinary Earth System Science Ph.D. program. With our focus on earth, environmental, and sustainability science, the Earth System Science Department at Stanford University is the newest department in Stanford's School of Earth, Energy, and Environmental Sciences. We are also now the largest department in the school. Our program has more than 20 regular faculty members across many disciplines, including geology, biology, hydrology, and ocean and atmospheric sciences. We share additional affiliated faculty members with other departments and institutions across campus.

In the last decade, Earth System Science has enjoyed rapid growth in many research institutions around the world, attributable to student demands and to societal needs in understanding the impact of human activities on the environment, natural resources, and people. This interdisciplinary earth system approach provides basic science and practical solutions for many regional and global issues integrating physical, biological, environmental, and socioeconomic factors.

Auburn University has a strong opportunity to leverage its expertise in such disciplines across the eastern United States and beyond. For example, there are critical consequences of food, water, and energy shortages attributable to change in Earth's physical environments and ecosystems. There are also complicated interactions in potential food-for-fuel tradeoffs that deserve the best science and thoughtful outreach and communication.

At Stanford, we are proud of our interdisciplinary Earth System Science graduate program and would be willing to assist Auburn for its launch by sharing experience in developing curricula and core academic strengths. Auburn's proposed program seeks to unite scientific disciplines from five participating colleges to understand and solve the challenges of sustainability, human interactions with the earth, and climate and environmental change. We believe it will benefit Auburn and the citizens of Alabama, the eastern United States, and beyond.

Sincerely,

Robert B. Jackson
Douglas Provostial Professor and Chair
Department of Earth System Science
Stanford University
Stanford, CA 94305
650-497-5841
rob.jackson@stanford.edu

Attachment 5

Letter from Mr. Barry H. Tew, Jr., State Geologist and Oil and Gas Supervisor, Geological Survey of Alabama

GEOLOGICAL SURVEY OF ALABAMA

Berry H. (Nick) Tew, Jr.
State Geologist

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.gsa.state.al.us

May 25, 2017

Dr. Timothy Boosinger, Provost
Auburn University
208 Samford Hall
Auburn, Alabama 36849

Dear Provost Boosinger and Board of Trustees:

I strongly support the proposed interdisciplinary PhD degree program in Earth System Science at Auburn University. This new interdisciplinary earth system-based program incorporates elements of both the natural and social sciences and will provide training for the next generation of professionals who will be addressing societal challenges related to science and our environment. The proposed program offers an option for doctoral students interested in conducting research across the boundaries of various disciplines to effectively address complex issues related to the environment and society.

Many employers have recognized the need for such interdisciplinary scientific expertise to address the use, security, and management of natural resources (energy, water, food, and minerals) in Alabama and, indeed, around the globe. As I understand it, this new program's curriculum and objectives are well aligned with Auburn University's primary mission as our State's premier Land Grant University. Auburn has recently concluded the first phase of its Strategic Cluster Hiring Initiative that resulted in the establishment of the Climate, Human, and Earth System Sciences (CHESS) research cluster, which is strongly linked to the proposed PhD program.

There are multiple convincing reasons for supporting such an interdisciplinary degree program serving students and the needs of the State of Alabama. The new degree program has strong support from as many as five colleges and schools, including the College of Sciences and Mathematics (COSAM), School of Forestry and Wildlife Sciences, College of Agriculture, College of Engineering, and College of Liberal Arts. As an interdisciplinary degree, it will draw from, and build upon, successful programs associated with various academic departments in these colleges and schools.

Building new interdisciplinary degree programs is a national trend and Auburn University should develop a strong, high quality interdisciplinary program to remain competitive in research funding within the federal arena. This new PhD program will help to expand and elevate Auburn's academic standing, contributing to its long-term institutional sustainability, as well as reaching its strategic goal to become a tier-one (R1) research institution. The interdisciplinary nature of the program is impressive, incorporating earth system sciences, geosciences, forestry and wildlife sciences, energy and mineral resources, climate sciences,

water resources and hydrology, ecosystem and food security, coupled natural and human systems, big data sciences, and environmental engineering, and more. Resources for faculty, staffing, students, needed space, and the research infrastructure are already available and serve to assure the success of the program. Participating faculty have very strong track records and will continue to raise funds from external sources to support all educational and research activities for this new program.

With this new Earth System Sciences interdisciplinary PhD program, Auburn University will be even better positioned to have profound impacts in the arenas of economic development, environmental stewardship, and human well-being for citizens of the State of Alabama. Auburn's primary Land Grant Mission charge is to prepare students who meet the demand for educated workers in industries and academics. I fully support the development of this needed program for Auburn University, the State of Alabama, and the region. Thank you for consideration of my input.

Sincerely,

Berry H. Tew, Jr.,
State Geologist and
Oil and Gas Supervisor

Attachment 6

Letter from Dr. Steve Frolking, Natural Resources and Earth Systems Science (NRESS) PhD Program, Research Professor, NRESS Faculty Chair, Earth Systems Research Center, Institute for the Study of Earth, Oceans, and Space, Department of Earth Sciences, University of New Hampshire

University of New Hampshire

Graduate School
Natural Resources and Earth Systems Science (NRESS) PhD Program
202 James Hall
56 College Road
Durham, NH 03824
V: 603.862.2227
F: 603.862.2649
TTY: 7.7.7 (Relay NH)
http://www.unh.edu/nressphd

Thursday, May 25, 2017

Dr. Mark G. Steltenpohl
Alumni Professor and Chair
Department of Geosciences
Auburn University
2050 Beard Eaves Coliseum
Auburn, AL 36849

Dear Prof. Steltenpohl,

It is my pleasure to provide this letter in support of your proposal for a new interdisciplinary PhD degree program in Earth System Sciences at Auburn University. My experience over the years as both faculty advisor to our PhD students and, more recently, as program chair of the University of New Hampshire's (UNH) Natural Resources and Earth Systems Science (NRESS) PhD Program has given me a unique perspective of the NRESS student population and of the program itself.

Many of the Grand Challenges facing modern society fall under the broad umbrellas of Earth System Science and Coupled Human and Natural Systems – for example, providing sufficient fresh water for food and energy production, as well as domestic use in a changing climate; meeting the natural resource requirements for energy production, while minimizing environmental impacts; increasing food production to meet the demands rising populations and growing wealth; rising sea-level and coastal infrastructure; protecting ecosystem services while providing for humanity's material needs. These problems cannot be adequately addressed by research in any one discipline. To simplify a vivid example that is emerging from the recent drought in the western US – water, an essential resource for life, flows downhill (the physical sciences) and 'up-money' (the socio-economic sciences and law). Successful management of water resources in the West (and the East) must consider a wide range of disciplines. Graduate interdisciplinary programs are needed to train the next generation of researchers and policy analysts who will be addressing these challenges.

The NRESS PhD Program is the largest PhD program at UNH. Currently, we serve 60 students in various stages of their doctoral work. Students from around the globe are accepted in the program, and conduct their research at a range of locations from the local to international. The 73 NRESS faculty (plus 11 affiliate faculty) represent five Colleges, 12 departments, eight research groups and two Schools. Since 2002, 123 students have graduated from the NRESS PhD program. We track the placement and success of NRESS alums, and are proud that 90% of our graduates are working in universities, laboratories, companies and NGOs around the world. One of our recent alums, Dr. Danielle Grogan '16, says it best: *"Interdisciplinary research was an important part of my graduate work, and it was one of the key reasons I chose to study at UNH. My advisors supported and encouraged my interest in branching out from the earth sciences to work with biologists, economists, and engineers. Of all the skills I gained during my PhD, I expect that the ability to reach across disciplines will be one of the most valuable as I move forward in my science career."*

The UNH NRESS PhD Program shares similar objectives as the Auburn proposal, in that we welcome students from diverse educational backgrounds, and through their interdisciplinary research, they seek

solutions to environmental problems at local, regional and global levels, requiring knowledge of the interaction among physical, biological, environmental, and socioeconomic factors. Ethical and societal considerations underlie both the identification of environmental problems and choice of action. Predicting and preparing for the future in this different world requires that we train a generation of scientists with a foundation in traditional disciplines *and an ability to understand the challenge of interfacing among them.* In addition to the infinite areas of research in life, physical and earth sciences, students often integrate studies in sociology, psychology, and philosophy (UNH College of Liberal Arts), environmental policy and ethics (UNH Carsey School of Public Policy), and economics and social entrepreneurship (UNH Paul College of Business and Economics).

The program curriculum is diverse, drawing on courses offered across the university. All NRESS PhD students admitted with a Master's degree are required to take a minimum of four core courses, one each in the areas of Natural Sciences, Ethics/Policy/Law, Methods, and an NRESS seminar (students without a Master's degree have a larger course requirement). This places the emphasis on the primary relationships among student, advisor and committee to determine the specific coursework plan, and encourages an emphasis on research. An additional point to note is the requirement for NRESS applicants to secure an NRESS faculty member as their potential advisor before their application can advance for consideration. Therefore, the program office is dependent on NRESS faculty to seek out and recruit students. The establishment of the student-advisor relationship upon admission is key to the success of the student's commitment success, as well as providing some security of funding resources through the advisor.

The UNH NRESS Program underwent an external review in 2015. Overall, this review concluded that the NRESS Program was successful, and an asset to the University: *'The NRESS program is highly successful in terms of national and international recognition, funding, and use of the available resources. In terms of faculty engagement, program delivery, and student success it could be described as an innovative model that could be emulated. ... There is strong support of the program at the upper administrative level, among the NRESS faculty members, and graduate students.'*

I am happy to talk with you in more detail about our program.

Sincerely,

Steve Frolking
NRESS Program Faculty Chair
Research Professor
Earth Systems Research Center, Institute for the Study of Earth, Oceans, and Space
Department of Earth Sciences

DECISION ITEM AUM1: Auburn University at Montgomery, Master of Science in Computer Science (CIP 11.0701)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The proposed program will give students specialized preparation in the broad area of Computer Science with four concentrations: a) General Computer Science, b) High Performance Computing, c) Data Analytics, and d) Computer and Cybersystems Security. The program will prepare graduate-level computer scientists for the growing computing industry of greater Montgomery, Alabama and beyond. It will also provide a pathway for the B.S. degree graduates to continue their education locally and not leave the area.

This new program aligns with AUM's mission of providing current, relevant and modern graduate academic programs to its constituents in the central Alabama region and neighboring counties. Also, the new program will promote and encourage research efforts as well as collaboration with local and regional industry and government.

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University at Montgomery (AUM).

Mode of Delivery: The instructional delivery method will be the traditional face-to-face delivery method. Full distance education is not currently under consideration.

Similar Programs: There are no other programs at the same degree level in Alabama that utilize the same CIP code used by this proposed program (11.0701). Several programs of some similarity are offered in other SREB states.

The following institutions offer similar programs, but at different CIP code, at this level in Alabama:

- Troy University, Master of Science in Computer Science (Troy, Montgomery), CIP 11.0101;
- University of Alabama, Master of Science in Computer Science, CIP 11.0101;
- Auburn University, Master of Science in Computer Science and Engineering, CIP 14.0901;
- Alabama A&M University, Master of Science in Computer Science, CIP 11.0101;
- Jacksonville State University, Master of Science in Computer Systems and Software Design, CIP 11.0101;
- University of Alabama at Birmingham, Master of Science in Computer and Information Sciences, CIP11.0101;
- University of Alabama in Huntsville, Master of Science in Computer and Information Sciences, CIP 11.0101;
- University of South Alabama, Master of Science in Computer and Information Sciences, CIP 11.0101.

Additionally, the proposed M.S. in Computer Science is different from other programs offered in M.S. in Computer Science Proposal in the state due to its options: High Performance Computing and Data Analytics, which are not similar to any other program. High Performance Computing and Data Analytics are unique options/concentrations for an M.S. in Computer Science program in the state of Alabama.

Collaboration: There is no collaboration plan at this time. However, in the future as the program evolves and teaching and research expertise is developed, AUM will consider collaboration.

Resources: The proposal projected that $698,000 in new funds will be required for the program over the first five years, and that $699,640 will be available over the same period through internal reallocations and tuition.

Public Review: The program was posted on the Commission website from January 10, 2018 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation: The proposed M.S. in Computer Science is different from other programs offered in the state due to its options: High Performance Computing and Data Analytics, which are not similar to any other program.

The main strengths of the proposed program are:

1. Strong theoretical Computer Science foundations with extensive practical applications.

2. It is a modern program, which considers in its curriculum the latest developments in computer technologies and mathematical theories.

3. Provides relevant concentrations for preparing students in areas of high demand, such as High Performance Computing, Data Analytics, and Cybersecurity.

DECISION ITEM AUM-1: Auburn University at Montgomery, Master of Science in Computer Science (CIP 11.0701)

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed, Master of Science in Computer Science and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020 or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, will be at least 7, based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 4, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or entering a doctoral program.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

Auburn University at Montgomery will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Letter from Montgomery Area Chamber of Commerce President, Randall L. George, attached.

5. Letter from ALFA Life Insurance Company, Vice President and Chief Actuary, Jerry F. Enoch, attached.

6. Letter of Sherlock, Smith & Adams, Architects and Engineers, Fellow Health Facilities Institute, Robert E. Snider, attached.

7. Auburn University at Montgomery program proposal, received November 17, 2017. Available upon request.

8. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: Auburn University at Montgomery

PROGRAM: Master of Science in Computer Science (CIP 11.0701)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$130,000	$130,000	$130,000	$130,000	$130,000	$650,000
LIBRARY	$5,000	$0	$0	$0	$0	$5,000
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$28,000	$0	$0	$0	$0	$28,000
ASSISTANTSHIPS	$3,000	$3,000	$3,000	$3,000	$3,000	$15,000
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$166,000	$133,000	$133,000	$133,000	$133,000	$698,000

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$139,072	$65,680	$52,216	$25,288	$0	$282,256
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$26,928	$67,320	$80,784	$107,712	$134,640	$417,384
TOTAL	$166,000	$133,000	$133,000	$133,000	$134,640	$699,640

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT*	4	10	12	16	20	12
NEW ENROLLMENT HEADCOUNT	4	6	6	8	9	7
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	3	3	4	6	4

*All students are projected to be full-time.

Attachment 2

Summary of Background Information
Master of Science in Computer Science
Auburn University at Montgomery

Role: The proposed program is within the instructional role recognized by the Commission for Auburn University at Montgomery.

Description and Objectives: The program's student learning outcomes are as follows:

- Students will be able to evaluate and apply advanced Computer Science concepts in the following core areas: Algorithms Design and Analysis, Systems, Software Engineering, and Database Systems.
- Students will be able to apply computing knowledge efficiently in order to solve practical problems.
- Students will master the theory, methods and best practices from their corresponding concentrations.
- Students will apply relevant algorithmic and mathematical concepts to the design and analysis of software.
- Students will demonstrate effective teamwork resulting in design and implement solutions to computational problems.

Assessment: The assessment process for the student learning outcomes is as follows:

At the university level the program will be required to participate in Academic Program Review every 5 years along with annual assessment reviews. The Academic Program Review functions to collect information in the following categories:

- Program mission and goals;
- Program admission and retention;
- Overall program assessment;
- Curricular offerings;
- Assessment of faculty;
- Assessment of facilities and equipment;
- Community engagement;
- Strategic Planning.

In particularly, the program will be reviewed in the following areas:

1) Student Performance-
The program will have an academic advisor, who will monitor student progress and performance, giving timely advising for corrections and improvements. There will be written admission policies for new and transfer students. Failure rates will monitored for each class through a data repository on AUM's Sharepoint.

2) Student Learning and Operational Outcomes-
Student learning and operational outcomes will be assessed on an annual basis using an exit comprehensive exam. This exam will be written and/or oral covering the learning outcomes proposed for the program. We will document the results and plan actions for improvement.

3) A follow-up plan-
The plan will examine the accomplishments of graduates, such as obtaining relevant employment or being admitted to a masters or doctoral program (graduate or professional). Additionally, the following actions will be performed for determining accomplishments of students graduating from this program:

a) Each student will be asked to complete a survey at the end of their last semester. This survey will collect student feedback for determining the strengths and areas in need of improvement of the program from the student perspective.

b) Students will be surveyed after 2 and 5 years post graduation. The survey will inquire both graduates and their employers to determine if the program is adequately preparing graduates to meet job demands.

Administration: The program will be administered by the Auburn University at Montgomery College of Arts and Science, Dean, Dr. Matthew Ragland; Mathematics and Computer Science, Chair, Dr. Yi Wang.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). One ACGD vote was received regarding the proposal. The institution voted to approve the proposal without concern.

Accreditation: There is currently no recognized accrediting body for programs of this type at this level.

Curriculum: The program completion requirements are as follows:

Credit hours required in major courses	N/A
Credit hours required in minor	N/A
Credit hours in institutional general education or core curriculum	18
Credit hours required in support courses	9
Credit hours in required or free electives	6 (if non-thesis, 0 if thesis)
Credit hours for thesis or dissertation	6 (6 if thesis, 0 if non-thesis)
Total credit hours required for completion	**33**

Collaboration: There is no collaboration plan at this time. However, in the future as the program evolves and teaching and research expertise is developed AUM will consider collaboration.

Distance Education: The instructional delivery method will be the traditional face-to-face delivery method. Full distance education is not currently under consideration. Some courses will be delivered online and/or in a hybrid mode (online and face-to-face). However, in the future AUM will explore the possibility of a high quality fully on line program. This, AUM states, will need some extra planning and analysis as well as resources and training. At least initially, approximately 0-10 percent of the total program's courses will be offered by distance education.

Admissions: Admission requirements include a B.S. degree in a related field (Mathematics, Computer Science, Engineering, Information Systems), GRE general test, and undergraduate transcripts (GPA). Minimum background includes the following undergraduate courses or equivalent: Programming proficiency, Algorithms, Operating Systems and Mathematics proficiency. However, if the minimum background needed to succeed in this program is not met, appropriate prerequisite courses will be recommended.

Need: In order to compete regionally and nationally and to benefit its communities, the state of Alabama needs to continue its development, growth and sustainability of a technology-based economy. For this end, the state of Alabama should promote education, training and development of highly-qualified human resources in the computing fields. For example, in the Montgomery area, efforts by the city in partnership with Maxwell Air Force Base and various state and private organizations made possible the establishment of the Montgomery Internet Exchange (MIX). MIX is an Internet technology that provides high speed internet access unique in the Southeast region (the first in Alabama and fourth in the southeast). Having the MIX in central Alabama provides opportunities to develop, create and attract businesses and services around it. However, the highly-qualified human resources that will be needed to support these enterprises are not guaranteed. The proposed M.S. in Computer Science aims to provide a sustained flow of qualified human resources in the computing field, which will be needed in Montgomery and the River Region.

Career and College Readiness/Preparation -- Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	145	145	145	145	145	725
State	1,140	1,140	1,140	1,140	1,140	5,700
SREB	48,810	48,810	48,810	48,810	48,810	244,050
Nation	108,380	108,380	108,380	108,380	108,380	541,900

The local (central AL region) projected job openings were calculated from the projection data obtained from Alabama Department of Labor for the year 2014-2024. The average number of annual openings for all computer occupations is 145. AUM used this number for each year in the next five-year period for simplicity. The projected job openings for the state of Alabama, the SREB and the nation are calculated from the employment data available at the Projections Central: State Occupational Projections (PCSOP) http://www.projectionscentral.com/Home/Index website (referred by the U.S. Bureau of Labor Statistics). The average annual openings for the state of Alabama, the SREB and the nation are respectively 1,140, 48,810, and 108,380. AUM used these numbers for each year of the next five-year period for simplicity.

Student Demand: A survey of AUM student interest was conducted using both on-line and paper based surveys with 5 questions. The target population was AUM students majoring in Mathematics, Computer Science and pre-engineering. AUM received 61 and 49 responses from on-line and paper-based surveys, respectively. The main result was that 65 percent of the students are interested in pursuing an M.S. in Computer Science degree and 56 percent are interested in enrolling at AUM for such a degree. If 10-12 students graduate from AUM's B.S. in Computer Science degree annually, then AUM reasons to expect that 5-6 of them will continue to the M.S. degree.

Faculty:

Current Primary Faculty—
Full-time: 3
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 2

Additional Faculty to Be Hired:

Primary Faculty—
Full-time: 2
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

New faculty members for the M.S. in Computer Science program will have a Ph.D. degree in Computer Science or in a very closely related field. The preferred expertise will be in the areas of high performance computing, data analytics, and cybersecurity. They will have a strong record of or outstanding potential for excellence in teaching and significant research. Additionally, they will have a commitment to service at both departmental and university levels, and will possess effective oral and written communication skills.

Support Staff: No additional support staff will be required.

Fellowships and Assistantships: Three assistantships will be offered.

Equipment: The following are the equipment needs for the program:

- Equipment for a new Linux-based classroom lab (software and hardware considered) will be acquired. It consists of 25 new computers at approximately a total of $20,000. No commercial software will be needed and most of the required software is open source and free (currently available). This classroom/lab can be shared with the M.S. in Cybersystems and Information Security.

- A security-networking lab will be implemented. (Approximate cost: $8,000)

Facilities: No additional facilities are needed.

Library: Currently, AUM's library has sufficient resources to support the program, however the acquisition of newer books in the areas of Computer Architecture, Data Analytics, High Performance Computing and Cybersecurity will strengthen its support of the proposed program. AUM will spend $5,000 for this purpose. To conduct the assessment of AUM’s holdings in Computer Science, AUM examined its holdings in comparison with regional peer institutions, all of which have programs accredited by Association to Advance Collegiate Schools of Business (AACSB), National Council for Accreditation of Teacher Education (NCATE), and Commission on Collegiate Nursing Education (CCNE). These schools were selected because a) they are within the southern region, and b) their curriculum is similar to AUM's. The assessment involved a key word search in each institutions catalog for the topics of Computer Science and software. The AUM Library holds 94.90 percent of the average holdings of the group, above the minimum goal of 70 percent of the peer group holdings for graduate courses. Additionally, the library provides access to 57 journal titles, which can support the program.

Program Budget: The proposal projected that $698,000 in new funds will be required over the program in the first five years, and that $699,640 will be available over the same period through internal reallocations and tuition.

Attachment 3

Curriculum

Auburn University at Montgomery
Master of Science in Computer Science

Core Courses (18 credit hrs.)

CSCI 6000 Algorithms Design and Analysis
CSCI 6050 Software Engineering
CSCI 6070 Advanced Database Systems
CSCI 6150 Operating Systems
CSCI 6170 Advanced Network Systems
CSCI 6250 Computer Architecture

Concentration 1: High performance Computing (HPC) (9 credit hrs.)

CSCI 6300 Advanced High Performance Computing
CSCI 6350 Distributed Systems
CSCI 6400 Advanced Data Intensive Computing

Concentration 2: Data Analytics (9 credit hrs.)

CSCI 6450 Machine Learning
CSCI 6500 Advanced Mathematical Statistics
CSCI 6550 Optimization Theory

Concentration 3: Computer and Cybersystems Security (9 credit hrs.)

CSCI 6600 Advanced Computer Security
CSCI 6650 Network Security
CSCI 6700 Cryptography

Concentration 4: General Computer Science (9 credit hrs.)

Take 3 courses from Concentrations 1, 2 and 3.

Options: Choose one of the following:

a) Thesis Option (6 credit hrs.): Thesis
CSCI 6992 M.S. Research Thesis

b) Non-Thesis Option (6 credit hrs.): Take 2 courses out of the courses in other concentrations or electives.

Elective Courses:

CSCI 6750 Secure Software Development
CSCI 6970 Special Topics in Computer Science (existing course)
CSCI 6924 Computer Science Internship

Total credits to graduate: 33 credit hrs.

Summary:

	Thesis	Non-Thesis
Credit hours required core courses	18	18
Credit hours required in concentration	9	9
Credit hours required in support courses or electives	NA	6
Credit hours for thesis or dissertation	6	NA
Total credit hours required for completion	**33**	**33**

The program requires students to complete 33 credit hours to graduate. In addition to 6 core courses (18 credit hours), students can choose one of the following four options: a) General Computer Science, b) High Performance Computing, c) Data Analytics, and d) Computer and Cybersystems Security. Within each of these options, students can choose to complete a thesis or opt for extra coursework. The offered options provide wide flexibility to students. The thesis-option provides students opportunities to conduct research with faculty. Moreover, the proposed M.S. in Computer Science is different from other programs offered in the state due to two options: High Performance Computing and Data Analytics, which are not similar to any other program. High Performance Computing and Data Analytics are unique options/concentrations for an M.S. in Computer Science program in the state of Alabama.

Concentration 1: High performance Computing (HPC) (9 credit hrs.)

CSCI 6300 Advanced High Performance Computing
CSCI 6350 Distributed Systems
CSCI 6400 Advanced Data Intensive Computing

Concentration 2: Data Analytics (9 credit hrs.)

CSCI 6450 Machine Learning
CSCI 6500 Computational Statistics
CSCI 6550 Optimization Theory

Concentration 3: Computer and Cybersystems Security (9 credit hrs.)

CSCI 6600 Advanced Computer Security
CSCI 6650 Network Security
CSCI 6700 Cryptography

Concentration 4: General Computer Science (9 credit hrs.)

Take 3 courses from Concentrations 1, 2 and 3.

New Courses:

Course Number and Title	Number of Credit Hours	* If New Course
CSCI 6000: Algorithms Design and Analysis	3	*
CSCI 6050: Software Engineering	3	*
CSCI 6070: Advanced Database Systems	3	*
CSCI 6150: Operating Systems	3	*
CSCI 6170: Advanced Network Systems	3	*
CSCI 6250: Computer Architecture	3	*
CSCI 6300: Advanced High Performance Computing	3	*
CSCI 6350: Distributed Systems	3	*
CSCI 6400: Advanced Data Intensive Computing	3	*
CSCI 6450 Machine Learning	3	*
CSCI 6500 Computational Statistics	3	*
CSCI 6550 Optimization Theory	3	*
CSCI 6600 Advanced Computer Security	3	*
CSCI 6650 Network Security	3	*
CSCI 6700 Cryptography	3	*
CSCI 6992 M.S. Research Thesis	6	*
CSCI 6750 Secure Software Development	3	*
CSCI 6970 Special Topics in Computer Science (existing course)	3	
CSCI 6924 Computer Science Internship	1~4	*

Attachment 4

Letter from Montgomery Area Chamber of Commerce
President, Randall L. George

MONTGOMERY
AREA CHAMBER OF COMMERCE

October 16, 2017

Yi Wang, Ph.D.
Professor/Department Chair
Department of Mathematics and Computer Science
Auburn University at Montgomery
P.O. Box 244023
Montgomery, Al 36124

Dear Dr. Wang:

On behalf of Montgomery Area Chamber of Commerce, I am writing this letter to offer our support and encouragement for a Master of Science in Computer Science program at Auburn University at Montgomery (AUM). We understand that AUM is requesting a graduate program to prepare highly qualified professionals in computing industry and education. The program is needed locally in order to prepare graduate-level computer scientists for the growing computer science industry of greater Montgomery, Alabama.

We have enjoyed an excellent relationship with AUM and we know that the graduates of the Department of Mathematics and Computer Science are well prepared for the various enterprises upon graduation. There is a need for more computer science graduates to be prepared at the graduate level in order to serve the community with the rapid growth of computing industry, such as big data and artificial intelligence.

We are pleased to see that AUM is planning for the future by proposing a master degree program in computer science. A local program is needed so that our staff can attend classes while working full-time and have access to faculty members for advisement and other activities. It will also provide a pathway for the B.S. degree graduates to continue their education locally and not leave the area.

As we address issues of quality, excellence and the new challenges of the industry, we welcome the opportunity to support and work with AUM to propose the Master of Science in Computer Science degree program. We know that we will need computer scientists prepared at the graduate level to provide expertise, leadership and maintain the quality standards that are essential for quality work and excellence service.

Thank you for the opportunity to support AUM in order to grow and prepare the graduate computer professionals and educators for the community, state and the nation.

Sincerely,

Randall L. George
President

POST OFFICE BOX 79 41 COMMERCE STREET MONTGOMERY, AL 36101
TEL: 334.834.5200 FAX: 334.265.4745 MACC@MONTGOMERYCHAMBER.COM WWW.MONTGOMERYCHAMBER.COM

Attachment 5

Letter from ALFA Life Insurance Company,
Vice President and Chief Actuary, Jerry F. Enoch

2108 EAST SOUTH BOULEVARD ■ POST OFFICE BOX 11000
MONTGOMERY, ALABAMA 36191-0001
334/288-3900

Yi Wang, Ph.D.
Professor/Department Chair
Department of Mathematics and Computer Science
Auburn University at Montgomery
P.O. Box 244023
Montgomery, Al 36124

November 13, 2017

Dear Dr. Wang

On behalf of the Actuarial Department of Alfa Life Insurance Corporation, I am writing this letter to offer our support and encouragement for establishing a Master of Science in Computer Science program at Auburn University at Montgomery. The program is needed locally in order to prepare graduate-level computer scientists for the computer science industry and the broader community, such as Alfa, the hospitals, and governments in greater Montgomery, Alabama.

There is a need for more computer science graduates to be prepared at the graduate level in order to serve the community with the rapid growth of tools in the computing industry, such as big data and artificial intelligence. The life insurance industry, as well as the property-casualty insurance industry is devoting a great deal of attention and resources in data analytics. This area will grow for the foreseeable future. After the industry has completed this step, there will undoubtedly be some future, unforeseen developments to advance the industry. Having a graduate program in AUM would position AUM to serve the community with whatever future developments unfold.

A local program is needed so that our staff can attend classes while working full-time and have access to faculty members for advisement and other activities. It will also provide a pathway for the B.S. degree graduates to continue their education locally and not leave the area. Alfa already has a sizeable staff working in data analytics. While it is not in my area, I understand that Alfa has developed a working relationship with the University of Alabama in data analytics, and that groups of students have completed projects for Alfa. I see no reason why we might not develop a relationship with AUM.

I have spoken to the AUM Math Club on at least two occasions, and I look forward to continuing my personal relationship with the university. I hope that AUM will be able to step up and better prepare graduate computer professionals and educators for the community, state, and nation.

Sincerely,

Jerry F. Enoch

Jerry F. Enoch, FSA, MAAA
Vice President and Chief Actuary
Alfa Life Insurance Corporation

Attachment 6

Letter of Sherlock, Smith & Adams, Architects and Engineers, Fellow Health Facilities Institute, Robert E. Snider

SHERLOCK
SMITH & ADAMS
ARCHITECTS / ENGINEERS

October 16, 2017

Yi Wang, Ph.D.
Professor/Department Chair
Department of Mathematics and Computer Science
Auburn University at Montgomery
P.O. Box 244023
Montgomery, AL 36124

Dear Dr. Wang:

I am writing this letter on behalf of Sherlock, Smith and Adams, which is an Architectural and Engineering firm located in Montgomery, Alabama. I am writing this letter to offer our support and encouragement for a Master of Science in Computer Science program at Auburn University at Montgomery (AUM). We understand that AUM is requesting a graduate program to prepare highly qualified professionals in computing, industry and education. We believe the program is needed locally in order to prepare graduate-level computer scientists for the growing computer science industry of greater Montgomery, Alabama. Not only will having the Master's program easily available provide an incentive for students to achieve a higher level for this fast growing field, it also means the students do not have to leave Montgomery, and spend their education dollars at another college to achieve a Master's degree.

We have enjoyed an excellent relationship with AUM and we know that the graduates of the Department of Mathematics and Computer Science are well prepared for the various enterprises upon graduation. There is a need for more computer science graduates to be prepared at the graduate level in order to serve the community with the rapid growth of the computing industry, such as big data and artificial intelligence, and cyber security, which is very important to us.

We are pleased to see that AUM is planning for the future by proposing a master degree program in computer science. Having a local program available so students could attend classes while working full-time would be a big benefit to people with a full-time job that would otherwise not have this opportunity.

As we address issues of quality, excellence and the new challenges of the industry, we welcome the opportunity to support and work with AUM to propose the Master of Science in Computer Science degree program. We believe there is a growing need to have computer scientists prepared at the graduate level to provide expertise, leadership and maintain the quality standards that are essential for quality work and excellent service.

Thank you for the opportunity to support AUM in order to grow and prepare the graduate computer professionals and educators for the community, the state, and the nation.

Sincerely,

Robert E. Snider

Robert E. Snider, PE, CHC, LEED® AP, BD+C
Fellow, Health Facilities Institute
SHERLOCK, SMITH & ADAMS, INC.

SHERLOCK SMITH & ADAMS

3047 Carter Hill Road / Montgomery, Alabama 36111 / Phone (334) 263-6481 / Fax (334) 264-4509 / www.ssainc.com

DECISION ITEM TU-1: Action on Troy University's Request to Extend the AA and AS in General Education (Montgomery Campus), CIP 24.0199, to the Troy Campus

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the extension of the AA and AS in General Education (Montgomery) (CIP 24.0199) to the Troy campus.

Background: Troy University has requested that the Commission approve the extension of the AA and AS in General Education (CIP 24.0199), currently offered only on the Montgomery campus, to the Troy campus.

Troy University's (TROY) program listings in the Commission's Academic Program Inventory are site specific, as stipulated in the Commission's approval of the consolidation of Troy State University, Troy State University Montgomery, and Troy State University Dothan. The Commission approval further stipulated that "no program not currently offered at a campus may be offered at another campus without the approval of ACHE."

In September 2009 the Commission established a process to review requests for expansion of programs to additional campuses as reasonable extensions/ alterations of existing programs. The process included the following criteria for review.

1. Evidence of the strength of the current programs.
2. Need for the Programs: The institution must provide documentation that there is significant unmet need (employer demand) which cannot be met by the campus-based programs or by other similar programs in the state.
3. Adequate Student Demand: The institution must provide documentation of strong student demand.
4. Evidence of adequate resources at the new site: faculty, facilities, library.
5. Signed clinical agreements, if required for the program.

Supporting Documentation:

1. "Administrative and Institutional Consolidation of Troy State University, Troy State University Montgomery, and Troy State University Dothan," approved June 24, 2005. Available upon request.

2. Letter from Dr. Earl Ingram, Senior Vice Chancellor for Academic Affairs of Troy University, dated January 12, 2018. Available upon request.

PROGRAM EXTENSION REQUEST

Program: CIP 24.0199 General Education (Montgomery), AA and AS.

Request: Extension of the full programs to the Troy campus of Troy University.

Evidence of the strength of the current program: The proposal stated that currently, the AA and AS in General Education continue to be very strong degree programs for students whose home locations are the Montgomery and Dothan campuses. In the last three academic years, the following data provides support for this strength:

Number of AA and AS in General Education students currently enrolled for Montgomery and Dothan: 628.

Number of AA and AS in General Education degrees awarded for Montgomery and Dothan: 191.

Need for the program:
The institution must provide documentation that there is significant unmet need (employer demand) which cannot be met by the campus-based program or by other similar programs in the state.

Troy University officials provided a list of over 30 employers in Pike County where the Troy Campus is located, which would hire Associate degree holders. Similar data was also found in Bullock County, which is adjacent to Pike County. Employers in Bullock County that are most likely to hire Associate degree holder include: Wayne Poultry, Bonnie Plant Farm, Bullock County Correctional Facility, Bullock County Hospital, Dixie Electric Cooperative, and Union Springs Telephone.

The Troy Campus increasingly is the home location for more traditionally-aged students who have military commitments in the Reserve, as well as the National Guard. Many of these students would benefit from a stepwise sequence in their pursuit of a baccalaureate degree, with the opportunity to earn an Associate degree initially. The Troy Campus is also the home location, increasingly, for nontraditional students who have current military commitments or who have completed their military commitments and are seeking a degree in higher education. Information gleaned from this group strongly indicates their desire to complete an Associate degree before moving toward the completion of a four-year program. Academic advisors receive regular requests from these two groups of students about the opportunity to pursue an Associate degree as a member of the Troy Campus.

Third, there is strong evidence that the awarding of an Associate degree to Troy Campus at-risk students (ie, developmental studies students and conditionally admitted students particularly) would enhance progression toward, and completion of, the baccalaureate degree. This evidence is supported by information gained from these students in their discussions with the academic advisors who work with at-risk students. This evidence also compliments the national data, which suggests that the awarding of an Associate level degree creates strong incentives for bachelor's-level degree completion and some evidence suggests that it may support interest in post-baccalaureate pursuits.

Adequate student demand:
The institution must provide documentation of strong student demand.

An interest survey was distributed to over 500 current TROY undergraduate students. Over two hundred of the responses indicated interest in the programs.

Faculty, Facilities, Library:

Faculty: Currently, the Troy Campus provides SACSCOC-certified instruction over 7,000 undergraduate students. Several hundred full-time and several hundred part-time SACSCOC-certified faculty deliver undergraduate instruction on the Troy Campus each semester. All areas within the General Education program are taught by full-time faculty on the Troy Campus. These full-time and part-time faculty also deliver a wide variety of 1000 and 2000 course level of instruction (appropriate for AA and AS degrees). At present, this faculty is already delivering all the courses, which would be taken by any student who is pursuing the Associate degree.

Facilities: The Troy Campus has over a dozen major buildings which are used for the delivery of undergraduate instruction. Hundreds of classrooms currently are used each semester for these classes and courses are taught approximately 14-15 hours each day (8:00 a.m. to 11:00 p.m.). Additionally, there are a significant number of science labs and computer labs which are part of the instructional inventory of classes. Facilities at the Troy Campus are more than adequate for the awarding of the AA and AS degrees in General Education.

Library: According to information submitted by TROY, the library provides students and faculty access to a wide array of resources required to support the purpose and scope of the programs. All database collections are available online. All library resources available to the Montgomery campus are also available to the Troy campus.

Budget: The extension of the program will not require additional financial resources.

DECISION ITEM UA-1: University of Alabama, Bachelor of Science in Addiction and Recovery (CIP 19.0707)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Description: The purpose of the Addiction and Recovery degree program is to provide students with an overview of the biological, psychological, and social factors associated with the development and progression of a variety of addictions (chemical and behavioral); teach students methods of identifying and preventing precursors to problems of addiction using evidence-based prevention techniques; demonstrate effective age-appropriate, behavioral and combination treatments that incorporate individual, family, peers, school/work and community influences as both origins of the problem and potential solutions; and explain the process of recovery from addiction with emphasis on combined physical, psychological, and community health techniques grounded in individualized needs within the social context.

Role: The proposed program is within the instructional role recognized for the University of Alabama (UA).

Mode of Delivery: Approximately 15 percent of the program will be offered online. According to the proposal, the program will be delivered to students through traditional lecture courses (in-person or online) and internships supervised by professionals in the addiction field.

Similar Programs: There are no other programs listed at CIP 19.0707 in the Academic Program Inventory.

Collaboration: While UA is open to explore program collaborations, there are no plans to do so at this time.

Resources: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $2,398,800 will be available through tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. Graduates of the proposed BS in Addiction and Recovery will be prepared to work in entry-level positions at nonprofit substance abuse treatment centers and work toward their Alcohol and Drug Counselor (ADC) Certification from the Alabama Alcohol and Drug Abuse Association (AADAA).

2. The addiction recovery movement has been growing substantially over the last decade. There are over 85 collegiate recovery communities serving students in long-term recovery from addiction in the United States listed with the Association for Recovery in Higher Education, 18 of which are in the Southeastern US, and three of which are in the state of Alabama (UA, UAB, and AU).

DECISION ITEM UA-1: University of Alabama, Bachelor of Science in Addition and Recovery (CIP 19.0707)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Bachelor of Science in Addiction and Recovery.

The program will have the implementation date and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in January 2019. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 10 based on the proposal.

2. That the annual average number of graduates for the period 2020-21 through 2022-23 (four-year average) will be at least 10, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in continuing in related graduate work.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of Alabama (UA) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than February 1, 2024.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. University of Alabama program proposal, received November 3, 2017. Available upon request.

5. "Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of Alabama

PROGRAM: Bachelor of Science in Addiction and Recovery (CIP 19.0707)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2019-20	2020-21	2021-22	2022-23	2023-24	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2019-20	2020-21	2021-22	2022-23	2023-24	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$172,400	$404,800	$566,720	$647,680	$607,200	$2,398,800
TOTAL	$172,400	$404,800	$566,720	$647,680	$607,200	$2,398,800

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2019-20	2020-21	2021-22	2022-23	2023-24	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	10	20	28	32	30	24
NEW ENROLLMENT HEADCOUNT	10	10	10	10	10	10
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	2	6	12	20	10

Attachment 2
Summary of Background Information

Bachelor of Science in Addiction and Recovery
University of Alabama

Role: The proposed program is within the instructional role recognized for the University of Alabama (UA).

Program Description: The purpose of the Addiction and Recovery degree program is to provide students with an overview of the biological, psychological, and social factors associated with the development and progression of a variety of addictions (chemical and behavioral); teach students methods of identifying and preventing precursors to problems of addiction using evidence-based prevention techniques; demonstrate effective age-appropriate, behavioral and combination treatments that incorporate individual, family, peers, school/work and community influences as both origins of the problem and potential solutions; and explain the process of recovery from addiction with emphasis on combined physical, psychological, and community health techniques grounded in individualized needs within the social context. Upon successful completion of the proposed program, students should be able to:

1. Identify various biological, psychological, social (family, peers, culture) factors across the lifespan that influence the development and progression of addictive behaviors — both chemical and behavioral.

2. Describe evidence-based prevention approaches for addictions that address risk and protective factors across the lifespan in different contexts (e.g., family, peers, community).
3. Identify addiction counseling competencies and evidence-based treatments for individuals and families.

4. Describe the process of recovery from behavioral and chemical addictions, particularly in the context of the family and community.

Administration: The program will be administered by the College of Human Environmental Sciences, Dr. Milla Boschung, Dean; and the Department of Human Development and Family Studies, Dr. Robert Laird, Chair.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Chief Academic Officers (CAOs). There were no objections to the NISP or the program proposal.

Accreditation: The National Addiction Studies Accreditation Commission (NASAC) offers accreditation for addiction studies programs (including those at the bachelor's level) at colleges and universities. The curriculum requirements outlined by NASAC are consistent with the proposed B.S. program, and the accreditation process (self-study, application, site visit, and other procedures) are reasonable. Once the new B.S. program has been well established, program officials will discuss the benefits of pursuing NASAC accreditation.

Curriculum: No new courses will be added to the program. Students must successfully complete an internship prior to graduation.

Credit hours required in major: 48 semester hours (sh)
Credit hours in general education or core curriculum: 47 (sh)
Credit hours required in minor: n/a
Credit hours required in support courses: 6
Credit hours required in free electives: 19

Credit hours required for completion: 120 (sh)

Collaboration: While UA is open to explore program collaborations, there are no plans to do so at this time.

Distance Education: Approximately 15 percent of the program will be offered online. According to the proposal, the program will be delivered to students through traditional lecture courses (in-person or online) and internships supervised by professionals in the addiction field.

Admissions: The program has no special admissions requirements.

Need: In 2012, alcohol abuse or dependency affected 5 percent of Alabama's population (with a national rate of 6.6 percent); drug abuse and dependency affected 3.8 percent of Alabamians (3.3 percent nationally). According to the Substance Abuse and Mental Health Services Association (SAMHSA), there were 148 substance abuse treatment facilities in the state of Alabama treating 16,648 clients as of on March 30, 2012. However, there were hundreds of Alabama residents left untreated for their alcohol/drug problems. The "treatment gap" — Alabama residents 12 years and older needing, but not receiving treatment for alcohol dependency— was reported to be 4.8 percent in 2011-2012 with a national rate of 6 percent to 7 percent.

In addition to drug and alcohol dependency, addiction to other activities such as gambling, sexual activities (e.g., viewing pornography), video-gaming, or eating have been on the rise nation-wide, yet there are very few treatment centers devoted to behavioral addictions. For example, the first inpatient videogame/internet treatment center in the US opened in 2013 at Bradford Regional Medical Center in Pennsylvania, and more have been established around the country since then.

The addiction recovery movement has been growing substantially over the last decade. There are over 85 collegiate recovery communities serving students in long-term recovery from addiction in the United States listed with the Association for Recovery in Higher Education, 18 of which are in the Southeastern US, and three of which are in the state of Alabama (UA, UAB, and AU).

Student Demand: A brief survey was administered via social media to 84 UA alumni, including 80 who minored in Addiction and Recovery between May, 2013 and May, 2017 and four who completed several courses in the minor during that time period. The survey polled students' interest in this proposed major by asking the following question: If there had been an academic major in Addiction and Recovery at UA during your time as a student, would you have chosen this as your major? A total of 39 out of 84 students replied (46.4 percent response rate); approximately 74 percent (29 alumni out of 39) replied "Yes" and 28 percent (11 alumni) replied "No."

Resources:

Faculty:
Current Primary Faculty—
Full-time: 5
Part-time: 2
Support Faculty—
Full-time: 0
Part-time: 0
Additional Faculty to Be Hired:
Primary Faculty—
Full-time: 2 – Additional funding lines are not being requested.
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Equipment: It is not anticipated that any new or additional special equipment will be required for the program.

Facilities: No new facilities will be required.

Library: According to the proposal, there are sufficient library resources to support the proposed program.

Program Budget: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $2,398,800 will be available through tuition.

Attachment 3

The University of Alabama
Bachelor of Science in Addiction and Recovery

Major Courses:		
Overview of chemical/behavioral addictions and recovery		
HD210 Understanding Addiction	3	
Foundation for normal and abnormal development and mental and behavioral disorders (including eating disorders)		
HD302 Adolescent Development	3	
HD325 Problems in Child and Adolescent Development	3	
PY358 Abnormal Psychology	3	
Drugs, alcohol, risky and compulsive sexual behaviors, HIV/AIDS, STDs		
HHE378 Drug Awareness Education or SW414 Chemical Dependency	3	
HD475 Human Sexuality	3	
Policy, prevention, treatment, recovery		
HD405 Policy Issues: Family, Crime and Addiction	3	
HD415 Addiction Prevention (Writing Designation)	3	
HD375 Foundations of Addiction Counseling	3	
HD450 Addiction Treatment and Recovery	3	
Family dynamics of addiction and recovery		
HD445 Addiction and the Family	3	
Program evaluation, measurement, data		
PY211 or BER345 Statistics	3	
HD472 Program Evaluation	3	
Specialty focus: welfare/social justice, juvenile delinquency, community corrections, drugs and society		
One Elective SW210 Family and Child Welfare CJ240 Juvenile Delinquency CJ225 Community Based Corrections HY378 Drugs, Booze, and Mexican Society	3	
Field experience		

HD499 Internship in the Addiction Field	6	
General Education Courses:		
ENIOI and 102 Freshman English	6	
Foreign Language or Computer Science	6	
HDIOI (History/Social/Behavioral Sciences)	3	
PY101 (History/Social/Behavioral Sciences)	3	
History/Social/Behavioral Sciences	6	
Fine Arts, Literature, Humanities	12	
BSCI 09 or BSCI 14/5 (Math/Natural Sciences)	4	
Math/Natural Sciences	7	
CHES Core Courses:		
HESI 00 Freshman Compass (first year students only)	3	
HES310 Issues in Human Environmental Sciences	3	
Total	**120**	

DECISION ITEM UAB-1: University of Alabama at Birmingham, Bachelor of Science in Bioinformatics (CIP 26.1103)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Description: The purpose of the Bachelor of Science in Bioinformatics is to prepare students with a strong educational background for a career in data-driven biomedical research, clinical genomics, and industry. The bioinformatics program will prepare students to lead, teach, perform research work, provide professional services, and become prominent scholars. This program aims to provide students with a marketable degree that provides employment opportunities for college graduates in basic research, clinical genomics, and the private sector. These graduates will be well prepared to assist health professionals in analyzing large-scale datasets resulting from genome sequencing projects, genome wide association studies, proteomic and metabolomic datasets. UAB graduates will be at the frontline of the emerging disciplines of Biocomputing, Computational Biology, and Bioinformatics. Some of the job titles associated with the proposed program include: Data Scientist, Bioinformatics Scientist, Bioinformatics Analyst, Research Associate, Bioinformatics Engineer, Bioinformatics Technician, and Bioinformatics Software Developer.

Role: The proposed program is within the instructional role recognized for the University of Alabama at Birmingham (UAB).

Mode of Delivery: According to the proposal, all courses will be offered only on the UAB campus.

Similar Programs: There are no other programs at CIP 26.1103 in the Academic Program Inventory.

Collaboration: There are no plans for collaboration with other institutions beyond UAB at this time.

Resources: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $1,629,504 will be available through tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. Bioinformatics has recently emerged as an interdisciplinary research area that enables the analysis and interpretation of biological data using computational tools and techniques.

2. Graduates of the program will be well prepared to assist health professionals in analyzing large-scale datasets resulting from genome sequencing projects, and genome-wide association studies.

3. There are no other Bioinformatics programs in the state at this time.

DECISION ITEM UAB-1: University of Alabama at Birmingham, Bachelor of Science in Bioinformatics (CIP 26.1103)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Bachelor of Science in Bioinformatics.

The program will have the implementation date and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 12 based on the proposal.

2. That the annual average number of graduates for the period 2021-22 through 2022-23 (two-year average) will be at least 12, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in continuing in related graduate work.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of Alabama at Birmingham (UAB) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. University of Alabama at Birmingham program proposal, received November 3, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of Alabama at Birmingham

PROGRAM: Bachelor of Science in Bioinformatics (CIP 26.1103)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$99,360	$208,656	$327,888	$457,056	$536,544	$1,629,504
TOTAL	$99,360	$208,656	$327,888	$457,056	$536,544	$1,629,504

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	10	21	33	46	54	33
NEW ENROLLMENT HEADCOUNT	10	11	12	13	16	12
						2-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	0	8	16	12

Attachment 2
Summary of Background Information

Bachelor of Science in Bioinformatics
University of Alabama at Birmingham

Role: The proposed program is within the instructional role recognized for the University of Alabama (UA).

Program Description: The purpose of the Bachelor of Science in Bioinformatics is to prepare future students with a strong educational background for a career in data-driven biomedical research, clinical genomics, and industry. The bioinformatics program will prepare students to lead, teach, perform research work, provide professional services, and become prominent scholars. This program aims to provide students with a marketable degree that provides employment opportunities for college graduates in basic research, clinical genomics, and the private sector. These graduates will be well prepared to assist health professionals in analyzing large-scale datasets resulting from genome sequencing projects, genome wide association studies, proteomic and metabolomic datasets. UAB graduates will be at the frontline of the emerging disciplines of Biocomputing, Computational Biology, and Bioinformatics. Some of the job titles associated with the proposed program include: Data Scientist, Bioinformatics Scientist, Bioinformatics Analyst, Research Associate, Bioinformatics Engineer, Bioinformatics Technician, and Bioinformatics Software Developer.

The following student learning outcomes associated with the program are as follows:

1. Demonstrate multidisciplinary (computer science, biology, medicine, human health, chemistry, and math) perspectives on the relationship between computer science and the natural sciences through hands-on research experiences;
2. Demonstrate technical knowledge and skills to address biological problems by accessing datasets, developing hypotheses, and implementing bioinformatics tools;
3. Develop professional growth, stimulation and advancement, lifelong personal development, and social responsibility;
4. Demonstrate problem-solving skills, including the ability to develop new software, algorithms and analysis methods;
5. Exhibit strong oral and written communication skills necessary to effectively communicate major research findings.

Administration: The program will be administered by the College of Arts and Sciences; School of Medicine, Dr. Robert Palazzo, Dean; and the Department of Biology, Computer and Information Sciences, Genetics, Steve Austad, Chair.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Chief Academic Officers (CAOs). There were no objections to the NISP or the program proposal.

Accreditation: There is no specialized accreditation required for the program.

Curriculum: The program will require the following five new courses: Bioinformatics I, Bioinformatics II, Biological Database Management, Next-generation Sequencing Analysis, and Bioinformatics Capstone.

Program Requirements
Credit hours required in major: 53 semester hours (sh)
Credit hours in general education or core curriculum: 30 (sh)
Credit hours required in minor: n/a

Credit hours required in support courses: 16 (sh)
Credit hours required in free electives: 21 (sh)
Credit hours required for completion: 120 (sh)

Collaboration: There are no plans for collaboration with other institutions beyond UAB at this time.

Distance Education: According to the proposal, all courses will be offered only on the UAB campus.

Admissions: Due to the interdisciplinary nature of the program, admissions criteria will be higher than those for either biology or computer science. Therefore, UAB will require admission to the proposed Bioinformatics major be based on the following minimum criteria: Must satisfy UAB general admission requirements; First-time freshmen applicants must have high school cumulative GPA of 3.5 or higher (on a 4.0 scale) and ACT composite score of 28 or higher (or the SAT combined V+Q score at 1260 or higher). These are similar to the UAB Honors Program Criteria. Current students wishing to change/declare major in Bioinformatics and transferring students must have a GPA of 3.0, after 24 credits hours of study.

Need: Since the reporting of the first complete human genome sequence in 2003 and additional complete genome sequencing that followed, there have been major advances in bioinformatics, especially in the development of new technologies that are transforming all areas of the biological sciences and healthcare. To analyze and interpret these datasets now require large scale computation and extensive data analysis capabilities. This rapid progress has created a significant need for research scientists, medical and health care professionals, and other specialists with training in these fields in the state of Alabama. Development of this major would act as an economic driver for the Birmingham and Huntsville metropolitan areas and the state of Alabama in general. The demand for individuals with expertise in these areas will continue to increase in the near future with the establishment of new personalized genomic approaches that will use an individual's genomic information for the diagnosis, treatment, management, and prevention of medical disorders. Currently, there are no bioinformatics undergraduate degrees offered by any university in the state of Alabama.

There is a growing need for a new generation of life scientists who understand how to solve complex biological problems with computational techniques, from high-performance computing to mathematical modeling of molecular systems, and engineers who understand how to make sense of large data upon extensive machine learning and mathematical modeling processes in order to benefit biomedical research and applications. The BS degree in Bioinformatics provides professional opportunities for graduates to pursue careers in both basic and applied research in academia, government, pharmaceutical, medical, or biotechnology sectors at various levels. These opportunities include data managers, data analysts, microarray/proteomics bioinformaticians, software engineers/developers, software sales engineers, professional services engineers, bioinformatics application developers, computational biologists and research specialists, among others.

Student Demand: A survey of undergraduate (majority being sophomore and the rest mostly juniors/seniors; half being biology major students) interest at UAB reveals a considerable interest in the new program. Details about the survey including the survey questions, number and percentage of respondents, and summary plots were included in the program proposal. The survey showed the following trends:

- When students were asked whether they would select the BS in Bioinformatics as their major, 60 percent of the students are potentially interested (16 percent for yes and 44 percent for maybe) in 2016.

- Interests in bioinformatics significantly increased from 2014 to 2016.

Resources:

Faculty:
Current Primary Faculty—
Full-time: 20
Part-time: 0
Support Faculty—
Full-time: 2
Part-time: 0

Additional Faculty to Be Hired:
Primary Faculty—
Full-time: 0
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Equipment: It is not anticipated that any new or additional special equipment will be required for the program.

Facilities: No new facilities will be required.

Library: According to the proposal, there are sufficient library resources to support the proposed program.

Program Budget: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $1,629,504 will be available through tuition.

Attachment 3

The University of Alabama at Birmingham
Bachelor of Science in Bioinformatics

Freshman Year
Fall Semester
- CAS 112 Success in College (1 credit)
- BY 123 and 123L Introductory Biology I & Laboratory (4 credit hours)
- CH 115/116 General Chemistry I and Laboratory (4 credit hours)
- EH 101 English Composition I (3 credit hours)
- Area II or IV (3 credit hours)
- Total Credits=15

Spring Semester
- BY 124 and 124L Introductory Biology II & Laboratory (4 credit hours)
- EH 102 English Composition II (3 credit hours)
- Area II: PHL 116 Bioethics (3 credit hours)
- CS 103 Introduction to Computation (4 credit hours)
- INFO 1XX Introductory Bioinformatics Seminar (1 credit hour)
- Total Credits=15

Sophomore Year
Fall Semester
- BY 210 Genetics (3 credit hours)
- CS 203 Introduction to Object Oriented Programming (4 credit hours)
- MA 125 Calculus I (4 credit hours)
- Area II or IV (3 credit hours)
- INFO 1XX Introductory Bioinformatics Seminar (1 credit hour)
- Total Credits=15

Spring Semester
- GGSC 320 Genome Structure and Organization (3 credit hours)
- MA 126 Calculus II (4 credit hours)
- CS 250 Discrete Structures (3 credit hours)
- Area II or IV (3 credit hours)
- INFO 1XX Introductory Bioinformatics Seminar (1 credit hour)
- Total Credits=14

Junior Year
Fall Semester
- BY 330 Cell Biology (3 credit hours)
- INFO 302 Bioinformatics I (3 credit hours)
- CS 303 Algorithms and Data Structures (4 credit hours)
- PUH 250 Biostatistics (3 credit hours)
- Area II or IV (3 credit hours)
- Total Credits=16

Spring Semester
- MA 268 Introduction to Mathematical Biology (3 credit hours)
- INFO 403 Bioinformatics II (3 credit hours)
- Major Elective Course #1 (3 credit hours)
- General Elective Course #1 (3 credit hours)
- Area II or IV (3 credit hours)
- Total Credits=15

Senior Year

Fall Semester

INFO 404 Biological Database Management (3 credit hours)
Major Elective Course #2 (3 credit hours)
Major Elective Course #3 (3 credit hours)
General Elective Course #2 (3 credit hour)
Area II or IV (3 credit hours)
Total Credits=15

Spring Semester

INFO 405 Living Systems Analysis (3 credit hours)
INFO 499 Bioinformatics Capstone (3 credit hours)
Major Elective Course #4 (3 credit hours)
Major Elective Course #5 (3 credit hours)
Area II or IV (3 credit hours)
Total Credits=15

120 Total Credit Hours

DECISION ITEM UAB-2: University of Alabama at Birmingham, Master of Science in Anatomical Sciences Education (CIP Code 26.0403)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The proposed MS in Anatomical Sciences Education will offer advanced training in Anatomy/Neuroanatomy/Embryology/Histology together with specialized educational courses to train participants to teach at the college level. The goal is to equip individuals with the skills required to teach in the anatomical sciences and thereby help to meet a rapidly growing need for anatomists in multiple health-care focused programs and courses. One facet of UAB's mission as an academic medical center is the practical application of knowledge to train individuals for health-care roles serving the local Birmingham community, the state of Alabama, and the country as a whole. Knowledge of human anatomy is a required foundation for multiple healthcare roles. Education in the anatomical sciences is thus fundamental to this goal. In addition, individuals with this degree would be qualified to seek employment in several other fields such as medical examiner's offices, engineering medical models or medical illustration and medical laboratories.

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama at Birmingham (UAB).

Mode of Delivery: Ten to thirteen percent of the content will be distance education depending on chosen Centre for Integration of Research, Teaching and Learning (CIRTL) content. Many CIRTL courses offer on-line and on campus courses. Students may choose those courses that best fit their schedule and interests. Content in the anatomy core must be taken on campus, as there is no alternative for learning lab content, i.e. dissection skills, online.

Similar Programs: There are currently no programs offering specialized training in anatomical sciences, combined with education in Alabama, Troy University offers a MS in Biomedical Sciences, which offers students the possibility of taking electives in Neuroanatomy, Histology and Histology with Embryology. Auburn also offers an MS in Biomedical Sciences; this is an interdepartmental course run out of the College of Veterinary Medicine. Anatomy is also included in some of the modules of the MS in Biomedical and Health Sciences at UAB, but in neither of these cases are Anatomical Sciences the focus. In no case is there an equivalent stand-alone degree in Anatomical Sciences with Education, as proposed in the current application. There are 16 programs in other SREB states that have various degrees of some similarity to the current proposal.

Collaboration: At present UAB does not plan to collaborate with other institutions. The curriculum UAB is proposing is highly specialized requiring very specific facilities, (i.e., gross anatomy lab), which are not commonly found in most institutions.

Resources: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $264,600 in new funds will be available from tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. This new program would be the only one of its kind in Alabama to specifically train students to teach anatomical sciences at the college level. The anticipated expansion in health-care courses will require increased numbers of these highly specialized professionals, yet few opportunities exist nationwide for students to acquire this kind of focused training. In addition, this course will provide an additional option for students who may not wish to follow the academic research track, but would still like to be engaged with the academic enterprise.

2. Students will enjoy an extremely high faculty-student teaching ratio, in some cases as low as 1:1 instruction. They will have extensive "hands-on" instruction from our cadre of highly experienced anatomists and histologists. Students will be exposed to some of the latest innovations in anatomical sciences education, including 3D-anatomy via the use of ultrasound with standardized patients, radiologic anatomy, using CT scans of cadavers, plastinated specimens, and the use of virtual microscopy in histology education.

3. Students will have multiple opportunities for teaching practicums in laboratory, lecture and small group/PBL/TBL settings. They will be able to interact with a diverse population of learners ranging from undergraduates to medical and dental/optometry students and will therefore get practice in preparing material for multiple different learning cohorts.

4. The incorporation of courses focused on teaching at the college level via the well-respected Centre for Integration of Research, Teaching and Learning (CIRTL) at UAB, (part of the national CIRTL network), is a distinct strength. UAB anticipates that all students will take sufficient courses to fulfill the requirements for a CIRTL Associate Certificate and that some may take additional courses to qualify for the CIRTL Practitioner Certificate.

5. In addition, workshops and seminars in STEM education provided by the Center for Teaching and Learning at UAB will be available to students to supplement CIRTL courses.

6. Students will also be introduced to educational research via the development and presentation of a project focused on a teaching innovation in the anatomical sciences or an anatomical topic of interest.

DECISION ITEM UAB-2: University of Alabama at Birmingham, Master of Science Anatomical Sciences Education (CIP Code 26.0403)

Staff Presenter: Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed Master of Science in Anatomical Sciences Education.

The program will have the implementation date and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning 2018-19, will be at least 4 based on the proposal.

2. That the annual average number of graduates for the period 2018-19 through 2022-23 (five-year average) will be at least 4, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in continuing in related graduate work.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of Alabama at Birmingham (UAB) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Letter from Letter from Dr. Etty Benveniste, Senior Associate Dean for Research Administration, UAB School of Medicine, attached.

5. Letter from Dr. Janelle M. Chiasera, Chair and Professor, Department of Clinical and Diagnostic Sciences, UAB School of Health Professions, attached.

6. Letter from Dr. Lori L. McMahon, Dean, Graduate School, Jarman F. Lowder Professor of Neuroscience, Director of the UAB Comprehensive Neuroscience Center

7. University of Alabama at Birmingham program proposal, received November 3, 2017. Available upon request.

8. "Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of Alabama at Birmingham

PROGRAM: Master of Science in Anatomical Sciences Education (CIP Code 26.0403)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2010-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$37,800	$50,400	$50,400	$63,000	$63,000	264,600
TOTAL	$37,800	$50,400	$50,400	$63,000	$63,000	264,600

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT *	3	4	4	5	5	4
NEW ENROLLMENT HEADCOUNT	3	4	4	5	5	4

						5-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	3	3	4	4	5	4

*All students are projected to be full-time.

Attachment 2

Summary of Background Information

Master of Science in Anatomical Sciences Education
University of Alabama at Birmingham

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama at Birmingham (UAB).

Description and Objectives: Upon completion of this program, the graduate will be able to:

- Demonstrate competence in gross anatomical dissection of entire human cadaver, including identification of major and minor features, vasculature and an understanding of the anatomical relationships of major structures.
- Demonstrate familiarity with cross-sectional, radiologic and ultrasound anatomy and be able to relate these images to cadaveric anatomy.
- Demonstrate ability to identify cells, tissues and organs from microscopic appearance and be able to describe tissue functions at the cellular level.
- Describe and explain key events in embryological development in the context of cellular and anatomical changes.
- Obtain a functional and topographic understanding of the brain, spinal cord, autonomic and peripheral nervous systems.
- Demonstrate ability to communicate effectively and educate others in anatomical principles by development of lesson plans, laboratory activities, small group and active learning scenarios that emphasize the integrated nature of current clinical practice.
- Demonstrate ability to carry out quantitative and qualitative research in the anatomical sciences and/or medical education by completion of research project and presentation of findings.

Assessment: Students will be largely assessed by GPA, as assessed by examinations (written, practical, multiple-choice tests), and tab work, e.g., quality of prosections. The students must maintain an average of 3.0, with no more than one grade of 'C'. Grades below 'C' will be grounds for probation, remediation, or termination as determined by the faculty. The other degree requirements, (teaching practicum and research capstone), will be assessed as described in the detailed syllabi of those courses. In addition, students will be assigned a faculty mentor at the beginning of the course, with whom they will meet on a regular basis to discuss progress and from whom they will receive frequent verbal feedback. At the end of each semester the student will receive narrative (written feedback) assessing their progress in all aspects of the course.

An application database will be used to track the number of applicants, accepts, matriculations, and graduations. This database will be modeled on one UAB currently uses to track this information in the Master's Program in Biomedical Science Program, currently offered by the Dept. of Cell, Developmental and Integrative Biology. Additional follow-up will specifically be as follows:

- Student program surveys will be sent to current students annually to determine their overall satisfaction with the program as well as perceived strengths and weaknesses.
- Anonymous faculty surveys will be collected annually to measure the perceived strengths and weaknesses of the program and areas of improvement.

- Each semester students will complete student ratings for each course that is tailored to ensure learning objectives are met.

- Exit interviews will be performed before graduation and will allow the program to gather data regarding the student's overall perception of program effectiveness and the placement of graduates.

Administration: The program will be administered by the School of Medicine, Dean, Dr. Selwyn Vickers, M.D.; Department of Cell, Developmental and Integrative Biology, Chairperson; Dr. Bradley Yoder, Ph.D.

Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). A total of four votes were received; all four recommended program approval.

Accreditation: There is currently no accreditation agency associated with anatomy education, or educational research as described in this proposal.

The proposed curriculum will meet all of the requirements for credentialing an introductory level anatomy instructor as detailed by HAPS.

Curriculum: The master's degree curriculum is being proposed as a 30-31 credit-hour degree.

Program Completion Requirements:

Credit hours required in major courses:	19
Credit hours required in minor:	11-12
Credit hours required in support courses:	N/A
Credit hours in institutional general education or core curriculum:	N/A
Credit hours in required or free electives:	N/A
Credit hours for thesis:	N/A
Total Credit hours:	**30-31**

The anatomy master's course includes concentrations in anatomy (anatomy core) and education (education core). The anatomy core content will be the same for all students at this time. There are plans to expand the anatomical sciences offerings to allow more student choice/electives in the future. These may include more detailed courses in radiology, evolutionary biology/comparative anatomy, anatomical variation/clinical anatomy, or anatomical illustration. The education core also currently includes more choices. The CIRTL Associate Certificate program allows students to choose some of the content to fulfill the education core degree requirements, based on their needs and interest. All students will take two required plus one elective pedagogy courses to meet the degree requirements and have the option of taking additional CIRTL courses if desired.

Collaboration: At present UAB does not plan to collaborate with other institutions. The curriculum UAB is proposing is highly specialized requiring very specific facilities, (i.e., gross anatomy lab), which are not commonly found in most institutions. UAB does have a collaboration with the CIRTL Institute within UAB, and strong collaborations with the Schools of Medicine, Dentistry, Optometry and Health-related Professions. Graduate students in this program will be working with students in these schools as part of the educational practice requirement.

Distance Education: Ten to Thirteen percent will be distance education depending on chosen CIRTL content. Many CIRTL courses offer on-line and on campus courses. Students may choose those courses that best fit their schedule and interests. Content in the anatomy core must be taken on campus, as there is no alternative for learning lab content, i.e. dissection skills, online.

Admissions: Students with a terminal degree (PhD or MD) are preferred. The program is designed for students with an existing terminal degree in a traditional research life or medical science who wish to improve their teaching credentials in anatomy; however, consideration will be given to students with

lesser degrees earned, (e.g., an MS in a basic science), but otherwise strong qualifications, and a specific need for UAB's course content.

Need: UAB is the major trainer of biomedical research-oriented professionals in the state of Alabama. However, the challenging funding climate (flat or declining NIH budgets), combined with decreasing numbers of available faculty positions, have significantly reduced the number of doctoral-level graduate students who progress to independent academic research-oriented positions nationwide. Of approximately 315 doctoral students currently enrolled in the Joint Health Sciences at UAB, it is estimated that less than 25 (or 8 percent) are likely to ultimately enter faculty-level research careers.

Meanwhile, health-care occupations are expanding by double digits; according to the US Bureau of Labor Statistics, some occupations, such as physician assistants and physical therapists, job growth rates are predicted to exceed 30 percent from 2014-2024. There is thus a growing demand for courses leading to qualifications in the health-care related professions nationwide and in Alabama. In response to this demand, 2 new osteopathic medical schools (ACOM, Dothan; and VCOM, Auburn) and a new School of Health Professions, (Samford University, Birmingham), have recently been established in the state, in addition to increased enrollment in previously established programs, (e.g., in medicine at UASOM and the PA program in the School of Health Professions at UAB). In general, it is estimated that health care will account for one-third of new jobs between 2014-2024. These increases require increased infrastructure support to fill the student demand for such programs. Although the majority of clinically relevant health-care focused programs require some student exposure to the anatomical sciences, the number of individuals qualified to teach gross anatomy and the associated disciplines of embryology and histology at the college level are steadily shrinking due to faculty retirements and lack of appropriate training opportunities. The program proposed in this application aims to fill this gap by training recent graduate students to undertake these highly specialized educational roles and opportunities.

Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	1	1	1	1	1	5
State	2	2	2	2	2	10
SREB	115	117	119	122	124	597
Nation	326	332	339	346	353	1,696

Data for Year 1 in the above table were obtained from reviewing current job openings posted on the websites of the American Association of Anatomists, the American Association of Clinical Anatomists and Indeed.com. Search terms were "anatomy" and "anatomy faculty". Each posting was reviewed individually to ensure that the posting was for a faculty level appointment (full-time, part-time or adjunct) at the community college level or above. Multiple duplicate postings for tutors and on-line instruction were ignored, as were positions that were primarily research-oriented. All local, Alabama, and SREB states were searched individually, and the advertised positions totaled to determine the above numbers. Data for Years 2-5 were calculated using a very modest 2 percent increment per year. The Bureau of Labor Statistics (www.bfs.ggy) does not have a separate employment category for anatomists or anatomical scientists. However, according to the proposal, the 2 percent growth rate assumed is most likely an underestimate; the BLS estimate for job growth for post-secondary teachers (all subjects) is 13 percent.

Student Demand: An anonymous SurveyMonkey "Needs Assessment' survey was conducted of STEM graduate students currently enrolled at UAB. This survey was distributed with the help of the UAB Graduate School, to ensure that it was delivered to all graduate (i.e., Master's and Ph.D.) students. In

addition to the collection of basic demographics, the questions asked whether respondents had ever considered teaching as a post-graduation career, and ranked interest in several areas including anatomy, education, and the use of on-line courses.

UAB collected 519 responses from 5,800 students polled, a response rate of 8.9 percent. Of these, 71 percent were current Master's students and approximately 26 percent were Ph.D. students; this probably reflects the greater enrollment of Master's students as opposed to those pursuing Ph.D. degrees. Approximately three-quarters of the respondents stated that they were either somewhat interested in teaching, considering teaching or were enthusiastic about teaching following graduation; when asked where they saw themselves in 20 year's time, 30 percent of respondents stated that they saw themselves teaching at a community college, liberal arts school or at a university. Only 17 percent of respondents had previously considered anatomical sciences as a future career path, but 21 percent wanted to find out more, while 7 percent or 37 students were excited to find out more. Approximately 71 percent of the respondents felt positively about the inclusion of on-line courses, and 42 percent were attracted by the combining of courses in anatomical sciences and education.

Resources:
Faculty:
Current Primary Faculty—
Full-time: 2
Part-time: 0
Support Faculty—
Full-time: 5
Part-time: 0

Additional Faculty to Be Hired:
Primary Faculty—
Full-time: 0
Part-time: 0

Support Faculty—
Full-time: 0
Part-time: 0

Support Staff: No additional support staff are anticipated to be needed.

Assistantships: No assistantships or fellowships are planned for students in the proposed program.

Equipment: There will be no need for new equipment.

Facilities: There will be no need for new facilities.

Library: The Lister Hill Library of the Health Sciences, established in 1945, is the largest biomedical library in Alabama and one of the leading such libraries in the South. It serves as a Resource Library in the National Network of Libraries of Medicine for the Southeast/Atlantic region. The collections of the library span seven centuries of knowledge with medieval manuscripts, 12,000 old and rare books, 100,700 circulating monograph titles and 28,000 electronic full text journals in in the various health science disciplines. Access to electronic resources is available across the campus and remotely to students and faculty.

As a member of the Consortium of Southern Biomedical Libraries (CONBLS), Lister Hill as access to interlibrary loan activity, cooperative purchasing and licensing of electronic resources, and supporting mutual interests in health sciences librarianship. Other Lister Hill cooperative agreements include the Alabama Public Library Service, Health InfoNet of Alabama, The National Network of Libraries of Medicine, and the Network of Alabama Academic Libraries. The Mervyn H. Sterne Library, the general library for the University, contains one million books and media and subscribes to over 2,500 periodicals

pertaining to chemistry, physics, mathematics, and the biological sciences as well as to topics in the social sciences and the humanities.

There are also 884,222 microfiche and microfilm copies of books, reports, etc. The Sterne Library has a System computer search program that augments those used by the Lister Hill Library. Both libraries provide inter-library loan services. These 2 libraries currently support the needs of a graduate program in Biomedical and Health Sciences and no deficiencies are noted.

In terms of anatomy and related topics, the library subscribes to 28 specialist journals (via electronic or open access), including the Anatomical Record, Journal of Anatomy, Journal of Molecular Histology, Journal of Embryology and Experimental Morphology, Frontiers in Neuroanatomy, Ultrasound in Medicine and Biology, Applied Radiology and Anatomical Sciences Education. A further 17 textbooks are available as either electronic or print editions, including those used most commonly in the medical school, e.g., Clinically Oriented Anatomy, Grant's Dissector, and Sectional Anatomy by MRI and CT. In addition, the library holds 4 separate video databases, of which Acland's Video Atlas of Human Anatomy and Anatomy. TV are key components.

Program Budget: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $264,600 will be available from tuition.

Attachment 3

Curriculum
Master of Science in Anatomical Sciences Education
University of Alabama at Birmingham

Course Number and Title	Number of Credit Hours	* If New Course
EDUCATION CORE (comprising the CIRTL Associate Certificate Program, a specific anatomy teaching practicum, and an anatomy research project, (lab or educational-research based)	11-12	
GRD 716- Developing a Teaching Portfolio (**online**, Summer)	2	
GRD 750- CIRTL Teaching & Learning Seminar I (Summer on campus)	1	
Choose 1 of the following pedagogy courses:		
GRD 752 Introduction to Evidence-Based STEM Teaching (2 credits) (Summer OR Fall; **online**) **GRD 754** Advanced Evidence-Based STEM Teaching (2 credits) Spring **online**. **GRD 756** The College Classroom (2 credits) Spring **online.** **GRD 705** Teaching at the College Level (3 credits) Spring, Summer on campus.	2-3	
XXX-XXX (Call numbers awaiting assignment)* Teaching Practicum - students will act as supplemental instructors in a variety of anatomy lab courses, complete their own (or in teams) whole-body prosection, and prepare and present 2-3 hours of new lecture content for anatomy. (Spring, on campus)	3	*
XXX-XXX (Call numbers awaiting assignment)* Research Project – Students will develop an original research project in medical education, clinical anatomy, or other anatomy research. Students will be evaluated on their ability to formulate an anatomically relevant research question, review the existing literature, and communicate their findings via a poster or oral presentation to department.	3	*
ANATOMY CORE (comprising both currently taught courses in anatomical sciences in the Physician Assistant, Medical, Dental and Graduate Schools at UAB as well as new courses in Head and Neck Anatomy, Embryology, and Medical Imaging under development)	19	
PA 601/PA 601L Human Gross Anatomy with Lab. Course provides a comprehensive survey of the gross anatomy of the human along with functional and applied anatomy as it relates to common clinical findings. It utilizes a lecture format and cadaver dissection laboratory sessions. (Fall, on campus)	5	
XXX-XXX (Call numbers awaiting assignment)* Gross Anatomy Supplement. This is a new course under development for the Anatomical Sciences Education MS. This course will provide students with detailed dissections of head and neck, and pelvis and perineum anatomy that are not	2	*

otherwise covered in existing courses. Lecture content will be deployed using a 'flipped classroom' model, requiring a high level of student engagement and self-directed learning. Students will be assessed on their ability to complete dissections and communicate findings to course instructors. (Fall, on campus)		
GBS 718- Graduate Histology Course. This course will cover the specialized cell biology and microscopic anatomy for each of the mammalian organ systems, as well as consider current research with regards to each system. The objective is to understand how cells organize into tissues and organ systems and how these systems function in the body, as well as appreciate the microscopic appearance of cells, tissues and organs. (Spring, on campus)	3	
DENT 1255 - Neuroscience The course provides the student with a balanced basic science view of the structure and function of the nervous system. The course is designed to provide students with a comprehensive overview of the nervous system from molecular to behavioral levels. The inclusion of relevant clinical correlations is designed to facilitate the students' understanding of the function of the normal nervous system and to provide an overview of the clinical neurosciences. (Spring, on campus)	6	
XX-XXX (Call numbers awaiting assignment)* Human Embryology. This course uses didactic lectures, lab exercises, and student presentations to help students gain an understanding of the major events in human development from gastrulation to birth. Individual units focus on the developmental processes of specific organ systems. The course uses an anatomical focus to describe the morphological characteristics of the developing embryo/fetus. The biochemical and molecular biology of development are only briefly discussed. Morphology and anatomy are also related to clinical presentation of birth defects. (Summer, on campus).	2	*
XX-XXX (Call numbers awaiting assignment)* Medical Imaging – This course is a modification of an existing SOM elective. In this course, students will learn to obtain and interpret ultrasound images by practicing techniques on classmates and reading existing ultrasound images. Other radiograph images (X-ray, MRI,) will also be used to help students understand planar anatomy and its relationship to 3D anatomy. Students will learn the basics of the technology behind the different medical techniques to provide a fuller understanding of image interpretation. (Fall, on campus).	1	*
Summary of Credit Hours (see APPENDIX C for year-long visualization of courses.) **Summer of Year One-** 3-6 CIRTL, begin research **Fall-** 8 Anatomy, up to 2 in CIRTL, continue research **Spring -** 12, Anatomy and teaching practicum **Summer of Year Two –** 2 Anatomy, 3 research/presentation		
TOTAL credit hours- varies based on CIRTL course choices.	30-31	

*First available date for assignment of call numbers is September 2017

Sample Timeline of Program Progression

Sample Curriculum (courses in parentheses are electives*)				
	YEAR 1		YEAR 2	
Term	**Summer**	**Fall**	**Spring**	**Summer**
Courses	GRD 716 2 h	PA 601/601L 5 h	DENT 1255 (Neuroscience) 6 h	XXX Embryology 2 h
	GRD 750 1 h	XXX Head and Neck 2 h	GBS 718 Histology 3 h	Research Final Semester 3 h
	(GRD 752) (2 h)	XXX Imaging 1 h	XXX Teaching Practicum 3 h	
	(GRD 705) (3 h)	(GRD 752) (2 h)	(GRD 754) (2 h)	
	Research Project	Research Project	(GRD 756) (2 h)	
			(GRD 705) (3 h)	
			Research Project	
Hours	3 - 6	8 - 10	12 -15	5
Cumulative hours		11 - 13	25 - 26	30 - 31
Semester themes and goals	Introduce principles of educational theory, research and practice.	Provide foundation of anatomy, with cross-sectional and radiological correlations	Continue building on gross anatomy foundation with neuroanatomy and histology; include teaching practicum	Add further anatomy skills, (embryology and imaging); present research

* 1 CIRTL elective in addition to GRD 716 and GRD 750 is required for the CIRTL Associate Certificate;

Attachment 4
Letter from Dr. Etty Benveniste, Senior Associate Dean for Research Administration,
UAB School of Medicine

UAB SCHOOL OF MEDICINE
Office of the Senior Associate Dean for Research Administration and Development

July 18, 2017

Catherine M. Fuller, Ph.D.
Vice-Chair and Associate Professor
Dept. of Cell, Developmental and Integrative Biology
MCLM 830
Birmingham, AL 35294

Dear Cathy:

I am writing in enthusiastic support of your proposal to develop a Master's of Science program in Anatomical Sciences and Education in the Department of Cell, Developmental and Integrative Biology (CDIB). There is an increasing student demand for programs that lead to health-care focused careers, and this sector is predicted to grow substantially over the next 10-20 years. Knowledge of the anatomical sciences is fundamental to these programs, but individuals trained in this area are becoming increasingly hard to identify, and the demand clearly outstrips the supply. I am therefore very pleased to see that you are addressing this issue by developing this new program to train these highly specialized and somewhat rare educators.

The strength of this program not only lies in the comprehensive training students will receive in all aspects of both gross/cadaver-based and microanatomy, but also in the utilization of CIRTL courses to provide specific training for teaching at the college level. I understand that these students will have intensive 1-on-1 training in many instances and will have the opportunity to teach within the many courses that the CDIB department offers in the professional, graduate and undergraduate schools, as part of a teaching practicum. This educational aspect will be attractive to many students and differentiates this program from others that do not have the same access to CIRTL courses as we do at UAB. I would anticipate that graduates of this program would easily find employment at medical, dental, optometry and osteopathic schools throughout the country, in addition to undergraduate institutions. As your team of anatomical educators is highly qualified and regarded, this dispersal of rigorously trained individuals can only help to enhance the reputation of UAB for innovative leadership. Furthermore, this program will provide an additional career opportunity for graduate students who do not wish to pursue a career in academic research, but want to continue to work in an academic environment. In summary, I fully support your proposal for a new MS Program in Anatomical Sciences and Education, and wish you and your team success in your efforts.

Sincerely yours,

Etty (Tika) Benveniste, Ph.D.
Senior Associate Dean for Research Administration, SOM
Associate Vice President for Medicine and Basic Sciences
Charlene A. Jones Endowed Chair in Neuroimmunology
Professor, Department of Cell, Developmental and Integrative Biology
Co-Director, UAB Multiple Sclerosis Center
Associate Director, Basic Science Research • Comprehensive Cancer Center
University of Alabama at Birmingham (UAB)

1220 Faculty Office Tower
510 20th Street South
205.996.7452

The University of
Alabama at Birmingham
Mailing Address:
FOT 1220
1720 2ND AVE S
BIRMINGHAM AL 35294-3412

Attachment 5
Letter from Dr. Janelle M. Chiasera, Chair and Professor,
Department of Clinical and Diagnostic Sciences, UAB School of Health Professions

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Knowledge that will change your world
School of Health Professions

July 18th 2017

Catherine M. Fuller, Ph.D.
Vice-Chair and Associate Professor,
Dept. of Cell, Developmental and Integrative Biology,
MCLM 830
1720 2nd Ave. S.
Birmingham, AL 35294

Dear Dr. Fuller:

I am writing this letter in support of your proposal to develop a Master's of Science program in Anatomical Sciences and Education in your department. Anatomy, Physiology and Pharmacology have been, and will continue to be, foundational courses in a variety of our health-related programs, including some of our largest enrollment programs such as Physician Assistant Studies, Biomedical and Health Sciences, and Biomedical Sciences. We have seen a very steep increase in enrollment within our programs and maintaining quality within these foundational courses has become challenging. We have struggled with finding faculty within our programs and department to support teaching these courses and, as a result, we have collaborated with Joint Health Sciences to support hiring an anatomy faculty member so that a pool of qualified educators are available to support our needs. Being involved with that process external to our department helped me realize that the issue runs much deeper. It is clear that the demand for these highly trained individuals clearly outstrips the supply available. I am therefore very pleased to see that you are addressing this issue by developing this new program to train these highly specialized educators.

I have reviewed your curriculum and applaud you for taking a dual approach to its development. Coupling a strong background in gross/cadaver-based anatomy and microanatomy with the theory of how to be an effective teacher (CIRTL courses) is not only unique, but it will equip your program graduates to be effective educators across varying levels of instruction (professional, graduate and undergraduate). This is essential for us as many of our students use this foundational information to build clinical competency. The required teaching practicum providing one-on-one training for your students is also a unique aspect of your program and one that I feel will be a selling point to potential students.

Having worked closely with your anatomists, I have experienced the quality of instruction that they provide and know how highly regarded they are by our own faculty and students. You have the right team in place with strong content expertise and educational experience to support this educational endeavor. I fully support your proposal for a new MS program Anatomical Sciences and Education, and wish you success in your efforts.

Sincerely,

Janelle M. Chiasera, PhD
Chair and Professor

Department of Clinical and Diagnostic Sciences
Office of the Chair
431 School of Health Professions Building
1705 University Blvd
Phone:205-975-3111
Fax: 205-975-7302

Attachment 6
Letter from Dr. Lori L. McMahon, Dean, Graduate School, Jarman F. Lowder Professor of Neuroscience, Director of the UAB Comprehensive Neuroscience Center

UAB GRADUATE SCHOOL

Knowledge that will change your world

July 18th 2017

Catherine M. Fuller, Ph.D.
Vice-Chair and Associate Professor,
Dept. of Cell, Developmental and Integrative Biology,
MCLM 830
1720 2nd Ave. S.
Birmingham, AL 35294

Dear Cathy:

I am thrilled about the plan to develop a Master of Science degree in Anatomical Sciences and Education at UAB, and I applaud your leadership and insight. Training in the field of anatomy has significantly waned in the past 2-3 decades, resulting in a shortage of experts in this content area. A full understanding of human anatomy is fundamental to any clinical professional or research career in the health sciences. Because the demand for individuals trained in the health sciences will continue to increase over the next 1-2 decades, there is significant need for expertise in anatomical sciences and education to serve as faculty and course instructors in this discipline. It is terrific that your program will fill this gap through the specific education and training the students will receive in this highly specialized area.

The curriculum you have developed has many strengths in that it blends comprehensive training in gross/cadaver-based anatomy and microanatomy, with specific training in teaching at the college level through courses offered by the UAB Center for Instruction in Research, Teaching, and Learning (CIRTL). In addition, the intensive 1-on-1 training provides enhanced instruction to students in this program and they will perfect their teaching skills through opportunities to lecture in courses taught to UAB students in professional, graduate and undergraduate programs. The required teaching practicum provides outstanding strength to this degree program. It is important to note that the opportunities that you will provide to your students through CIRTL courses differentiates your program from those at other institutions where this curriculum does not exist.

Clearly, graduates from the MS in Anatomical Sciences and Education, will be highly desired by medical, dental, nursing, optometry and osteopathic schools throughout the country, in addition to undergraduate institutions. It is expected that students trained in many health related fields will be interested in this new degree program, and will include those with PhD training in biomedical science who wish to have an academic career in a field other than research. The talented team of anatomical educators you have assembled together with the powerful curriculum will generate rigorously trained graduates from this program who will further enhance the reputation of UAB for innovative leadership and education. In summary, this is an outstanding, unique graduate program, and I fully support your proposal. I wish you great success, and please reach out to me for assistance as needed when you are ready to implement this training programs

With best wishes,

Lori L McMahon

Lori L. McMahon, Ph.D.
Dean, Graduate School
Jarman F. Lowder Professor of Neuroscience
Professor, Cell, Developmental And Integrative Biology
Director of the UAB Comprehensive Neuroscience Center
University of Alabama at Birmingham

DECISION ITEM UAB-3: University of Alabama at Birmingham, Master of Science in Data Science (CIP 11.0401)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The proposed MS in Data Science program is intended for students and professionals who wish to acquire knowledge and skills for solving real-world problems that involve exceptionally large volumes of datasets. In this program students will be equipped with essential skills in data science and analytics, including how to apply methods and technologies required for making strategic decisions, critical skills for collecting and managing massive datasets, fundamental techniques for modelling and quantitative analysis of massive datasets, and skills with implementing efficient solutions to real world problems that arise from all fields of scientific inquiries, and business and financial operations, using the most appropriate algorithmic techniques and software development tools available. In addition, students will further develop and enhance essential skills for effective communication both orally and in a written form.

With the ever-increasing use of big data analytical techniques and software in many aspects of life, societies, scientific inquiries, engineering and business, data science and analytics are becoming an integral part of many fields of study. This new degree will give students a unique opportunity to combine their cross-disciplinary interests in data science and other disciplines such as business analytics and cybersecurity and maximize their career prospects.

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama at Birmingham (UAB).

Mode of Delivery: Conventional lecture-based instruction will be used to deliver this program. Some of these courses also have laboratory components.

Similar Programs: The UA (Tuscaloosa) business school has a Business analytics concentration in their MBA program with a CIP code 52.5201 and UAH has a MS program in Management Science — Business Analytics with a CIP code 52.1301. UAB's proposed new MS program is different from these above two programs in that (1) it is a joint program between the Department of Computer Science and the School of Business, and (2) it is a full-fledged MS degree program with an emphasis and strong focus on both business intelligence and solid computational skills that are much needed in solving real business problems using advanced analytics techniques for massive datasets. There are 16 programs at this level in other SREB states that have similar titles to the proposed program.

Collaboration: UAB is not aware of any active full-fledged MS program in Data Science in the ACHE Academic Program Inventory. Both the MBA concentration at UA and the MS in Management Science at UAH are solely offered by their Business school and do not focus on building a solid foundation in the computing and information management skills necessary for data scientists/analysts. Neither of them have the same CIP group code as this proposed MS program. Where opportunities should arise, UAB would be willing to collaborate with other institutions.

Resources: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $305,100 in new funds will be available from tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. There is a need for a full-fledged MS program in Data Science at a major university in Alabama.

2. UAB has a strong Computer Science faculty with interdisciplinary strengths in data science (e.g., digital and social network analysis, business intelligence, information extraction and knowledge discovered from unstructured data ophthalmology, security and privacy research with business and law enforcement, data modeling and quality management in medicine and health care.)

3. Birmingham is becoming a business and technological hub of south, with many startups and a strong demand for combined expertise in computer science knowledge and domain knowledge driven particularly by its biomedical and banking economy, both of which increasingly embrace and require data science and analytical techniques.

DECISION ITEM UAB-3: University of Alabama at Birmingham, Master of Science in Data Science (CIP 11.0401)

Staff Presenter: Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed Master of Science in Data Science.

The program will have the implementation date and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning 2018-19, will be at least 5 based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 5, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in continuing in related graduate work.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of Alabama at Birmingham (UAB) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Letter from Mr. Brian Hilson, President and CEO, Birmingham Business Alliance, attached.

5. Letter from Mr. Jay Gilmer, IBM Client Executive for UAB, attached.

6. University of Alabama at Birmingham program proposal, received September 15, 2017. Available upon request.

7. "Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of Alabama at Birmingham

PROGRAM: Master of Science in Data Science (CIP 11.0401)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2010-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$32,400	$62,100	$67,500	$67,500	$75,600	$305,100
TOTAL	$32,400	$62,100	$67,500	$67,500	$75,600	$305,100

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT *	4	9	10	10	11	9
NEW ENROLLMENT HEADCOUNT	4	5	5	5	6	5
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	4	5	5	5	5

*All Students are full-time.

Attachment 2

Summary of Background Information

Master of Science in Data Science
University of Alabama at Birmingham

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama at Birmingham (UAB).

Description and Objectives: Upon completion of this program, the graduate will be able to:

- Learn the fundamentals of data analytics and data science methodologies;
- Develop competency in big data programming using state-of-the-art software tools including those in Python, R, SAS, and Hadoop;
- Store and manage massive datasets using a variety of technologies ranging from traditional relational databases to cloud and web-based systems;
- Master basic software engineering practices and understand how they enable reproducible analyses that can be scaled up to handle big data;
- Apply statistical methods, regression techniques, machine learning algorithms and other techniques to make sense of data and extract knowledge from massive datasets;
- Effectively communicate big data problems and their most appropriate solutions disparate groups of stakeholders.

Assessment: Ongoing evaluation of the MS program and graduate outcomes will be the responsibility of the Chair of the Department of Computer Science and the Director of Graduate Programs of the Department. UAB uses WEAVE Online as its assessment software. A new assessment template for the MS in Data Science program will be created which will include program goals, objectives, and measures. This WEAVE profile will be monitored and updated annually by the Director of Graduate Programs. The Departmental Graduate Curriculum Committee will regularly consider curriculum and student performance to determine areas for improvement in curriculum, preparation, and learning outcomes. Graduating students will fill out an exit questionnaire that will allow us to get recommendations for improvement from the student.

A follow-up plan to determine accomplishments of graduates such as obtaining relevant employment or being admitted to a masters or doctoral program (graduate or professional) will be implemented. A LinkedIn page will be created for this program, and students will be asked to create their profile (if they have not done so yet) and follow this page. This way UAB will foster an environment for MS in Data Science graduates to stay connected with the program through LinkedIn. UAB states that this will allow the program to track their employment and any doctoral education they may pursue. UAB will also gather and track data from the UAB Linked In page that provides employment data about UAB graduates.

Administration: The program will be administered by the College of Arts and Sciences (CAS), Dean, Dr. Dr. Robert E. Palazzo; Department of Computer Science, Chairperson, Dr. Yuliang Zheng.

Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). A total of two votes were received; both recommended program approval.

Accreditation: UAB states that they are not aware of any accrediting body for MS programs in data science or data analytics.

Curriculum: The master's degree curriculum is being proposed as a 30-credit-hour degree.

Program Completion Requirements:

Credit hours required in major courses:	12
Credit hours required in support courses:	N/A
Credit hours in institutional general education or core curriculum:	N/A
Credit hours in required or free electives:	18
Credit hours for thesis:	N/A
Total Credit hours:	**30**

This proposed program will share courses with the existing Master in Computer and Information Sciences (MS CIS) housed in the Department of Computer Science. Some existing courses for Master of Business Administration (MBA) and Master in Management Information System (MS MIS) housed in the Collat School of Business at UAB, especially those on business intelligence and quantitative analysis, may be of interest to students in the new MS program.

Collaboration: UAB is not aware of any active full-fledged MS programs in Data Science in the ACHE Academic Program Inventory. Both the MBA concentration at UA and the MS in Management Science at UAH are solely offered by their Business school and do not focus on building a solid foundation in the computing and information management skills necessary for data scientists/analysts. Neither of them have the same CIP group code as this proposed MS program. Where opportunities should arise, UAB would be willing to collaborate with other institutions.

Distance Education: Conventional lecture-based instruction will be used to deliver this program. Some of these courses also have laboratory components. UAB does not initially plan to create new distance learning courses specifically for this program. Several courses in Department of Computer Science are currently offered online and could be taken by students to fulfill part of the degree requirements.

Admissions: Program prerequisites include a bachelor's degree in any field. Demonstration of competency in basic skills in math and computer programming must be achieved by prior experience and/or education. Applicants are expected to have taken college-level calculus I and II, a computer programming course (or 2 years of IT working experience) taught in any 3rd generation programming language such as Python, Java, or C/C++, and an object-oriented software development course (or equivalent industry working experience), and have received C and above in the course. Equivalent courses at UAB that can fulfill the pre-requisites are MA 125, MA 126, CS 103, and CS 203.

These minimum requirements are based on the prerequisites of the courses in the proposed program, and the common bridging courses suggested/required by existing MS programs in Data Science/Analytics nationwide. Three sets of pre-requisite skills are commonly identified by those programs: basic math, programming, and statistics. Programming is an essential skill for a data scientist but one does not need to be a hard-core programmer to learn data science. Having familiarity with basic concepts of object-oriented programming and software development will ease the process of learning data science programming tools. MA 125 and 126 address the math need. CS 103 and CS 203 will address the programming needs, and the need for statistics will be addressed and covered in one of the core courses (CS 685 Foundations of Data Science) of the proposed program.

Need: Data on the local (Birmingham Metropolitan), state, SREB, and national employment market is based on the U.S. Department of Labor's Bureau of Labor Statistics (BLS) Occupational Outlook Handbook, which lists projected job growth from 2014 to 2024. Within the category 'Computer and Information Technology Occupations', the subcategory "Computer and Information Research Scientists" is the one most relevant to data scientists/analysts and requires a professional or doctoral degree in computer science or a computer-related field, with a total of 25,600 jobs in 2014 and a projected growth of 11 percent over this 10-year period.

Two other closely related subcategories are Database Administrators and Operation Research Analysts, with a projected growth of 11 percent and 30 percent over the same 10-year period, respectively, and a

total of 211,300 jobs in 2014. Since we are past 2014, a conservative estimate of the growth over the next 5 years is 5.5 percent, 5.5 percent, and 15 percent for the above three subcategories, or approximately 21,705 new jobs in total. For simplicity, UAB split the state, SREB, and national job growth equally over the next five years.

These data scientist/analyst jobs are high quality, high paying jobs. Median pay in 2012, based on BLS data, for the above three subcategories is $90,320. For the subcategory of 'Computer and Information Research Scientists' that require either a professional or doctoral degree, the median pay is $110,620. As another point of information, according to the Preliminary 2018 SOC definitions (https://www bls.gov/soc/2018/soc 2018,htm), a new code, "Data Scientists," is to be added to the Standard Occupational Classification in 2018, again indicating the fast growth of this field.

Career and College Readiness/ Preparation - Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	11	11	12	12	12	58
State	51	51	51	51	51	255
SREB	1,661	1,661	1,661	1,661	1,661	8,306
Nation	4,341	4,341	4,341	4,341	4,341	21,705

Student Demand: Enrollment projections are derived from the completion data of similar programs (Masters' level with the CIP codes of 11.0401 and 52.13) nationwide for the academic year 2015-16. Data is downloaded from the National Center for Education Statistics (https://nces.ed.qov/ipeds/datacenter/).

UAB identified 109 Masters' programs under the CIP code of 11.0401 and 77 Masters' programs under the CIP code of 52.13 that have students completing the program during the year 2015-16. The reason to include 52.13 (Management Science and Quantitative Methods) is that similar programs sometimes are housed in the Business School because of its multidisciplinary nature. The average completion number among all 186 programs is 47 and the median completion number is 21. With Birmingham being in the metropolitan area and there being rapid growth in need for data analysts, UAB asserts that it is safe to assume that the proposed program will grow to at least half of the median size, given the current faculty size and the 100 percent retention rate of MS students in the UAB Computer Science department.

UAB states that it will take time to reach equilibrium at this enrollment, and so UAB will begin with 4 students for the 1st year and gradually increase the enrollment through years 1-5. Since it is a two-year program, UAB projects a total enrollment of 15-20 students once the program growth stabilizes after the first three years. To justify this projected number, UAB also looked at a peer school - the University of North Carolina at Charlotte (UNCC). At its launching year 2014, the program enrolled 15 students in total. The following year saw 61 enrollments and the consecutively year 2016 saw 86 enrollments. UAB expects our growth path would be very similar to that of UNCC.

Resources:
Faculty:
Current Primary Faculty—
Full-time: 9 (Computer Science)
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0
Additional Faculty to Be Hired:

Primary Faculty—
Full-time: 0
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Support Staff: No additional support staff are anticipated to be needed.

Assistantships: No assistantships or fellowships are planned for students in the proposed program.

Equipment: There will be no need for new equipment.

Facilities: There will be no need for new facilities.

Library: As the major academic research library for UAB, Sterne Library meets the informational needs of the university community and supports opportunities for collaborative learning, cultural activities, and social engagement for all users through access to content resources and the innovative use of technology. Sterne Library houses a collection of over one million items to support teaching, scholarship, research, and service.

In addition to the collection housed at Sterne Library, faculty and students at UAB have access to materials at several other area institutions such as Birmingham Southern College, Samford University, and the University of Montevallo as part of UAB's membership agreement with the Birmingham Area Consortium for Higher Education. Through UAB's reciprocal borrowing agreements, faculty and students have access to materials at universities throughout the state including Auburn University and the University of Alabama. Through UAB's membership in the Association of Southeastern Research Libraries and with support of the OCLC cooperative, UAB users have access to information resources from across the region and from around the world. Reference librarians build and maintain the collection based on the university's academic programs and faculty's research topics. Reference librarians use traditional selection tools and collaborate with department faculty members.

According to guidelines established for collection assessment, which measure both the extent of existing library holdings and the ongoing collecting activity in subject fields in terms of academic level, master's programs such as the one in Data Science are rated at the advanced study level. This level includes a wide range of basic monographs both current and retrospective, a selection of representative journals, reference materials germane to the subject, and access to appropriate databases. Monograph purchases and journal subscriptions in Data Science are included in current library acquisitions supporting the UAB Computer Science and Business programs.

In addition, Sterne Library's collections and services have been approved by the Accreditation Board for Engineering and Technology (ABET) as part of the accreditation process for the UAB Department of Computer Science and by the Association to Advance Collegiate Schools of Business (AACSB) as part of the accreditation process for the UAB Collat School of Business.

Sterne Library's collection includes over 1,150,000 monograph titles, 40,000 periodical subscriptions, and 200 databases supporting the university programs of instruction and research. Materials in data science are a small subset of this collection, but when combined with materials related to UAB's Computer Science and Business programs, would support the MS in Data Science.

The following subject classifications for monographs support the areas involved with the proposed master's program: computer science (11,481 items), computer networks (3,454 items), artificial intelligence (877 items), information systems (3,340 items), marketing (5,097 items), business intelligence and forecasting (1,483 items), and business statistics (1,184 items). Sterne Library recently purchased electronic book packages in computer science from Elsevier containing 250 additional items with many titles relevant to the required courses and electives.

The following journal packages support the areas involved with the proposed master's program: ACM Digital Library, IEEE Xplore Digital Library, Elsevier Science Direct, Springer Link, and Wiley Online Library.

The following databases support the computer science areas involved with the proposed master's program: Academic Search Premier, Applied Science and Technology Full Text, and Scopus. The following databases support the business areas involved with the proposed master's program: Business Source Premier, Business Abstracts with Full Text, Business Insights, ABI/INFORM Collection, and IBIS World.

Program Budget: The proposal projected that a total of $0 in estimated new funds will be required to support the proposed program. A projected total of $305,100 will be available from tuition.

Attachment 3

Curriculum
Master of Science in Data Science
University of Alabama at Birmingham

Course Number and Title	Number of Credit Hours	* If New Course
4 Core Courses		
CS 685 Foundations of Data Science	3	
CS 510 Database Management Systems	3	
CS 667 Machine Learning	3	
CS 652 Advanced Algorithms and Applications	3	
Electives (Select 6)		
CS 616 Big Data Programming	3	
CS 633 Cloud Computing	3	
CS 636 Computer Security	3	
CS 660 Artificial Intelligence	3	
CS 663 Data Mining	3	
CS 665 Deep Learning	3	
EC 520 Applied Forecasting	3	
MBA/IS 616 Web Analytics	3	
MBA/IS 617 Introduction to Business Intelligence	3	
MBA 658 Applied Marketing Research	3	
MBA 662 Quantitative Analysis for Business Managers	3	

Attachment 4
Letter from Mr. Brian Hilson, President and CEO, Birmingham Business Alliance

birminghambusinessalliance

January 13, 2017

Dr. Yuliang Zheng
Professor and Chair
Department of Computer and Information Sciences
University of Alabama at Birmingham
CH115, 1300 University Blvd.
Birmingham, AL 35294-1170

Re: Master's Program in Big Data at UAB

Dear. Dr. Zheng:

The Birmingham Business Alliance (BBA) is fully supportive of your plan to establish a Master's Degree program in Big Data Analytics at the University of Alabama at Birmingham. We understand that this innovative program to be jointly offered by UAB's Business and Computer Science Departments and will serve as an important source of Big Data talent for Birmingham employers. It will also support the workforce needs of employers outside of the Birmingham region.

The BBA has been collaborating with UAB on workforce development programs, recognizing that our common objectives of helping employers meet their workforce needs, and helping our community meet its economic development goals, requires such a partnership. We view your plan for this new Master's program as an important component of our regional talent development strategy.

We congratulate you on your initiative to establish a Master's Degree program in Big Data at UAB. You can be assured of the BBA's support as you move forward.

Sincerely yours,

Brian Hilson
President and CEO
Birmingham Business Alliance

Cc: Dr. Ray Watts
Waymond Jackson

Attachment 5
Letter from Mr. Jay Gilmer, IBM Client Executive for UAB

January 31, 2017

IBM Corporation
3500 Blue Lake Drive, Suite 450
Birmingham, AL 35243

Dr. Yuliang Zheng, Professor and Chair
Department of Computer and Information Sciences
University of Alabama at Birmingham
CH115, 1300 University Blvd.
Birmingham, AL 35294-1170

Re: Master's Program in Big Data at UAB

On behalf of IBM, I am writing to express strong support for University of Alabama at Birmingham's (UAB) effort to establish a Master's Degree in Big Data Analytics. This innovative program to be jointly offered by Business and Computer Science Departments will offer opportunities for UAB students to be competitive for opportunities at IBM and other companies in the South and beyond.

IBM has a longstanding partnership with the UAB Academic, Research, and Health System enterprises, and in the past several years we have renewed a strong working partnership with the UAB CIS Department and UAB Research. In particular, IBM and UAB students and researchers have jointly collaborated on use cases around high performance computing with IBM server technology, provided tools and resources for advanced information assurance and joint forensics research, and continue to explore opportunities for big data and genomic research collaboration.

Through these specific collaborations and in the ongoing working partnership with UAB, I have witnessed innovative and groundbreaking work from UAB students, faculty, and staff. The addition of a Master's Degree in Big Data will unquestionably improve UAB's ability to empower CIS students with knowledge to change the world.

At IBM, we believe that data is the new natural resource, so equipping the workforce of tomorrow with the necessary skills around big data and analytics is imperative to the future of the IBM Corporation and the industries we serve.

IBM supports UAB and appreciates your effort in establishing a Master's program in Big Data. We would be willing to support the effort through further targeted opportunities for collaboration between IBM Big Data and Analytics professionals and the students, faculty, and staff at UAB.

The establishment of a Master's Degree in Big Data at UAB will only strengthen the ability of companies like IBM to harness the potential of the data they collect every day, and better position these organizations for the future of cognitive.

Sincerely,

Jay Gilmer
IBM Client Executive for UAB

DECISION ITEM UAB-4: University of Alabama at Birmingham, Master of Science in Clinical Pathologist Assistant (CIP 51.1099)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The proposed program is a graduate level professional program that will provide students the knowledge, skills and training needed for practice as a clinical pathologist assistant by providing current Medical Laboratory Scientists with advanced knowledge in the field of laboratory medicine. There is currently a disparity in the opportunities for Medical Laboratory Scientists to further their education in related curricula. This program is unique compared to existing Pathologist Assistant programs because it does not include an anatomic component. The emphasis will be fully on the clinical aspect of the pathology profession.

This program focusing on preparing individuals with these job skills directly relates to one of the overarching mission pillars of UAB — "to deliver the highest quality patient care that reflects our ability to translate discoveries into revolutionary therapies in one of the nation's largest academic medical centers." This program will aid in improving the quality of patient care, as laboratory tests make up a large proportion of diagnostic tests used to guide patient care.

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama at Birmingham (UAB).

Mode of Delivery: The proposed curriculum of the program will be delivered in an online format in a minimum of 16 months.

Similar Programs: There are no similar programs at this level in Alabama. Further, there are no similar programs in the SREB States.

Collaboration: At this time, collaboration with another institution is not considered necessary for the program development as UAB and the School of Health Professions have the teaching and course delivery resources needed to implement the program.

Resources: The proposal projected that a total of $700,000 in estimated new funds will be required to support the proposed program. A projected total of $872,870 in new funds will be available from tuition and internal reallocations.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The proposed Clinical Pathologist Assistant Program will prepare individuals for advanced practice in the field of clinical laboratory science, specifically to assist pathologists and extend their service capacity in healthcare organizations.

2. Workforce projections suggest that the number of pathologists in training is insufficient to offset anticipated pathologist retirements in the next decade (Robboy et al., Pathologist Workforce in the United States. *Pathology and Laboratory Medicine*, Vol. 137, December 2013). UAB states that this number will be compounded by the expected introduction of new tests and pathology services.

3. The proposed Clinical Pathologist Assistant Program will provide a comprehensive curriculum to prepare current CLS practitioners for career advancement opportunities as clinical pathologist assistants. No such education avenue currently exists.

4. The proposed Clinical Pathologist Assistant Program will be completely online and will meet the needs of currently employed clinical laboratory practitioners with an accelerated degree completion in 16 months.

5. The proposed Clinical Pathologist Assistant Program will enable clinical laboratory practitioners to contribute to more appropriate, timely, efficient, cost effective patient care though consultation and collaboration with other healthcare practitioners.

DECISION ITEM UAB-4: University of Alabama at Birmingham, Master of Science in Clinical Pathologist Assistant (CIP 51.1099)

Staff Presenter: Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed Master of Science in Clinical Pathologist Assistant.

The program will have the implementation date and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning 2018-19, will be at least 8 based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 7, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in continuing in related graduate work.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of Alabama at Birmingham (UAB) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. Letter from Ms. Mary Ann Floyd, Divisional Director, Children's Hospital of Alabama, attached.

5. Letter from Dr. Marisa B. Marques, MD, Professor of Pathology, UAB Department of Pathology, attached.

6. University of Alabama at Birmingham program proposal, received September 15, 2017. Available upon request.

7. "Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of Alabama at Birmingham (School of Health Professions)

PROGRAM: Master of Science in Clinical Pathologist Assistant (CIP 51.1099)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2010-21	2021-22	2022-23	TOTAL
FACULTY	$130,800	$130,800	$130,800	$130,800	$130,800	$654,000
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER (clinical site travel, marketing)	$12,000	$10,000	$8,000	$8,000	$8,000	$46,000
TOTAL	$142,800	$140,800	$138,800	$138,800	$138,800	$700,000

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$100,000	$40,000	$0	$0	$0	$140,000
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$55,080	$105,060	$157,590	$201,960	$213,180	$732,870
TOTAL	$155,080	$145,060	$157,590	$201,960	$213,180	$872,870

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	4	10	15	20	20	14
NEW ENROLLMENT HEADCOUNT	4	6	9	11	11	8
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	3	5	8	10	7

Attachment 2

Summary of Background Information

Master of Science in Clinical Pathologist Assistant
University of Alabama at Birmingham

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama at Birmingham (UAB).

Description and Objectives: Upon completion of this program, the graduate will be able to:

- Demonstrate the knowledge, technical skills, and professional conduct required of a Clinical Pathologist Assistant.
- Critically review, appraise, synthesize clinical and laboratory data, and present narrative interpretations of data based on medical evidence.
- Demonstrate the ability to provide appropriate and effective consultation through the effective exchange of information and expertise with other health care professionals, patients, patients' families, and the community at large.
- Synthesize new concepts, models, and theories through appropriate application of empirical knowledge and use this new information effectively toward the practice of evidence-based laboratory medicine.
- Apply advanced systems-based knowledge and experience in laboratory management, which includes awareness, budget management, medical informatics and responsiveness to the place of the clinical laboratory in the larger context within a system of healthcare. This includes the ability to call on resources within the system to provide laboratory services that achieve optimal value.

Assessment: Ongoing evaluation of program outcomes will be assessed annually and will be the responsibility of the Program Director and the Chair of the Department of Clinical and Diagnostic Sciences. Annual CPA program evaluation activities will examine the following: a) number/quality of program applicants and admits, b) course evaluations, c) examinations and assignments, d) student program surveys, e) graduation and attrition, f) post-graduate surveys, and g) faculty surveys. More specifically:

- Number/quality of program applicants and admits: An application database will be used to track the number and quality of applicants, admits, and matriculants. Examination of applicant data will occur annually within two months of matriculation.
- Course evaluations: Students will complete IDEA Student Ratings for each course to assess instructional methods and content delivery. Results from the IDEA course evaluations are reviewed within two months of course completion.
- Examinations and assignments: Student progress towards, and attainment of, program learning objectives will be assessed throughout each course by use of examinations and assignments.
- Student program surveys will be sent to current students annually to determine their overall satisfaction with the program,as well as perceived strengths and weaknesses of the curriculum.

- Graduation and attrition rates will be monitored and assessed annually for each admitted cohort. Causes of attrition will be noted and reviewed to determine if student characteristics or curricular issues are contributing to attrition. Examination of graduation and attrition data will occur within two months of graduation.

- Post-graduate surveys will assess graduate employment outcomes as well as graduate perceptions of program preparation for the workforce. These surveys will occur within one-year post graduation.

- Anonymous faculty surveys will be collected annually to measure the perceived strengths and weaknesses of the program and opportunities for improvement.

- Survey of prospective employers to determine level graduate readiness.

Administration: The program will be administered by the School of Health Professions, Dean, Dr. Harold Jones; Department of Clinical and Diagnostic Sciences, Chairperson Dr. Janelle Chiasera.

Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). A total of two votes were received; both recommended program approval.

Accreditation: There is not an accrediting body for this program.

Curriculum: The master's degree curriculum is being proposed as a 38-credit-hour degree.

Program Completion Requirements:

Credit hours required in major courses:	N/A
Credit hours required in support courses:	20
Credit hours in institutional general education or core curriculum:	15
Credit hours in required or free electives:	0*
Credit hours for thesis:	3
Total Credit hours:	**38**

* This program will be specific for advanced practice in laboratory medicine and will not require additional electives to be taken. However, students are welcome to take additional courses if they desire.

Collaboration: At this time, collaboration with another institution is not considered necessary for the program development as UAB and the School of Health Professions have the teaching and course delivery resources needed to implement the program. UAB expects that some graduates of Clinical Laboratory Sciences (CLS) programs sponsored by other colleges and universities will be interested in this degree for career progression. UAB will maintain its current professional relationships with other state and regional CLS programs and use appropriate networks to communicate with their alumni about this degree opportunity.

Distance Education: The proposed curriculum of the program will be delivered in an online format in a minimum of 16 months. Eighty-seven percent will be online courses and 13 percent will be comprised of an internship at distance location.

Admissions: Students will be required to be a certified Medical Laboratory Scientist (MLS, American Society for Clinical Pathology - ASCP) or Medical Technologist (MT, ASCP) with a bachelor's degree and 3-5 years work experience. Students will also be required to submit three letters of recommendation.

Need: There are two branches of pathology, anatomic and clinical. Anatomic pathology is the medical specialty concerned with the diagnosis of disease through the microscopic, chemical, gross, immunological, and molecular examination of organs, tissues, and whole bodies (autopsies). Subspecialties in anatomic pathology include surgical pathology, cytopathology, histopathology, and forensic pathology. Clinical pathology, is the medical specialty concerned with the diagnosis of disease

through the analysis of body fluids (blood, urine, cerebrospinal fluid, and others) using the tools of their subspecialty areas: Chemistry, Microbiology, Immunology, Hematology, Transfusion Medicine, and Molecular Diagnostics. This proposed degree relates to the clinical pathology branch.

Currently, medical students spend several hundred hours learning anatomic pathology, but usually fewer than 25 hours learning clinical pathology. Logically, physicians would benefit from collaborating with advanced level CLS professionals equipped to help them appropriately order laboratory tests and interpret those test results in a clinical context. This program will prepare professionals already clinically trained and certified to provide assistance from a clinical, not anatomic, perspective.

Twelve pathology assistant programs exist in the U.S. and Canada, all of which focus on anatomic pathology. Graduates of these programs are specifically trained in organs, tissues, and whole bodies, not clinical pathology. UAB’s program will train pathology assistants with a special emphasis on Laboratory Medicine (clinical pathology). The College of American Pathologists (CAP), the leading organization of board-certified pathologists, recognized the emerging need for pathologists trained in clinical pathology and charged a committee with developing a set of clinical pathology competencies. Developing this Clinical Pathologist Assistant program to be ready for implementation when the clinical pathologist assistant role is defined at the industry level will reinforce UAB's recognition as the leader and forerunner in health professions education.

The specific need for this program is to develop individuals with advanced clinical practice skills in clinical laboratory science to improve healthcare in the State of Alabama. Many people with a Bachelor's degree in Medical Laboratory Science have the desire, but no degree options, to advance their professional knowledge to serve in advanced practice roles. Currently, laboratory professionals must rely on job-based training, independent study, or years of experience for skills development. UAB currently has the M.S. program in Clinical Laboratory Science. However, this is a post-baccalaureate program for students with a bachelor's degree in subjects such as Biology, Chemistry, or Biochemistry, to attain their certification and qualifications to work in entry level positions in clinical laboratory science. The existing program is not an advanced education option for currently certified professionals. This proposed CPA program will build upon the foundational material covered in our M.S. in Clinical Laboratory Science Program, or other entry-level Medical Laboratory Science programs, to provide graduates with advanced knowledge and skills to improve the efficiency of laboratory testing, improve utilization of laboratory test data for clinical decision-making, and improve the quality of patient outcomes.

Clinical laboratory professionals process test requests familiar to the general public, such as blood cell counts, throat cultures, glucose levels, and coagulation studies to monitor Coumadin therapy. The critical issues and pressing needs facing healthcare today, and in the future, center on patient safety, quality, appropriate test utilization, reducing diagnostic errors, cost containment, improving patient outcomes, and the dissemination of patient results directly to the patient, all of which can be influenced by the work of clinical pathologists.

The Clinical Pathology Assistant workforce is not included in the Bureau of Labor (BOL) Statistics projections. This program serves as an academic enhancement for clinical laboratory scientists already certified and working in the field. The CLS field is a growing field. According to the BOL, it is projected to grow by 14 percent through 2024. According to the data below, the BLS projects the following at the state, regional and national levels.

Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	55	55	56	57	58	280
State	128	129	131	133	135	656
SREB	3,057	3,100	3,143	3,187	3,232	8,711
Nation	8,337	8,453	8,572	8,692	8,813	42,866

The roles UAB graduates would be taking include positions such as lead technologists, supervisors, managers, medical liaison, and positions serving on medical diagnostic teams, to name a few. While these positions are not described by the BOL, laboratory directors at the Jan 2017 clinical laboratory science advisory board meeting, which included hospitals from UAB, Children's Hospital, Grandview Medical Center, and Druid City Hospital, have anticipated 20 positions over the next 3-5 years for graduates from this program. Consistent with national projections, with projected retirements over the next 10 years, these numbers are expected to grow.

Student Demand: A survey was sent out via survey monkey to current Medical Laboratory Scientists nationwide. The survey was sent to local hospitals, through the clinical laboratory professional organization, and through a clinical laboratory Facebook group. There were 461 potential students who answered the survey. Those who responded were those with a Bachelor's degree and working as a Medical Laboratory Scientist. Questions on the survey and results are indicated below:

Question	Yes	No	NA
Are you interested in furthering your education in Laboratory Medicine?	79%	19%	2%
If you are interested in furthering your education in Laboratory Medicine, would you be interested in an online program?	86%	8%	6%
Are you interested in branching out from the traditional laboratory setting to consult with other healthcare professionals, patients, patient families, etc. to provide more appropriate, timely, efficient, cost effective patient care?	85%	13%	2%
Are you interested in effectively appraising and assimilating scientific data from the medical literature and using it effectively toward the practice of evidence-based medicine?	84%	14%	2%

Resources:
Faculty:
Current Primary Faculty—
Full-time: 5
Part-time: 0
Support Faculty—
Full-time: 2
Part-time: 0

Additional Faculty to Be Hired:
Primary Faculty—
Full-time: 1*
Part-time: 0

Support Faculty—
Full-time: 0
Part-time: 0

*Faculty will be required to be a certified Medical Laboratory Scientist (MLS, ASCP) or Medical Technologist (MT, ASCP) and hold a minimum of a Master's degree. A PhD in a related discipline will be preferred. Faculty will be experts in their respective fields; therefore will be qualified to teach advanced knowledge in the areas of Laboratory Medicine.

Support Staff: No additional support staff are anticipated to be needed.

Assistantships: No assistantships or fellowships are planned for students in the proposed program.

Equipment: The program will be delivered online; therefore, there will be no need for new equipment. The department and school currently has all resources needed to deliver courses online, including excellent technical support and resources.

Facilities: The program will be delivered online; therefore, there will be no need for new facilities. The department and school currently has office space and facilities needed to deliver online courses.

Library: The University of Alabama at Birmingham (UAB) library facilities available students are extensive and comprehensive. The institution has two libraries that support all of its educational programs, whether campus-based or online. The book and periodical holdings are located in the Lister Hill Library of the Health Sciences and the Mervyn H. Sterne Library. The Libraries collectively and collaboratively provide all faculty, students, staff, Alabama health care providers, and community users with access to library collections as well as to other learning/information resources.

Lister Hill Library, established in 1945, is the largest biomedical library in Alabama and one of the leading such libraries in the South. The collection spans over seven centuries beginning with 13,475 old and rare books and faculty and student access to 102,507 circulating monograph titles, 107,182 electronic monographs, and 39,499 electronic full text journals. Access to electronic resources is available across the campus and remotely to authorized users. The library provides a dynamic electronic collection of heavily used and just-in-time resources that meet the teaching, learning, and research needs of the faculty, staff and students at the University. Materials acquired for the library's collection are generally purchased in electronic format, except in cases where the only format available for sale is print. Content added to the library's collection is selected by user input, and there are demand driven systems in place to purchase book and journal content at the point of need. Sixty-six Medical Laboratory/Clinical Laboratory Science, and 18 Clinical Pathology journals are available through electronic format. All of the library's electronic resources are available from the campus network. The library utilizes EZProxy software to verify affiliation to provide off campus access to licensed content.

Sterne Library houses a collection of more than one million items that support teaching and research in the arts and humanities, business, education, engineering, natural sciences and mathematics, and social and behavioral sciences. The library provides electronic access to more than 35,000 serials and 72,000 electronic books, and subscriptions to more than 40,000 periodicals. Resources also include microforms and sound and video recordings. The facility has seating for over 1,100 users. The library offers special services for distance education students, such as document delivery and online research consultations.

Program Budget: The proposal projected that a total of $700,000 in estimated new funds will be required to support the proposed program. A projected total of $872,870 will be available from tuition and internal reallocations.

Attachment 3

Curriculum
Master of Science in Clinical Pathologist Assistant
University of Alabama at Birmingham

Course Number and Title	Number of Credit Hours	* If New Course
I. Core Curriculum		
CPA 605 Advanced Statistics and Data Analysis for Laboratory Medicine	3	*
CPA 606 Clinical Laboratory Management in the Health Care Setting	3	*
CPA 607 Evidence Based Literature Analysis for Laboratory Professionals	3	*
CPA 608 Laboratory Quality, Diagnostic Algorithms, Test Interpretation and Error Prevention	3	*
CPA 609 Patient Assessment, Consultation and Interprofessional Communication	3	*
II. Advanced Technical Courses		
CPA 650 Advanced Hematology, Hemostasis, and Coagulation Therapy	3	*
CPA 651 Advanced Transfusion Medicine and Transplantation	3	*
CPA 652 Advanced Clinical Chemistry	3	*
CPA 653 Advanced Clinical Bacteriology, Parasitology, and Infectious Diseases	3	*
CPA 654 Pharmacology and Toxicology for the Laboratory Professional	3	*
IV. Research/Project and Internship		
CPA 698 Clinical Pathologist Assistant Project	3	*
CPA 690 Clinical Internship	5	*

Clinical Pathology Assistant Suggested Curriculum Sequencing

Fall

Course #	Course Title	Credits
CPA 606	Health Care Management in Relation to the Clinical Laboratory	3
CPA 607	Evidence Based Literature and Analysis for Laboratory Professionals	3
CPA 650	Advanced Hematology, Hemostasis, and Coagulation Therapy	3

Spring

Course #	Course Title	Credits
CPA 608	Laboratory Quality, Diagnostic Algorithms, Test Interpretation and Error Prevention	3
CPA 605	Advanced Statistics and Data Analysis for Laboratory Medicine	3
CPA 652	Advanced Clinical Chemistry	3

Summer

Course #	Course Title	Credits
CPA 609	Interprofessional Communication, Consultation, and Patient Assessment	3
CPA 651	Advanced Transfusion Medicine and Transplantation	3
CPA 653	Advanced Clinical Bacteriology, Parasitology, and Infectious Diseases	3

Fall

Course #	Course Title	Credits
CPA 654	Pharmacology and Toxicology for the Laboratory Professional	3
CPA 698	Clinical Pathology Assistant Project	3
CPA 690	Clinical Pathology Assistant Internship	5

Total Credit Hours – 38

Attachment 4

Letter from Ms. Mary Ann Floyd, Divisional Director, Children's Hospital of Alabama

Children's
of Alabama

3-23-2017

To: The Academic Affairs Committee:

As a member of the advisory board of the Clinical Laboratory Science Program at UAB, I would like to offer this letter in support of the Clinical Pathologist Assistant (CPA) Program in the School of Health Professions at UAB. UAB's School of Health Professions has recognized a need in the field of clinical pathology for a role that could assist the pathologist in clinical areas that may not be covered or assisted by other positions typically found in the clinical laboratory. Such areas include utilization management, patient safety, laboratory accreditation and other activities in which clinical pathologists often take a lead role.

Increased accreditation requirements have led to an increased workload in the area of clinical pathology. We currently do not have clinical pathologists that are focused solely on the clinical aspects of pathology. The focus for our pathologists is split between anatomic and clinical pathology.

The Clinical Laboratory Science Program at UAB has developed a comprehensive curriculum designed to produce highly trained graduates for advanced technical and practical careers at many of the local hospitals in Birmingham, Alabama. A clinical laboratory scientist with advanced practice skills and training acquired through the proposed Clinical Pathologist Assistant Program could fill a need within laboratories to assist the pathologists in clinical duties. These highly trained graduates would support the clinical areas of pathology much as the traditional pathologist assistant role supports the pathologist in anatomic pathology. In addition, this program will provide additional opportunities for advancement to clinical laboratory scientists.

The UAB's proposed Clinical Pathologist Assistant Program is well positioned to be a forerunner in the area of clinical medicine. I fully support this new program.

Sincerely,

Mary Ann Floyd

Mary Ann Floyd, MScIs, MT(ASCP)

Divisional Director in Operations
Children's Hospital of Alabama
1600 7th Ave South
Birmingham, Alabama 35233
Phone: 205-638-9578
Email: maryann.floyd@childrensal.org
Relationship: Affiliate

Attachment 5

Letter from Dr. Marisa B. Marques, MD, Professor of Pathology, UAB Department of Pathology

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
Department of Pathology

March 15, 2017

UAB Academic Affairs Committee

To whom it may concern:

I am pleased to send you my strongest support for Dr. Floyd Josephat's proposal to initiate a Master's of Science program at UAB to train Clinical Pathologist Assistants. Please allow me to introduce myself and to explain why this initiative is so necessary and important.

I received my M.D. degree and trained in Internal Medicine in Porto Alegre, Brazil. My husband and I moved to the United States in 1986 to be Research Fellows at NIH; after 2 years, we moved to Harvard Medical School for further training, and in 1993 came to the University of Alabama at Birmingham. Since then, I completed a residency in Pathology with subspecialties in Hematopathology and Transfusion Medicine. I have been a faculty member since 1998, and I am passionate about teaching about appropriate use of blood transfusions and ordering and interpretation of laboratory tests to decrease diagnostic errors. I love to interact with medical technologists at UAB and other hospitals, and I have been an advocate for their role as consultants. I also teach medical students, residents, fellows, colleagues from other specialties. Since 2008, I have had the honor to be a member of a Centers for Disease Control and Prevention program called CLIHC (Clinical Laboratory Integration in Healthcare Collaborative), whose goal is to call attention to the need for Clinical Pathology to be more closely integrated with clinical practice to improve patient care. As part of that work, we have published a few manuscripts attesting to the great need for laboratory professionals to more directly communicate and aid patient care providers (physicians, advanced practice providers, nurses, etc).

The program proposed by Dr. Josephat is a dream come true to me after almost 19 years at UAB, without a formal mechanism to teach and involve medical technologists in the clinical pathology

Division of Laboratory Medicine
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WP P220
619 19TH ST S
BIRMINGHAM AL 35249-7331

consultation process. It is going to fulfill a huge gap in our ability to address the proper use of the laboratory to improve diagnosis and, ultimately, patient care. The September 2015 Institute of Medicine report "Improving Diagnosis in Health Care" described in detail the need to improve the diagnostic process. According to them, diagnostic errors are pervasive and cause harm affecting 5% of U.S. adults in outpatient care, each year; contribute to 10% of patient deaths; 6-17% of hospital adverse events; and are the leading type of paid medical malpractice claims. Among the eight goals delineated as recommendations in the report, goal #2 states "Enhance health care professional education and training in the diagnostic process." I cannot find any stronger reason to fully support and enthusiastically contribute to the Clinical Pathology Assistant Program at UAB, and I hope that you will support it as well.

Sincerely,

Marisa B. Marques, MD

Professor of Pathology

DECISION ITEM UAH-1: University of Alabama in Huntsville, Bachelor of Science in Sport and Fitness Management (CIP 31.0504)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval.

Program Description: The proposed Bachelor of Science degree in Sport and Fitness Management will prepare students for both graduate studies and entry into management, marketing, and administration positions of sport programs in educational and sport business settings. Program outcomes will align with the standards of key professional associations such as the Commission of Sport Management Accreditation (COSMA). The proposed degree program is unique in its educational and career goals, but also supportive of existing curricula in Kinesiology, Business, and Communications. The Bachelor of Science in Sport and Fitness Management creates a unique experience with courses specifically designed for the program linked with existing courses. However, a number of appropriate courses already exist in the College of Business as well as the Department of Communication Arts. These existing courses will be integrated as foundation building courses to prepare the Sport and Fitness Management major for degree-specific related content.

Role: The proposed program is within the instructional role recognized for the University of Alabama in Huntsville (UAH).

Mode of Delivery: According to the proposal, it is estimated that approximately 20-30 percent of the program courses will be delivered via distance education.

Similar Programs: The following institutions have similar programs located at CIP 31.0504 in the Academic Program Inventory: Alabama A&M University, Athens State University, University of North Alabama, Troy University, and the University of West Alabama.

Collaboration: No formal collaborative agreements regarding the proposed program have been formed at this time.

Resources: The proposal projected that a total of $487,098 in estimated new funds will be required to support the proposed program. A total of $636,248 will be available through internal reallocations and tuition.

Public Review: The program was posted on the Commission website from January 10 through January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The proposed program will provide needed employees for sport-and-fitness related fields. Specific types of employment opportunities include athletic directors, sport information directors and staff, fitness administrators and staff, sport marketing, and facilities managers.

2. The program will complement and expand on the current BS in Kinesiology at UAH.

3. The nation’s obesity epidemic and increasing healthcare issues related to inactivity have focused efforts and initiatives linked to organized physical activity programs.

DECISION ITEM UAH-1: University of Alabama in Huntsville, Bachelor of Science in Sport and Fitness Management (CIP 31.0504)

Staff Presenter: Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: That the Commission approve the proposed Bachelor of Science in Sport and Fitness Management.

The program will have the implementation date and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020 or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years will be at least 6, based on the proposal.

2. That the annual average number of graduates for the period 2020-21 through 2022-23 (three-year average) will be at least 8, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in acceptance to graduate school.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of Alabama in Huntsville (UAH) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. University of Alabama in Huntsville (UAH) program proposal, dated November 3, 2017. Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

INSTITUTION: University of Alabama in Huntsville (UAH)

PROGRAM: Bachelor of Science in Sport and Fitness Management (CIP 31.0504)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$93,600	$95,472	$97,381	$99,329	$101,316	$487,098
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$93,600	$95,472	$97,381	$99,329	$101,316	$487,098

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$28,108	$0	$0	$0	$0	$28,108
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$65,492	$102,916	$140,340	$140,340	$159,052	$608,140
TOTAL	$93,600,	$102,916	$140,340	$140,340	$159,052	$636,248

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	7	11	15	15	17	13
NEW ENROLLMENT HEADCOUNT	7	4	4	6	10	6
						3 -YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	6	8	10	8

Attachment 2

Summary of Background Information

Bachelor of Science in Sport and Fitness Management
University of Alabama in Huntsville (UAH)

Role: The proposed program is within the instructional role recognized for the University of Alabama in Huntsville (UAH).

Description/Objectives: The proposed Bachelor of Science degree in Sport and Fitness Management will prepare students for both graduate studies and entry into management, marketing, and administration positions of sport programs in educational and sport business settings. Program outcomes will align with the standards of key professional associations such as the Commission of Sport Management Accreditation (COSMA). The proposed degree program is unique in its educational and career goals, but also supportive of existing curricula in Kinesiology, Business, and Communications. The Bachelor of Science in Sport and Fitness Management creates a unique experience with courses specifically designed for the program linked with existing courses. However, a number of appropriate courses already exist in the College of Business as well as the Department of Communication Arts. These existing courses will be integrated as foundation building courses to prepare the Sport and Fitness Management major for degree-specific related content.

1. Graduates of Sport and Fitness Management will demonstrate a strong knowledge base in core areas, including:

- Sport and fitness management and marketing.
- Sport and fitness leadership.
- Sport and fitness facilities and equipment.
- Legal issues as they relate to sport, fitness, recreation, and exercise.

2. Graduates of Sport and Fitness Management will demonstrate professional skills and dispositions necessary for successful performance in the field, including:

- Written and oral interpersonal communication skills.
- Public presentation skills to mass audiences.
- Career management skills.
- Operation of technology in sport and fitness settings.
- Ethical reasoning skills.

3. Graduates of Sport and Fitness Management will demonstrate professionalism and leadership skills to serve the professional and academic field as well as society as a whole through understanding the (a) critical social, psychological, and philosophical core issues of sport and fitness, and (b) emerging trends and initiatives in sport, fitness, and recreation.

4. Graduates of Sport and Fitness Management will demonstrate the ability to assume leadership roles in various settings and work effectively with diverse groups seeking to improve the performance and outcome of those they lead. The program will model principles of self-awareness, reflective practice, transparency, and ethical behavior.

Administration: The program will be administered by the College of Education, Dr. Beth Quick, Dean; and the Department of Kinesiology.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Chief Academic Officers (CAOs). There were no objections to the NISP or program proposal.

Accreditation: According to the proposal, the Commission on Sport Management Accreditation (COSMA) is the accrediting organization for Sport Management and Administration programs. The accreditation standards focus on faculty, curriculum, and linkages to business and industry. The Department of Kinesiology at UAH plans to pursue accreditation from COSMA upon approval of the degree program.

Curriculum: The following new courses will be added to the program: Management of Sport and Coaching, Facilities and Equipment Management, Sport Leadership, Sociology in Sport, Introduction to Law, Psychology of Sport, Sport Marketing, Financial Matters in Sport, Ethical Issues in Sport, Sport and Fitness Management, and Internship.

Program Completion Requirements:

Credit hours required in major: 39 semester hours (sh)
Credit hours in general education or core curriculum: 41 (sh)
Credit hours required in minor: 22 (sh)
Credit hours required in free electives: 6 (sh)
Credit hours required in support courses: 12 (sh)
Credit hours required for completion: 120 (sh)

All students enrolled in the Sport and Fitness Management degree must successfully complete a 6 semester credits supervised internship in assigned locations (e.g., school athletic department, professional sport organization, fitness center). Students will complete the internship (KIN 49) while enrolled in the final semester of the degree program.

Collaboration: No formal collaborative agreements regarding the proposed program have been formed at this time.

Distance Education: According to the proposal, it is estimated that approximately 20-30 percent of the program courses will be delivered via distance education.

Admissions: Any student in good academic standing with the University is eligible for admission to the Sport and Fitness Management degree program. This requires students to maintain a grade point average (GPA) above the Academic Action Threshold (AAT), which varies according to classification. A student whose semester GPA falls below the applicable AAT will be either placed on academic warning, placed on probation, or dismissed, depending on relevant factors.

Need: According to the U.S. Bureau of Labor Statistics, the average growth rate in career fields often staffed by graduates from degrees, such as the proposed program, is 9.2 percent. The nation's obesity epidemic and increasing healthcare issues related to inactivity have focused efforts and initiatives linked to organized physical activity programs (Bailey, Hillman, Arent, & Petitpas, 2013). The expanding options in organized physical activity programs have created a need for additional managers of sport and fitness facilities and programs. The proposed degree will provide needed employees for sport and fitness-related fields. The Bachelor of Science in Sport and Fitness Management will equip students to enter a rapidly growing field prepared to lead, organize, and manage the way society addresses its sport and fitness needs.

The program will build on current degree offerings within the university, respond to identified needs and expressed student interests in the Department of Kinesiology, and capitalize on expertise in the College of Business with minimal additional resources. The proposed Sport and Fitness Management program will be aligned with national standards and will incorporate accepted best practices within the field. It is anticipated that both overall university enrollment and shared course enrollment will increase.

Student Demand: Enrollment projections for the proposed BS in Sport and Fitness Management degree program are based on an analysis of current enrollment and student survey data in the Department of Kinesiology. In addition, enrollment at other state universities with a Bachelor of Sport Management and related degree fields was reviewed. Enrollment projections reflect anticipated growth supported by students indicating an interest in pursuing a degree in sport and fitness management, increased marketing and promotion of such a degree option, and intentional collaboration with area employers in sport and fitness management professions.

Faculty:
Current Primary Faculty—
Full-time: 2
Part-time: 2
Support Faculty—
Full-time: 2
Part-time: 0

Additional Faculty to be hired:
Primary Faculty—
Full-time: 1
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

According to the proposal, UAH will seek a tenure-earning assistant professor with evidence of or the potential to develop a strong research portfolio, the ability to teach a number of core sport management subjects, and to advise and coordinate services for students in the major. Classes in other areas may be assigned as needed. The successful candidate will be dedicated to teaching excellence and will provide service to the college, university, community, and profession.

Equipment: No new or specialized equipment will be required for the program.

Facilities: No new facilities will be required for the proposed program.

Library: The current library resources and materials that would be used for the proposed Bachelor of Science in Sport and Fitness Management degree have some overlap with existing materials to support other UAH offerings in the Department of Kinesiology and the College of Business. However, because this program is not currently offered at UAH, there has not been a concerted effort to date to acquire specific materials to support this discipline.

The UAH library provides subscription access to several hundred databases, covering a broad spectrum of academic subjects that are relevant to the various colleges & departments at UAH. Of those, at least seven (7) databases contain electronic journals & other resources that pertain directly to Sport and Fitness Management, including:

- SPORTDiscus with Full Text,
- Business Source Premier,
- LexisNexis Academic,
- PsyclNFO,
- ERIC,
- Academic Search Premier,
- ABI/Inform.

Program Budget: The proposal projected that a total of $487,098 in estimated new funds will be required to support the proposed program. A total of $636,248 will be available through internal reallocations and tuition.

Attachment 3

The University of Alabama in Huntsville
Bachelor of Science in Sport and Fitness Management

Course Number and Title	Number of Credit Hours
ENG 101 English Composition I	3
ENG 102 English Composition Il	3
History I (any approved UAH Charger Foundations Course)	3
History Il (any approved UAH Charger Foundations Course)	3
Fine Arts (any approved I-JAH Charger Foundations Course)	3
Science with Laboratory (any approved UAH Charger Foundations Course	4
Science with Laboratory (any approved I-JAH Charger Foundations Course	4
CM 1 13 Introduction To Rhetorical Communication	3
PY 101 General Psychology	3
PY 201 Lifespan Development	3
Literature I (any approved UAH Charger Foundations Course)	3
Literature Il (any approved UAH Charger Foundations Course)	3
MA 110 Finite Mathematics (or higher math)	3
ECN 142 Macroeconomics	3
ECN 143 Microeconomics	3
CM 231 Foundations of Communication	3
CM 220 Intro. To Public Relations	3
ACC 210 Principles of Accounting	4
KIN 260 Foundations of Kinesiology	3
KIN 265 Management of Sport and Coaching	3
MSC 287 Business Statistics I	3
FIN 301 Principles of Finance	3
MGT 310 Managing Organizations	3
KIN 381 Facilities and Equipment Management	3
KIN 382 Sport Leadership	3
MKT 301 Principles of Marketing	3
KIN 383 Sociology in Sport	3
ECN 406 Sport Economics	3

KIN 442 Introduction to Sport Law	3
KIN 463 Psychology of Sport	3
KIN 470 Sport Marketing	3
KIN 471 Financial Matters in Sport	3
KIN 472 Ethical Issues in Sport	3
KIN 473 Sport and Fitness Management	3
KIN 490 Internship	6
Electives	9
Total	**120**

DECISION ITEM UAH-2: University of Alabama in Huntsville, Master of Arts in Teaching – Elementary Education (CIP 13.1202)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The mission of UAH is to educate individuals in leadership, innovation, critical thinking, and civic responsibility and inspiring a passion for learning. The Master of Arts in Teaching: Elementary Education (MAT) will focus on educating individuals who already possess an undergraduate degree, but wish to pursue teacher education to prepare leaders of tomorrow. The MAT degree will provide a unique opportunity for individuals with diverse backgrounds to earn a graduate degree, while simultaneously achieving initial certification to teach students in kindergarten through sixth grade.

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama in Huntsville (UAH).

Mode of Delivery: Approximately 13 percent of the total program's courses offered will be provided by distance education.

Similar Programs: The following institutions offer similar programs at this level: Alabama A&M University, Auburn University, Auburn University at Montgomery, Jacksonville State University, Troy University, University of Alabama, University of Alabama at Birmingham, University of Montevallo, University of South Alabama, University of West Alabama, and University of North Alabama.

Currently, most major universities in the state offer a similar "Alternative-Class A" teacher education program, as this option allows individuals with an earned baccalaureate degree to pursue teacher certification. UAH has historically offered an "Alternative-Class A" program in secondary education. With recent changes in regulations for "Alternative-A " elementary education programs, UAH is now further positioned to develop and deliver a program to provide students with another option in the northeast Alabama and southern Tennessee geographic region.

Collaboration: The MAT Elementary program at UAH will focus on rigorous evidence based teaching strategies infused throughout the program. This type of program already exists at many universities within the state, but UAH would like to focus on developing a program that further reflects the university's specific mission and goals. Additionally, each college or university must submit and gain approval from the Alabama State Department of Education for each of its Alternative A teaching certification programs.

Resources: The proposal projected that a total of $0 in new funds will be required to support the proposed program. A total of $173,808 will be available through tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The MAT in Elementary Education program at UAH would provide an opportunity for graduates from a broad spectrum of degrees to pursue a career focused on teaching the youngest students in public and/or private education.

2. The MAT Elementary Education program has been fully approved by ALSDE and the Alabama State Board of Education.

3. The program will complement UAH's current undergraduate program, which is taught by leading research faculty with strong teaching backgrounds in elementary education.

4. The program would complement and complete the current MAT offerings at UAH.

5. At this time, the MAT degree is solely focused on secondary education, but this program would expand UAH's offerings.

6. The MAT in Elementary Education program will provide a graduate option for many who are pursuing an opportunity to change to a teaching career.

7. Students within the MAT Elementary degree may be provided opportunities to participate in research and other professional development activities with UAH faculty.

DECISION ITEM UAH-2: University of Alabama in Huntsville, Master of Arts in Teaching – Elementary Education (CIP 13.1202)

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed Master of Arts in Teaching – Elementary Education.

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning 2018-19, will be at least 5, based on the proposal.

2. That the annual average number of graduates for the period 2020-21 through 2022-23 (three-year average) will be at least 4, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in acceptance to graduate school.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

University of Alabama in Huntsville (UAH) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. The University of Alabama in Huntsville program proposal, submitted September 15, 2017; Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of Alabama in Huntsville

PROGRAM: Master of Arts in Teaching - Elementary Education (CIP 13.1202)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$10,224	$25,560	$35,784	$46,008	$56,232	$173,808
TOTAL	$10,224	$25,560	$35,784	$46,008	$56,232	$173,808

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT*	2	5	7	9	11	7
NEW ENROLLMENT HEADCOUNT	2	3	4	6	8	5
						3-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	2	4	6	4

*All Students are projected to be full time.

Attachment 2

Summary of Background Information

Master of Arts in Teaching – Elementary Education
University of Alabama in Huntsville

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama in Huntsville (UAH).

Objectives: The objectives of the MAT-Elementary program are as follows:

- Provide a comprehensive teacher education program with appropriate coursework, field experiences, and student internships to prepare teacher candidates who already hold a valid bachelor's degree to serve as an elementary educator (K-6th).
- Provide a strong program where students advance their knowledge to meet the needs of a more diverse population of students.
- Prepare teachers who can meet the elementary education needs in north Alabama, south Tennessee and surrounding areas.
- Strengthen UAH's collaboration with parents, education, and community stakeholders.
- Provide individuals with a valid undergraduate degree a pathway to becoming an elementary educator.

Graduates will be able to:

- Outcome 1 - Pass all state required assessments including, but not limited to, PRAXIS II examinations and edTPA.
- Outcome 2 - Create rigorous teaching units (or learning segments) that use evidenced-based practices in elementary education.
- Outcome 3 - Differentiate instruction during all teaching opportunities based upon the learning needs of their students.
- Outcome 4 - Execute age-appropriate lessons focused on age or grade-appropriate learning standards.

Assessment: Outcome 1: Students will be required to pass all Praxis exams before entering their student teaching. Data on Praxis exams are routinely gathered throughout the year and score data are maintained in UAH's current data management system (TK20). For any student who does not pass a Praxis exam, a remediation plan will be developed and students will be provided supports. The edTPA assessment is completed during the internship. All final scoring reports will be provided to the College after the semester submissions. The College will analyze the data from the edTPA assessments to determine areas for improvement within the program. For any student who does not pass ed TPA, a remediation plan will be developed for the student in order to support them re-taking the assessment.

Outcome 2: At the course level, students will complete daily lesson plans that will be analyzed and graded using a College-level grading rubric. These lesson plan assessments are considered "key assessments" and the graded rubrics will be housed in TK20 for formative analysis. This analysis will allow the department to review students' planning ability in order to reflect continually and respond to areas of strengths and weaknesses. As part of the internship, the learning segment (a 3-5 day unit) will be submitted with the internship notebook for grading for the internship grade. This learning segment

assignment will be graded by two faculty using a common rubric and the data will be housed within our database. This analysis will serve as a summative assessment for lesson planning.

Outcome 3: Ongoing formative assessment will be conducted at the class level to determine students' ability to plan lessons that are differentiated based upon student learning needs. During the internship, students will be asked to provide a written commentary and evidence of how they collected student-learning needs and how they used those data to drive their instruction. Two faculty will grade this section of their internship notebook and the results will be housed in TK20 for further analysis.

Outcome 4: During the internship, students will complete an array of lessons, including multiple lessons which will be videoed. The students will complete a commentary along with the video and submit it as part of their internship documentation. The university supervisor will assess the video and accompanying lesson plan and commentary to determine if the lesson focused on important content and was age-appropriate. All graded materials will be housed in the College's TK20 database for analysis by faculty.

UAH also provided a follow-up plan to determine accomplishments of graduates such as obtaining relevant employment or being admitted to a masters or doctoral program (graduate or professional). All graduates of the MAT Elementary degree program will be included in the Department's current longitudinal data-gathering schedule. Currently, UAH's Coordinator of Field Experiences collects follow-up contact data and maintains a database of students' job placements. A variety of mechanisms to collect long-term data on students, including launching annual surveys to employers and graduates, are to be implemented. The annual survey gathers data concerning graduates' admission to higher degree programs (Educational Specialist or doctoral programs).

Administration: The program will be administered by the Dean of the College of Education, Dr. Beth Quick; and Chair, Dr. Derrick Smith, Department of Curriculum and Instruction.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). Three votes were received; two recommended approval; and one to not approve the proposed Master of Arts in Teaching.

Accreditation: The program must adhere to all standards established by the ALSDE as well as the National Council for Accreditation of Teacher Education (NCATE)/ Council for the Accreditation of Educator Preparation (CAEP). UAH Teacher Education has full NCATE accreditation and all licensure programs are approved by the Alabama State Department of Education (ALSDE) until May 31, 2020. The next accreditation submission will be reviewed by the newly formed Council for the Accreditation of Educator Preparation (CAEP).

Curriculum: Program Completion Requirements -

Credit hours required in major courses:	46
Credit hours required in minor:	0
Credit hours required in support courses:	0
Credit hours in required or free electives:	0
Credit hours for thesis or dissertation:	0
Total semester hours:	**46**

Collaboration: The MAT Elementary program at UAH will focus on rigorous evidence based teaching strategies infused throughout the program. This type of program already exists at many universities within the state, but UAH would like to focus on developing a program that is further attuned and reflects the university's specific mission and goals. Additionally, each college or university must submit and gain approval from the Alabama State Department of Education for each of its Alternative A teaching certification programs.

Distance Education: Approximately 13 percent of the total program's courses offered will be provided by distance education.

Since this program is an initial certification program, the Department of Curriculum and Instruction believes the majority of the coursework should be completed using a traditional face-to-face delivery method. In particular, the "Teaching Field" courses focus on authentic instructional practices that must be modeled and practiced in the classroom before implementing them in an elementary classroom. In many ways, the "Teaching Field" courses are similar to "laboratory" courses where students practice skills. The two courses which will be delivered online are foundational courses that focus more on theoretical frameworks than practice.

Admissions: Students will be required to pass the Praxis II Elementary Multiple Subjects exam as a requirement for admission into the program. During the first semester, they will be required to complete a background check with the ALSDE and pass the Praxis Core Academic Skills for Educators test to be admitted into the Teacher Education Program. This is consistent with state regulations.

Need: In 2016-2017, there were 397,212 students in K-6 classrooms in Alabama (Alabama State Department of Education (ALSDE, 2017). For those students, the United State Bureau of Labor Statistics (2017) indicate there are 25,470 professional K-6 educators in the state of Alabama. According to the US Bureau of Labor Statistics, the employment of elementary educators is projected to grow 4-6 percent between 2014 and 2024, which is considered about as fast as the average for all occupations. Growth is expected for this field because of projected increases in student enrollment.

The American Association for Employment in Education (AAEE, 2016) reports the vast majority of elementary education graduates secure full-time or part-time employment immediately after graduation. Sutcher, Darling-Hammond, and Carver-Thomas (2016) found when combining estimates of supply and demand, their models predicted an estimated teacher shortage of approximately 64,000 teachers nationwide in 2015-16. On this basis, by 2025, 316,000 new teachers will be needed annually. AAEE (2016) reported school districts are hiring educators in great numbers from non-traditional programs to fill the needs left by declining numbers of completers in traditional, undergraduate education programs.

The purpose of the MAT Elementary degree program at UAH is to support the development of highly-qualified elementary education (K-6) teachers through a non-traditional route. Many highly educated and highly motivated scholars complete non-education bachelor degrees and then seek a path to become a certified teacher. This MAT Elementary program will provide an opportunity for nontraditional students to pursue a graduate degree and teaching certification. Preparing highly skilled elementary educators representing diverse educational backgrounds has the potential to strengthen education in the state.

Career and College Readiness/Preparation – Projected Job Openings

	Year	Year 2	Year 3	Year 4	Year 5	Total
Local	100	100	100	100	100	500
State	890	890	890	890	890	4,450
SREB	9,840	9,840	9,840	9,840	9,840	49,200
Nation	43,470	43,470	43,470	43,470	43,470	217,350

Data were compiled by reviewing online information provided by the Bureau of Labor & Statistics, the National Education Association, the SREB, and the Alabama State Department of Education. The Bureau of Labor Statistics Standard Occupational Classifications 25-2021 (Elementary school teachers, except special education) and 25-2012 (Kindergarten teachers, except special education) were used to populate the table. The SREB data were calculated by considering the job openings projected in each of the 16 member states as a combined total. Alabama data were populated from a dedicated report prepared by the Alabama State Department of Labor.

Student Demand: Enrollment projections were based upon of a historical review of similar programs across the state, job projections, and analysis of current elementary education major trends at UAH. Enrollment projections reflect conservative anticipated growth supported by students indicating interest in

pursuit of graduate degree and initial certification in elementary education simultaneously, increased marketing and visibility, and a sustained continuation of an upward trajectory of enrollment. The Department of Curriculum and Instruction also keeps a running record of requests for programs. Over the past year, the Department has been contacted via email, direct phone call, or personal conversation at least 27 times by students indicating an interest in the proposed MAT elementary degree option.

Resources:
Faculty:
Current Primary Faculty to teach in the program—
Full-time: 10
Part-time: 3

Support Faculty—
Full-time: 0
Part-time: 0

Additional Faculty employed to teach in the first five years:
Primary Faculty:
Full-time: 0
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

Support Staff: No additional staff members are requested.

Fellowships and Assistantships: There are no fellowships or assistantships specifically associated with this proposed program.

Equipment: No special equipment purchases will be required for implementation of the proposed M.A.T. program.

Facilities: No new facilities are required.

Library: The M. Louis Salmon Library is a 105,000 square foot facility with an Information Arcade, coffee shop, study areas, group study rooms, art gallery and five computer classrooms that serve the University. The second floor also houses the Faculty Resource Center and its staff. The library's collection includes 359 online databases (101 paid subscriptions in 2011), 628 paid subscriptions for individual serial titles (print and/or electronic), 113 standing orders for titles, over 63,000 e-books (from EBSCOhost, NCBI Bookshelf, Wiley Online Library, and three Springer collections), over 13,000 pieces of microforms, and more than 277,000 books. Including the archives, the library contains more than 392,550 items. The library also has access to a number of databases provided by the Alabama Virtual Library (AVL) and the Network for Alabama Academic Libraries (NAAL).

Currently the library has four accredited MLS librarians providing reference service, library instruction, interlibrary loan, and collection development. The faculty librarians are also subject specialists for the colleges on campus. Support at the reference desk and for library instruction is supplemented by two full-time MLS librarians. The librarians use the LibGuide software to create specialized library guides to assist the students in finding materials in the library for individual classes, doing research, and locating appropriate subject databases. A number of LibGuides have been created to support classes taught by the subject specialists for various colleges. The M. Louis Salmon Library also has total reciprocity with the Network of Alabama Academic libraries. Interlibrary loan is also offered for the borrowing and lending of monographs and journal articles.

The Louse Salmon Library currently has access to 7,047 items in its "Education Collection". The Louis Salmon library currently subscribes to fifteen education journals in print. All other education periodicals

are available electronically either as individual subscriptions or as part of the content of the licensed databases. According to libraries' A to Z list from the vendor EBSCO, they have access to approximately 1,924 journals that have the subject of education. This number and access to individual titles may vary from year to year according to the accessibility of the titles from the publishers and database vendors.

Program Budget: A total of $0 in estimated new funds will be required to support the proposed program over the first five years. A total of $173,808 will be available through tuition.

Attachment 3

University of Alabama in Huntsville
Master of Arts in Teaching – Elementary Education

Proposed Program of Study

Course Number and Title	Number of Credit Hours	* If New Course
ED 604: Contributions of Psychology in Education	3	
ED 609: Classroom & Behavior Management	3	
ED 530: Applied Multiculturalism	3	
ED 575: Reading in the Primary Grades	3	*
ED 520: Computer-Based Instructional Technology	3	
ED 607: Educator as an Evaluator	3	
ED 593: Teaching Exceptional Children	3	
ED 615: Reading in the Intermediate Grades	3	*
ED 671: Teaching Elementary Language Arts	3	*
ED 672: Teaching Elementary Social Studies	3	*
ED 673: Teaching Elementary Science	3	*
ED 674: Teaching Elementary Math	3	*
ED 693: K-6 Internship	3	*

DECISION ITEM UAH-3: University of Alabama in Huntsville, Master of Science in Applied Behavior Analysis (CIP 42.2814)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The mission of UAH is to educate individuals in leadership, innovation, critical thinking, and civic responsibility and inspire a passion for learning, while serving Alabama and beyond. The Master of Science in Applied Behavior Analysis (ABA) will provide a unique opportunity to support the education of individuals with unique behavior needs by applying rigorous, scientific methods to develop programs and services for these individuals. This program will increase the supply of behavioral analysts in the state.

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama in Huntsville (UAH).

Mode of Delivery: All education courses will be delivered using a distance-learning model. All new ABA-specific courses will be delivered online using a combination of synchronous and asynchronous instructional methods. Approximately 82-100 percent of the total program's courses offered will be provided by distance education, depending on specific electives chosen by students.

Similar Programs: The following institutions offer similar programs at this level: Auburn University and Jacksonville State University. Over 40 at least somewhat similar programs are offered at institutions in other SREB states.

Collaboration: Geographical considerations are the primary reason for not collaborating with other institutions. Additionally, collaborations with other universities typically fall within the University of Alabama System and neither Auburn nor Jacksonville State are part of that system.

Resources: The proposal projected that a total of $475,000 in new funds will be required to support the proposed program. A total of $492,464 will be available through internal reallocations and tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. There is substantive growth potential for a Board Certified Behavior Analyst (BCBA) employment in north Alabama. With growing demographics, the number of students and adults requiring applied behavior analysis is projected to grow.

2. The College of Education at UAH has existing undergraduate programs in collaborative teaching (special education) and psychology, which could serve as enrollment streams for the program. At the same time, the existing M.Ed. program concentration in autism spectrum disorders has already established UAH as a leader in this field in the region.

3. UAH is also a member of the Regional Autism Network with funding provided by the Alabama Department of Mental Health.

4. UAH faculty has membership on the Alabama Interagency Autism Coordinating Council as well as the role of Director of Camp Autism Smiles. UAH faculty also have a state leadership role and strong

expertise and academic credentials in autism spectrum disorders and are well positioned to guide this program's future.

5. The UAH Early Learning Center (ELC) is a unit of the College of Education and currently provides a variety of early childhood education options for children with and without disabilities, including RISE inclusion classrooms, Early Head Start, Head Start, and a classroom for preschoolers with autism spectrum disorders.

6. The ELC has established strong collaborative relationships with the local school districts and supports some of their students with identified special needs and their families.

7. UAH is committed to being a leader in education for students with autism and other developmental disabilities. With this proposal, the University is committed to hire a new faculty member with Board Certified Behavior Analysts (BCBA) Doctoral certification to lead the program. UAH also states that it will establish partnerships with BCBAs in the region for our students and provide professional development and services to both BCBAs and their clients.

DECISION ITEM UAH-3: University of Alabama in Huntsville, Master of Science in Applied Behavior Analysis (CIP 42.2814)

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed Master of Science in Applied Behavior Analysis.

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning 2018-19, will be at least 5, based on the proposal.

2. That the annual average number of graduates for the period 2020-21 through 2023-23 (three-year average) will be at least 4, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in acceptance to graduate school.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of Alabama in Huntsville (UAH) will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. University of Alabama in Huntsville program proposal, submitted November 3, 2017; Available upon request.

5. “Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions,” Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of Alabama in Huntsville

PROGRAM: Master of Science in Applied Behavior Analysis (CIP 42.2814)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$95,000	$95,000	$95,000	$95,000	$95,000	$475,000
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$95,000	$95,000	$95,000	$95,000	$95,000	$475,000

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$74,552	$43,880	$13,208	$2,984	$0	$134,624
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$20,448	$51,120	$81,792	$92,016	$112,464	$357,840
TOTAL	$95,000	$95,000	$95,000	$95,000	$112,464	$492,464

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT*	2	5	8	9	11	7
NEW ENROLLMENT HEADCOUNT	2	4	5	6	8	5
						3-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	0	2	4	6	4

*All Students are projected to be full time.

Attachment 2

Summary of Background Information

Master of Science in Applied Behavior Analysis
University of Alabama in Huntsville

Role: The proposed program is within the instructional role recognized by the Commission for the University of Alabama in Huntsville (UAH).

Objectives: The objectives of the program are as follows:

- Learning Outcome 1 - During or immediately after the program, students will complete all requisite clinical field experiences with experienced Board Certified Behavior Analysts (BCBAs).
- Learning Outcome 2 - Upon completion of the program, students will successfully apply to sit for the BCBA exam.
- Learning Outcome 3 - Upon completion of the program and clinical field experiences, students will successfully pass the BCBA exam to become a Board Certified Behavior Analyst.
- Learning Outcome 4 - Upon completion of the program, students will be able to develop a service-delivery program based upon the principles of Applied Behavioral Analysis (ABA) for students in their field experiences or clinical experiences.

Assessment: Outcome 1 - As part of the program, students will be required to complete clinical field experience hours per Behavior Analyst Certification Board policies. Students will report clinical field experience hours within the TK20 data management system utilized by the College of Education. Data will be routinely analyzed to determine what supports and/or revisions to the program are needed to better support students in completing the required hours. UAH will focus on developing partnerships with experienced BCBAs in the region. Each semester, evaluations will be completed by the BCBA for the assigned student, not only to certify the completed hours, but also to identify the student's strengths and weaknesses. Data will be used to mentor students toward completion of the degree program. Students will evaluate their cooperating BCBA to ensure students are placed with effective mentors.

Outcome 2 - Ongoing data will be collected on the number of students who successful complete all required coursework and clinical field experience hours and are allowed to sit for the BCBA exam. Because of the large number of field experience hours (750 to 1,500 hours required), data on the number of students who apply and are eligible to sit for the exam are a tangible measure of success of the program.

Outcome 3 - Data will be collected and analyzed on the number of students who successfully pass the BCBA exam. Data are currently collected by the BACB and provided to the approved program, as well as the public.

Outcome 4 - Students enrolled in EDC 616 will create a fully developed service-delivery program for a student. This assignment will serve as a comprehensive assessment for completion of the course. The rubric for this assignment will be scored in TK20 by faculty and will provide data to be analyzed by the department to identify any tangible weaknesses that can be addressed by revisions to the program courses.

All graduates of the Master of Science degree in Applied Behavior Analysis will be included in the Department's current longitudinal data-gathering assessment system. Currently, the Coordinator of Field Experiences and Internships collects follow-up contact data and maintains a database of students' job placements. The annual survey gathers data concerning graduates' admission to higher degree programs (doctoral programs) and current employment.

Administration: The program will be administered by the Dean of the College of Education, Dr. Beth Quick; and Chair, Dr. Derrick Smith, Department of Curriculum and Instruction.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). Four votes were received; all four recommended approval of the proposed Master of Science in Applied Behavior Analysis.

Accreditation: UAH will first submit the program to the Behavior Analyst Certification Board for consideration of an "Approved Course Sequence" and "Approved Experiences" applicable toward BACB eligibility requirements. This is only an "approval process" and is not considered accreditation. However, it is necessary to be listed on the BACB website as an institution with a program.

UAH must have at least one graduate to begin the accreditation process through the Behavior Analysis Accreditation Board of Association for Behavior Analysis International (ABA). The Behavior Analyst Certification Board was established in 1998 to meet professional credentialing needs identified by behavior analysts, governments, and consumers of behavior analysis services. The BACB's certification requirements, exam content, and procedures undergo regular review according to international standards for organizations that grant professional credentials.

The BCBA certification programs are accredited by the National Commission for Certifying Agencies (NCCA) in Washington, DC. NCCA is the accreditation body of the Institute for Credentialing Excellence.

UAH plans to seek accreditation as soon as possible in order to validate the program.

Curriculum: Program Completion Requirements -

Credit hours required in major courses:	27
Credit hours required in minor:	0
Credit hours required in support courses:	0
Credit hours in required or free electives:	6
Credit hours for thesis or dissertation:	0
Total semester hours:	**33**

The Master of Science in Applied Behavior Analysis will not require any UAH examinations. Students will be required to complete a practicum course(s) to earn the required clinical/field experience hours necessary to be eligible to register for the BCBA exam. However, students may complete the degree program without passing the BCBA exam.

Collaboration: Geographical considerations are the primary reason for not collaborating with other institutions. Additionally, collaborations with other universities typically fall within the University of Alabama System and neither Auburn nor Jacksonville State, both of which offer similar programs, are part of that system.

Distance Education: All education courses will be delivered using a distance-learning model. All new ABA-specific courses will be delivered online using a combination of synchronous and asynchronous instructional methods. Approximately 82-100 percent of the total program's courses offered will be provided by distance education, depending on specific electives chosen by students.

In further detail, UAH currently utilizes the Canvas Learning Management System, as well as Panopto software for synchronous instruction. However, some courses may require a hybrid format with limited face-to-face meetings. The elective courses from the Department of Psychology are currently not offered online, but they are typically offered during the summer terms or in the evenings. However, the faculty in the Department of Psychology have expressed a willingness to investigate synchronous online offerings of some of the psychology courses using Panopto, if enrollment warrants.

Admissions: 1. A minimum grade-point average of 3.0 on the undergraduate record; and
2. A minimum score of 300 verbal and quantitative with no scores below 150, or a minimum score of 410 on the Miller Analogies Test (MAT). 3. TOEFL or IELTS (for non-native English speakers): (a) TOEFL (iBT): all sub-scores greater than or equal of 18, OR (b) IELTS: all sub-scores greater than or equal to 6.0.

Need: Currently, the state of Alabama has 182 Board Certified Behavior Analysts (BCBA) (BCBA, 2017), with 26 located within 50 miles of Huntsville. Therefore, 182 BCBAs in Alabama are serving individuals in the primary areas of health care, educational services, or social assistance (Burning Glass Technologies, 2015). The Alabama Legislature has approved legislation requiring health insurance coverage for the use of Applied Behavioral Analysis (ABA) as an approved therapy for children with autism. Additionally, 45 other states have laws requiring health insurance coverage for autism therapists. BCBA reported that 53 percent of the top skills demands listed by employers was "experience with autism" (Burning Glass Technologies, 2015).

The U.S. Department of Education (2015) reports 5.5 percent of children with disabilities between ages 3-5 and 6.3 percent between ages 6-21 are categorized with autism spectrum disorders. At the same time, students with emotional disabilities (1.9 percent), traumatic brain injury (0.3 percent), and intellectual disabilities (8.4 percent) are also candidates for supports from BCBAs in the educational services domain. Beyond education, many BCBAs work in healthcare settings as therapists, clinicians, behavior analysts, clinical managers, and clinical supervisors.

The National Alliance on Mental Illness (NAMI) reports approximately 43.8 million adults experience some form of mental illness in a given year with 9.8 million of those experiencing serious mental illness. Children between the ages of 13-18 (21.4 percent) experience a severe mental disorder at some point in their life. Among the 20.2 million adults in the U.S. who experience a substance use disorder, 50.5 percent (10.2 million adults) had a co-occurring mental illness. Based upon these staggering statistics, the increase of demand for BCBAs within healthcare and education is clearly demonstrated.

Career and College Readiness/Preparation – Projected Job Openings

	Year	Year 2	Year 3	Year 4	Year 5	Total
Local	7	7	7	7	7	35
State	30	30	30	30	30	150
SREB	300	300	300	300	300	1,500
Nation	4,000	4,100	4,200	4,300	4,400	21,000

Student Demand: UAH began a Master of Education program with a concentration in autism spectrum disorders in 2014. This program leads to a graduate degree and an Alabama Class A teaching certificate in Collaborative Teaching (K-6 or 6-12). As UAH faculty members have engaged with schools, employers, and potential students in north Alabama, the need for a BCBA program has become abundantly clear.

For example, since 2014, the Department of Curriculum and Instruction has logged at least 50 inquiries concerning a BCBA program. Additionally, three area special education directors in local school districts have expressed interest in such a program. While UAH recognizes these data are anecdotal in nature, the growth potential for BCBAs in north Alabama (because of the high number of students with autism, our growing early childhood programs, unique schools for students with autism and intellectual disabilities, and growing mental health needs), leads UAH to express confidence that the program is needed, particularly in north Alabama. Currently, the closest programs offered are at Jacksonville State University or Vanderbilt University in Nashville, Tennessee.

Resources:
Faculty:
Current Primary Faculty to teach in the program—
Full-time: 10
Part-time: 3

Support Faculty—
Full-time: 0
Part-time: 0
Additional Faculty employed to teach in the first five years:
Primary Faculty:
Full-time: 1
Part-time: 0
Support Faculty—
Full-time: 0
Part-time: 0

While some of the faculty currently employed in the Department of Curriculum and Instruction and Department of Psychology can teach some of the courses, the degree program will require the hiring of one new full-time faculty member in Year 1. This faculty member must have an educational and professional background in applied behavior analysis. It is anticipated that another full-time faculty member may be hired to support both this program and the special education program, if there is sufficient enrollment growth.

New Faculty hiring criteria are:
Minimum Qualifications:
- Doctorate or provide evidence of ADB status (doctorate must be completed by date of employment) in special education or related field with a concentration in ABA; eligible to take the examination for Board Certified Behavior Analysts as stated on the Behavior Analyst Certification Board website. BCBA must be earned within the first year of employment if credential is not held at the time of employment;

- Demonstrated potential for scholarly and creative activity;

- Knowledge of research and current best practices for teaching diverse students;

- Commitment of ongoing professional development to maintain currency in the field;

- Experience using current technology to support teaching and learning.

Preferred Qualifications:
- Board Certified Behavior Analyst-Doctoral Level (BCBA-D);

- Scholarly productivity in ABA;

- History of successful grant writing;

- Experience teaching courses on behavioral interventions for individuals;

- Active role in ABA-related professional associations;

- Experience developing and teaching online courses;

- At least one year of experience working in applied setting with individuals with autism spectrum disorders, emotional disabilities, and/or other developmental disabilities.

Support Staff: No additional staff members are requested.

Fellowships and Assistantships: There are no fellowships or assistantships specifically associated with this proposed program.

Equipment: No special equipment purchases will be required for implementation of the proposed program.

Facilities: No new facilities are required.

Library: The M. Louis Salmon Library is a 105,000 square foot facility with an Information Arcade, coffee shop, study areas, group study rooms, art gallery and five computer classrooms that serve the University. The second floor also houses the Faculty Resource Center and its staff. The library's collection includes 359 online databases (101 paid subscriptions in 2011), 628 paid subscriptions for individual serial titles (print and/or electronic), 113 standing orders for titles, over 63,000 e-books (from EBSCOhost, NCBI Bookshelf, Wiley Online Library, and three Springer collections), over 13,000 pieces of microforms, and more than 277,000 books. Including the archives, the library contains more than 392,550 items. The library also has access to a number of databases provided by the Alabama Virtual Library (AVL) and the Network for Alabama Academic Libraries (NAAL).

Currently the library has four accredited MLS librarians providing reference service, library instruction, Interlibrary Loan, and collection development. The faculty librarians are also subject specialists for the colleges on campus. Support at the reference desk and for library instruction is supplemented by two full-time MLS librarians. The librarians use the LibGuide software to create specialized library guides to assist the students in finding materials in the library for individual classes, doing research, and locating appropriate subject databases. A number of LibGuides have been created to support classes taught by the subject specialists for various colleges. The M. Louis Salmon Library also has total reciprocity with the Network of Alabama Academic libraries. Interlibrary Loan is also offered for the borrowing and lending of monographs and journal articles.

The Louse Salmon Library currently has access to 7,047 items in its "Education Collection". The Louis Salmon library currently subscribes to fifteen education journals in print. All other education periodicals are available electronically either as individual subscriptions or as part of the content of the licensed databases. According to libraries' A to Z list from the vendor EBSCO, they have access to approximately 1,924 journals that have the subject of education. This number and access to individual titles may vary from year to year according to the accessibility of the titles from the publishers and database vendors.

Program Budget: A total of $475,000 in estimated new funds will be required to support the proposed program over the first five years. A total of $492,464 will be available through internal reallocations and tuition.

Attachment 3

The University of Alabama in Huntsville
Master of Science in Applied Behavior Analysis

Proposed Program of Study

Course Number and Title	Number of Credit Hours	* If New Course
ABA Core		
EDC 610: Functional Assessment and Observation with Applied Behavior Analysis	3	*
EDC 611: Ethics and Professionalism in Applied Behavior Analysis	3	*
EDC 612: Fundamentals of Applied Behavior Analysis in Education	3	*
EDC 613: Positive Behavioral Support Systems	3	*
EDC 614: Research Methods in Applied Behavioral Analysis I	3	*
EDC 615: Research Methods in Applied Behavioral Analysis II	3	*
EDC 616: Practicum in Applied Behavioral Analysis	3	*
EDC 636: Introduction to Students with Autism Spectrum Disorders	3	
EDC 645: Assessment and Behavioral Applications in ASD	3	
Free Electives (select 2)		
ED 540: Cognitive Developmental Learning Theories	(3)	
PY 505: Psychopharmacology	(3)	
PY 530: Psychometrics	(3)	
PY 535: Theories of Abnormal Psychology	(3)	
PY 537: Psychobiology of Stress and Illness	(3)	
PY 615: Special Topics: Brain and Behavior	(3)	
PY 520: Special Topics: Learning	(3)	
PY 520: Special Topics: Counseling	(3)	

The program will build upon the current Master of Education (M.Ed.) Autism Spectrum Disorders concentration and be completed in partnership with the UAH Department of Psychology. The program will require the creation of seven (7) new courses that focus on the standards established by the Board Analyst Certification Board.

DECISION ITEM UWA-1: University of West Alabama, Master of Arts in Integrated Marketing Communications (CIP 09.0199)

EXECUTIVE SUMMARY

Reason for Action: The Code of Alabama, 16-5-8 (c) states that the governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of a new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the Commission for its review, evaluation, and approval.

Program Objective: The multiple-disciplinary approach of the proposed program syncs converging trends of traditional print, broadcast, web media, and marketing strategies with emerging technologies, such as blogs, websites, podcasts, and social media platforms. The focus on core technological competencies is supplemented by a foundation in marketing, business, and social science courses. Increasingly and understandably, companies seek employees with multiple masteries as they attempt to manage payroll costs. Consequently, the dearth of comprehensive collegiate programs like the existing UWA undergraduate Integrated Marketing Communications (IMC) program leaves employers yet in further need.

Moreover, the popularity of our well-rounded graduates suggests we could offer better qualified students who could enter the job market at a higher level if we offered a Master of Arts degree in IMC. In addition, an MA would allow those already in the workforce to return to school and improve their skills, creating additional value for their employers. The proposed program will allow graduate students to pursue "development of enhanced skills in critical thinking, communication, leadership, and computer literacy," as stated in the UWA mission.

Role: The proposed program is within the instructional role recognized by the Commission for the University of West Alabama (UWA).

Mode of Delivery: Distance education will be provided as an option for students in the proposed graduate program. One-hundred percent of the proposed program will be available via distance technology.

Similar Programs: There are no duplicative Integrated Marketing Communications (IMC) programs, undergraduate or graduate, in the state of Alabama or the SREB. UWA identified three programs with a similar CIP code. However, UWA detailed analyses of the curricula suggest that these programs are not duplicative of the proposed program. The University of West Alabama states that the proposed graduate-level IMC degree is truly unique to the state and region, and offers a unique set of skills and a cutting edge curriculum. The following institutions use the same CIP code: Alabama A&M University — MS Communications Specialist; Auburn University — MA Communication; Troy University — MS Strategic Communication.

Collaboration: The University of West Alabama would welcome opportunities to collaborate with fellow institutions in the state. UWA has already sought general guidance from colleagues associated with the MA program in Journalism with an emphasis on Integrated Marketing Communications at the University of Mississippi.

Resources: The proposal projected that $0 in new funds will be required for the program in the first five years, and that $543,036 will be available over the same period through tuition.

Public Review: The program was posted on the Commission website from January 10 until January 30 (twenty days) for public review and comments. No comments were received.

Rationale for Staff Recommendation:

1. The proposed program is unique to the state and region: There are no other duplicative programs in the state.

2. The current UWA undergraduate IMC degree has experienced tremendous growth and award-winning success. In five years, the undergraduate program has quadrupled in size, and has received 43 regional awards for student publications and work. UWA is prepared to apply this momentum to the proposed graduate program.

3. UWA has the program support to affordably offer the proposed graduate-level degree. Information included in the proposal supports that UWA boasts the necessary qualified faculty, current equipment/technology, labs/facilities, and finances to successfully implement the proposed program.

4. Career trends, industry employment demands, and current employer data suggest that multiple industries have a need for employers with skills offered in the proposed program.

DECISION ITEM UWA-1: University of West Alabama, Master of Arts in Integrated Marketing Communications (CIP 09.0199)

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: That the Commission approve the proposed Master of Arts in Integrated Marketing Communications (CIP 09.0199) with the implementation date and post-implementation conditions listed below:

Implementation Date: The proposed program will be implemented in August 2018. Based on Commission policy, the proposed program must be implemented by March 9, 2020, or Commission approval will expire. The institution must notify the Commission in writing when the program is implemented or if there is any delay in implementation.

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning 2018-19, will be at least 6, based on the proposal.

2. That the annual average number of graduates for the period 2019-20 through 2022-23 (four-year average) will be at least 6, based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates were successful in acquiring related employment or in admission to related graduate programs.

4. That information regarding an overall assessment of the program be provided, particularly as related to objectives and assessment measures stated in the proposal.

The University of West Alabama will be required to phase out the program if any of the post-implementation conditions are not met. The institution must present documentation regarding the post-implementation conditions, as well as a general assessment of the program, in a report submitted to the Commission no later than September 1, 2023.

Supporting Documentation:

1. New Academic Degree Program Proposal Summary, attached.

2. Summary of Background Information, attached.

3. Curriculum for Proposed Program, attached.

4. University of West Alabama program proposal, received November 17, 2017. Available upon request.

6. "Evaluation and Review of New Instructional Program Proposals of Public Postsecondary Institutions," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.03. Available upon request.

Attachment 1

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of West Alabama

PROGRAM: Master of Arts in Integrated Marketing Communications (CIP 09.0199)

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
FACULTY	$0	$0	$0	$0	$0	$0
LIBRARY	$0	$0	$0	$0	$0	$0
FACILITIES	$0	$0	$0	$0	$0	$0
EQUIPMENT	$0	$0	$0	$0	$0	$0
ASSISTANTSHIPS	$0	$0	$0	$0	$0	$0
STAFF	$0	$0	$0	$0	$0	$0
OTHER	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT

	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
INTERNAL REALLOCATIONS	$0	$0	$0	$0	$0	$0
EXTRAMURAL	$0	$0	$0	$0	$0	$0
TUITION	$55,224	$101,244	$119,652	$128,856	$138,060	$543,036
TOTAL	$55,224	$101,244	$119,652	$128,856	$138,060	$543,036

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS

	2018-19	2019-20	2020-21	2021-22	2022-23	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT*	6	11	13	14	15	12
NEW ENROLLMENT HEADCOUNT	5	5	7	7	8	6
						4-YEAR AVERAGE
DEGREE COMPLETION PROJECTIONS	0	5	6	6	7	6

*All students are projected to be full-time.

Attachment 2

Summary of Background Information

Master of Arts in Integrated Marketing Communications
University of West Alabama

Role: The proposed program is within the instructional role recognized by the Commission for the University of West Alabama (UWA).

Description and Objectives: The student learning outcomes for the Master of Arts in Integrated Marketing Communications are as follows:

- Demonstrate competency in planning, coordinating, executing, controlling, and measuring a communications message, to fulfill the definition of IMC, as stated by scholars Don Schultz, Stanley Tannenbaum, and Robert Lauterborn.
- Appreciate and apply a convergent multimedia approach to coursework, class projects, and the completion of a thesis project.
- Demonstrate a thorough compilation of multimedia skills, including writing, broadcasting, videography, photography, graphic design/layout, web design publishing, advertising, and public relations.
- Demonstrate competency with multiple computer software programs to effectively produce multimedia messages.
- Demonstrate competency in market analysis, market research, and the preparation of promotional strategies.

Assessment: The planning process at the University of West Alabama is a tiered process, beginning at the unit level, then moving to the Dean/Vice President level at the Dean's Council and culminating at the President's Council, where the direction and budget is set for the upcoming year. It is a continuous process designed to involve all areas of the institution and maintain comprehensive participation. By the end of May, all units complete the planning portion of the process for the upcoming academic year. This process includes developing, reviewing, and/or updating objectives that link to specific University goals and determining expected results to form a comprehensive assessment plan. This plan is designed to guide academic units in assessing the quality of academic programs or the operations/services of non-academic units.

The planning process is done collectively, allowing all vested individuals a voice in the process. By the end of September, all units perform a self-study to analyze the results of assessment activities from the previous academic year. Using the self-study results, all units develop strategic action plans and note any resources needed to accomplish set outcomes/objectives. This process allows each unit to determine which parts of their current comprehensive assessment plan are working well and/or which areas need improvement. When the self-study process is complete at the unit level, all planning and assessment documents are forwarded to the Dean/Vice President.

Documents are then reviewed and approved by the Dean/Vice President by the end of October. For both academic and non-academic units, the Deans/Vice Presidents then develop executive summaries once the planning and assessment documents have been revised according to the Dean's recommendations. These summaries are comprised of key accomplishments from the previous academic year and needed resources for the upcoming academic year. The Deans then forward the summaries and budget requests to the Office of Institutional Effectiveness and the

Provost. The Office of Institutional Effectiveness and Retention (OIER) posts the summaries online on the OIER web page. Also at this point, the Provost convenes the Deans' Council to aid in the integration of the summaries and planning statements for presentation to the President's Council.

During the Spring Semester, the Dean's Council and President's Council are convened. The executive summaries and budget requests are reviewed by the Dean's Council members. The Council works to integrate the planning statements with budget requests and establish institutional priorities. The planning priorities established at the Dean's Council serve to guide final budget prioritization and budget recommendations to the President's Council. The President's Council considers the recommendations of the Dean's Council as a University Plan is developed that determines the direction the University will take, which plans are to be supported and implemented immediately, and the availability of needed resources. Final budget proposals are then presented to the Board of Trustees for approval.

The current UWA IMC undergraduate program boasts an interactive, heavily-used "UWA IMC Alumni" closed-group, private Facebook page. This page is used to track program alumni, post job announcements, and receive responses from program feedback. We plan to use the same private Facebook page with alumni from the graduate program. We currently have 95 percent feedback with existing alumni from the undergraduate program, and estimate similar results from alumni from the proposed program.

Recent graduates will also be surveyed annually to determine their acceptance and success rates in their desired professional program as well as their satisfaction with their undergraduate preparation.

Administration: The program will be administered by the UWA College of Liberal Arts, Dr. Mark Davis, Dean; and by the Department of Languages and Literature, Dr. Kendrick Prewitt, Chair; as well as Dr. Amy Jones, Program Director.

Peer Review: The Notification of Intent to Submit a Proposal (NISP) and the program proposal were reviewed by the Alabama Council of Graduate Deans (ACGD). Four responses were received by the ACHE agenda publication date; all four voted for program approval.

Accreditation: There is not a specialized accreditation agency for the proposed program.

Curriculum: The requirements for the proposed program are listed below.

Credit hours required in major courses	18
Credit hours required in minor	N/A
Credit hours in institutional general education or core curriculum	N/A
Credit hours required in support courses	N/A
Credit hours in required or free electives	9
Credit hours for thesis or dissertation	3
Total credit hours required for completion	**30**

The proposed MA in IMC will consist of 30 hours of graduate work in communications, marketing, and management. Students will complete a 9-hour IMC core (including a 3-hour thesis project), 12 hours of additional communications courses, and 9 hours of marketing and management electives. From the marketing and management electives, students will choose from existing graduate courses in marketing, entrepreneurship, and sport management. Additionally, students will have the option to capitalize on existing graduate-level study abroad opportunities. Therefore, this program will be supported by the existing MBA program and the UWA Office of International Programs.

Collaboration: The University of West Alabama would welcome opportunities to collaborate with fellow institutions in the state. UWA has already sought general guidance from colleagues associated with the MA program in Journalism with an emphasis on Integrated Marketing Communications at the University of Mississippi.

Distance Education: Distance education will be provided as an option for students in the proposed graduate program. One-hundred percent of the proposed program will be available via distance technology. As with the UWA undergraduate IMC program, distance education will be provided as an option for students in the proposed graduate program. Remote Proctor, Kaltura, and Citrix will be used to ensure that the quality of instruction offered via distance technology is comparable to and mirrors the quality of instruction on-campus.

Admissions: UWA plans to use the following admission requirements for the proposed program: Graduation from an accredited college or university with a bachelor's degree with a minimum of 2.75 grade point average (four-point scale) or graduation from an accredited college or university with a master's degree or higher with a minimum of 3.0 grade point average (four-point scale).

In addition to GPA requirements, applicants must also submit a resume, statement of purpose, and two letters of reference. Applications will be reviewed by the admissions committee, which will consist of the Dean of the College of Liberal Arts, the Director of Integrated Marketing Communications, and one faculty member. Applications are welcomed from international students who wish to attend UWA.

In addition to meeting the regular admission requirements, foreign applicants whose native language is not English must submit satisfactory scores on the Test of English as a Foreign Language (TOEFL). A minimum TOEFL score requirement of 550 on the paper-based TOEFL or 79 on the iBT, 6.5 on the IELTS, and 180 on the Cambridge English Scale is required. International students who have graduated from English-speaking undergraduate schools are exempt from the TOEFL requirement.

Need: To gauge a state, regional, and national need, three additional factors were considered (employment demands, industry need, and academic need). An employment report was conducted that shows employment growth greater than the typical average of 7 percent in more than 75 percent of the employment categories related to the proposed program. Furthermore, Alabama employment predictions mirror the national averages with a projected growth of 415 annual openings each year through 2026. The curriculum for the proposed program was designed to include the advanced skills required for these occupations.

In a variety of marketing and communications industries, IMC, as detailed in an article by Ian Linton in the Small Business Chronicle, has numerous benefits to small businesses and large organizations. IMC achieves greater communication and marketing results, saves businesses money, and reinforces messages through consistency. In short, IMC is growing to become more popular than traditional methods. Linton's argument is reinforced by the declining employment opportunities in traditional journalism at the national, regional, and state levels. Additional publications by Forbes Magazine and others reiterate that IMC skills in various levels of business are more important than ever before.

Finally, there are no other graduate programs of this type offered at Alabama's state institutions. The nearest program is housed at Florida State University. The UWA program would not only be unique to the state, but would be one of few in the Southeastern region. UWA anticipates that the graduate program will grow in popularity based on the state-wide need for this type of multiple-disciplinary program.

Career and College Readiness/Preparation -- Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Local	54	54	54	54	54	270
State	415	415	415	415	415	2,076
SREB	388	388	388	388	388	1,938
Nation	34,071	34,071	34,071	34,071	34,071	170,355

An employment report was conducted using the 2016 Occupational Outlook Handbook available from the United States Department of Labor, Bureau of Labor statistics website for the top occupations that frequently require a graduate-level degree or extensive work experience in the industry. Results show that management and expert positions in the related industries often require or prefer a graduate-level degree. Furthermore, research on the national and state projections through the year 2026 shows that careers requiring IMC graduate-level skills are growing.

Student Demand: To measure student demand for an IMC master's program, current undergraduate IMC students completed a Survey Monkey assessment in fall 2017. The 66 respondents fairly represented each college class rank with 14 freshmen, 10 sophomores, 20 juniors, and 22 seniors. Females represented 71 percent of the survey, mirroring our historical population mix. Of the 66 survey participants, 51 percent indicated that they were "very likely" (33 percent) or "likely" (18 percent) to enroll in a UWA integrated marketing communications graduate program offered on campus, while 50 percent indicated they were "very likely" (17 percent) or "likely" (33 percent) to enroll in a UWA integrated marketing communications graduate program offered online. The nearly perfect reversal of these preferences suggests that once students are on campus they are prone to stay on campus to complete both programs rather than enter the job market and return to school part-time or convert to online-only.

The IMC alumni survey bears out this observation with 44 percent indicating interest in an on campus program versus 77 percent for an online program. Also worth noting is that 29 percent indicated they were "somewhat interested" in the proposed program on campus, and 31 percent were "somewhat interested" if the proposed program was offered online. Alumni reported 28 percent and 17 percent, respectively.

The undergraduate survey revealed that 20 of students are first generation college students, while 35 percent are from households with a single college graduate. Furthermore, the survey demonstrated that many of our students have had exposure to IMC-related courses in high school, with 57 percent working on yearbook staffs, 35 percent taking journalism courses, and 33 percent taking photography.

Separate Alumni Survey conducted. To further measure student demand for an IMC master's program, 32 IMC alumni completed a separate Survey Monkey assessment in fall 2017. Currently, 3 are pursuing advanced degrees, and 20 are employed in IMC-related positions. As mentioned above, 44 percent of IMC graduates expressed strong interest in an on campus master's program, and 77 percent indicated interest in an online program.

To further gauge real interest and eliminate financial considerations, the survey assessed whether a paid graduate assistantship would encourage their choice to complete an integrated marketing communications master's program. Only 9 percent said "no," and only 13 percent said

"maybe." In other words, 91 percent expressed interest in pursuing an advanced degree, and 25 percent are already aware of employer-paid education benefits.

The perceived value of an advanced degree is high among our alumni. Former students indicated a master's degree was "very likely" (56 percent) or "likely" (34 percent) to advance their careers, a fact supported by their assessments of their current workplaces. Some 66 percent indicated they work on staffs where less than 25 percent who hold advanced degrees. Moreover, 78 percent of respondents believe their present employers would benefit from employees who hold advanced degrees.

From a list of 13 skill areas, alumni were asked to identify three areas—based on their work history—that could be more fully addressed by a master's program. Five areas received more than 30 percent of the selections, including social media, web design, public relations, corporate branding, and research. Not coincidentally, these areas represent a significant portion of the proposed program coursework. In addition, an even greater emphasis will be placed on creating digital, web, and physical portfolios made up of actual client work, a need represented by 50 percent as critical in securing their last work position.

Resources:

Faculty:

Current Primary Faculty—
Full-time: 4
Part-time: 2
Support Faculty—
Full-time: 2
Part-time: 0

Additional Faculty to Be Hired:
Primary Faculty—
Full-time: 0
Part-time: 0

Support Faculty—
Full-time: 0
Part-time: 0

Support Staff: No additional support staff will be needed.

Fellowships and Assistantships: No assistantships will be offered specifically for this program.

Equipment: No special equipment will be needed specifically for this program. The existing UWA Integrated Marketing Communications undergraduate program holds an extensive collection of video, audio, and photography equipment to support all students. Students enrolled in the proposed graduate program will have full access to the equipment and facilities.

Facilities: No new facilities will be required specifically for the program. The existing UWA IMC program has well equipped facilities, including a Mac lab, the Livingston Press, and Studio 96 (the campus television studio).

Library: The level of library appropriations for journalism, communications, media ethics and law, television production, marketing, advertising, and sociology supports a Level 3 collection strength for the proposed program.

Moreover, the Library has a book collection of 8,030 titles to support study and research in the academic areas that are included in the Integrated Marketing Communications program. With few exceptions, the books that support the major were the highly recommended books listed in Choice: Current Reviews of Academic Libraries, published monthly by the Association of College and Research Libraries—a division of ALA. The Library also subscribes to Choice Books Online and Choice Reviews on Cards which permits the distribution of the monthly reviews to individual faculty members.

In addition to housing a quality basic book collection, the Library subscribes to 32 online full text databases that support the Integrated Marketing Communication program, including the Communications and Mass Communications database—the premier database for journalism, mass communications and related fields. Through these online databases and hardcopy subscriptions, students have access to full text articles in 34,764 peer reviewed journals, which include full text journals that date back to the nineteenth and early twentieth centuries. In addition, the databases provide a sizeable collection of full text access to monographs, papers, proceedings, and conference reports in the academic fields that comprise the Integrated Marketing Communications program.

The University of West Alabama has been able to provide the databases to its students because of consortia pricing through the Network of Alabama Academic Libraries (NAAL). In addition to the UWA databases, students have access to other databases that support the Integrated Marketing Communications major through the Alabama Virtual Library (AVL). The Julia Tutwiler Library provides links to these databases on its homepage, thus allowing students direct access to the AVL.

In summary, the resources of the Julia Tutwiler Library are more than adequate to support the Integrated Marketing Communications program at Level 3 collection strength and collection intensity. This level supports research and study at the undergraduate and graduate levels.

Program Budget: The proposal projected that $0 in new funds will be required for the program in the first five years, and that $543,036 will be available over the same period through tuition.

Attachment 3

The University of West Alabama
Master of Arts in Integrated Marketing Communications (CIP 09.0199)

Course Number and Title	Number of Credit Hours	* If New Course
Complete 9 Hours of core communications courses:		
IMC 500: Exploration of Mass Media The exploration of software programs, processes, and publications used in the development of mass media messages.	3	*
IMC 595: IMC Thesis Project The completion of a thesis project supported by a comprehensive multimedia portfolio project. Prerequisite: 15 credit hours in the program.	3	*
IMC 599: Professional IMC Internship Work a minimum of 135 hours with an approved employer in IMC, resulting in a minimum of three portfolio entries. Prerequisites: Permission of the Director of Integrated Marketing Communications.	3	
Complete 12 hours from the following communications electives:		
IMC 550: Media Campaigns The practice of public relations and advertising through the development of commercial touchpoints, with an emphasis on advanced tools to generate commercial portfolio work. Prerequisite: IMC500.	3	*
IMC 555: Multimedia Strategies The application of advertising and public relations theory to generate solutions for industry brand identity problems.	3	*
IMC 560: Graphic Design Studio The development of portfolio-level graphic design solutions for multiple platforms.	3	*
IMC 570: Broadcast Production The advanced production of video and audio projects for clients.	3	*
IMC 575: Commercial Video Production The application of visual cues and media theory in production and post-	3	*

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production of commercial video projects.		
IMC 598: Selected Topics in IMC Readings, lectures, discussions, and projects in topics not generally included in course offerings. Course content and format determined by students' needs and interests. Prerequisites: Permission of the Director.	3	
Complete 9 hours from the following Marketing and Management electives:		
IMC 590: Methods of Social Media Theoretical and experiential instruction in the use of new and social media at the graduate level.	3	
MK 500: Marketing Management Topics include marketing methods, strategies and tactics via systematic approaches towards marketing decisions regarding the analysis, design, implementation, and control of marketing strategies; organizational marketing decisions within managerial levels; considerations of marketing campaign success and failure.	3	
MK 511: Behavioral Marketing and Advertising This course introduces contemporary research that integrates the psychology of human preferences and motivations with the contemporary worlds of consumer behavior, marketing, advertising, and media. Topics include origins of human preferences, tastes, and motivations; gifts, biological signaling theory, and conspicuous consumption; spatial cognition; aesthetics of product design; fads and fashions; psychological aspects of product and service industries with respect to influencing human decisions; use of psychology in marketing research and product development.	3	
MK 512: Electronic Branding and Strategy This course examines organizational branding methods among electronic markets. Topics include the use of integrated and digital media (e.g., websites, social networks, blogs, wikis, mobile, etc.), mental and conceptual models, interaction, consumer influences, advertising design, virtual channels, campaigns, life cycles, and communication within the contexts of electronic marketing and advertising.	3	
MK 513: Strategic Marketing The student strategically examines the life cycle management of a product from inception to its demise. Specific topics covered in the course include the product development cycle, product assortment decisions, advertising, branding, pricing, competitiveness, and others decisions that impact strategically the product life cycle. Specific emphasis is placed on identifying problems, investigating alternative solutions, and rendering appropriate strategies and decisions.	3	
MG 550: Entrepreneurship This course introduces venture business concepts within the contexts of different competitive environments and diverse national economies. Topics include demand analysis, funding, product development, product pricing, marketing organization, foreign representation and distribution systems, promotion, advertising, sales, service, and regulatory issues as they relate to international venture projects.	3	
SM 537: Sport Management and Marketing Examination of strategic marketing, advertising, and public relation concepts in sport. The course covers elements of marketing research, licensing and merchandising, event marketing, sponsorship, and corporate advertising. The course will also focus on public and media relations with a special focus on message development, image building, and crisis management of sport organizations. Project required.	3	
ST 501: Study Abroad 1 Master's level study abroad experience course one. Prerequisites: Approved for study abroad credit by International Programs and written signature of the academic dean.	1-6	
ST 502: Study Abroad 2 Master's level study abroad experience course two. Prerequisites: Approved for study abroad credit by International Programs and written signature of the	1-6	

academic dean.		

INFORMATION ITEM 1: Implementation of Approved Programs

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: For information only.

Background: Commission guidelines state that a new program should be implemented in accordance with the timeline presented in the proposal. They further state that any institution having an approved program must notify the Commission in writing when the program is implemented (that is, when the institution has admitted the first student or students into the program). The institution also must notify the Commission in writing if the stated date or academic term of implementation changes. If the program is not implemented within 24 months of the date of approval, regardless of whether the Commission has been notified of the delay, the approval will expire, and the program will be removed from the Commission's Academic Program Inventory. Once an approval has expired, an institution must submit a new program proposal and receive Commission approval of the new proposal in order to offer the program.

Programs Implemented: In accordance with these guidelines, the following institution has sent notification that the program listed has been implemented.

University of South Alabama
Program: Bachelor of Science in Business Administration in International Business, BSBA, CIP 52.1101
Approval date: June 9, 2017
Implementation date: January 2018 (delayed)
Post-implementation report date: February 1, 2023

Programs Not Implemented: Commission approval has expired for the following programs that were not implemented by the implementation deadline.

None.

Supporting Documentation: "Guidelines on Implementation of a New Program," adopted by the Commission on October 12, 2001, revision approved on September 23, 2005. Available upon request.

INFORMATION ITEM 2: Summary of Post-Implementation Reports

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: For information only.

Background: Programs that met post-implementation conditions:

- Auburn University, Program: Bachelor of Science in Organismal Biology (CIP 26.0101)
- Calhoun Community College, Program: Associate in Applied Science and Certificate in Surgical Technology (CIP 51.0909)

Program that did not meet post-implementation conditions: None.

Supporting Documentation:

1. Unpublished post-implementation reports submitted by the institutions. Available upon request.
2. "Summary of Reports on Post-Implementation Conditions," attached.

Summary of Reports on Post-Implementation Conditions
[Listed by Institution]

Meeting Conditions:

Auburn University (2018 Report)

- Program: Bachelor of Science in Organismal Biology (CIP 26.0101)

Approved by Commission: December 7, 2012

Proposed Implementation Date: January 2013

Actual Implementation Date: January 2013

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning in 2013-14 will be at least 30, based on the proposal.

2. That the average number of graduates for the academic years 2014-15 through 2017-18 (four-year average) will be at least 15 based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates' were successful in acquiring related employment.

4. That information regarding an overall assessment of the program will be provided, particularly as related to objectives and assessment measures stated in the proposal.

Bachelor of Science in Organismal Biology (CIP 26.0101)	Average New Enrollment Headcount 2013-14 through 2017-18	Average Number of Graduates, 2014-15 through and 2017-18	Percentage of Graduates Employed in The Field
Required	30	15	75%
Reported	90	27	81%

Note: New student transfers comprise an additional average of 12 students per year.

Condition 1: According to the report, the enrollment count benchmark was met.

Condition 2: The program did meet the graduation post-implementation requirement.

Condition 3: Eighty-one percent of the graduates were successful in acquiring related employment or were continuing their education.

Condition 4: Several assessment measures show that the assessment condition has been met. For example, students produce a formal scientific paper in organismal biology to professional scientific standards. The assessment results indicate that the students are being prepared to meet the needs of the aims and objectives of this program.

Meeting Conditions:

Calhoun Community College (2018 Report)

- Program: Associate in Applied Science and Certificate in Surgical Technology (CIP 51.0909)

Approved by Commission: September 14, 2012

Proposed Implementation Date: January 2013

Actual Implementation Date: January 2013

Post-Implementation Conditions:

1. That the annual average new enrollment headcount for the first five years, beginning in 2012-13 will be at least 26, based on the proposal.

2. That the average number of graduates for the academic years 2012-13 through 2016-17 (five-year average) will be at least 8 based on the proposal.

3. That a follow-up survey be conducted after the first five years that will show at least 75 percent of the graduates' were successful in acquiring related employment.

4. That information regarding an overall assessment of the program will be provided, particularly as related to objectives and assessment measures stated in the proposal.

Associate in Applied Science and Certificate in Surgical Technology (CIP 51.0909)	Average New Enrollment Headcount 2012-13 through 2016-17	Average Number of Graduates, 2012-13 through and 2016-17	Percentage of Graduates Employed in The Field
Required	26	8	75%
Reported	27	16	99% (83/84)

Condition 1: According to the report, the enrollment count benchmark was met.

Condition 2: The program did meet the graduation post-implementation requirement.

Condition 3: Ninety-nine percent of the graduates were successful in acquiring related employment or were continuing their education.

Condition 4: The assessment condition has been met. One-hundred percent of the graduates (N = 84) within this timeframe have passed the National Board of Surgical Technology and Surgical Assisting (NBSTSA) Certified Surgical Technology (CST) Exam. The Commission on Accreditation of Allied Health Education Programs (CAAHEP) awarded continuing accreditation to the CCC Surgical Technology program on January 20, 2014.

INFORMATION ITEM 3: Implementation of New Short Certificate Programs (Less than 30 Semester Hours)

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: For information only.

Background: The Alabama Community College System reports the approval of short certificate programs (less than 30 semester hours) at the following two-year colleges in the fields of study listed below.

Bevill State Community College

Field of Study	CIP Code
Power Distribution	46.0399
APP Development with Swift	11.0101
Dental Assisting	51.0601

Drake State Community and Technical College

Field of Study	CIP Code
Multi-Interdisciplinary Studies	30.9999

Enterprise State Community College

Field of Study	CIP Code
Medical Assistant Technology	51.0801

Gadsden State Community College

Field of Study	CIP Code
Masonry w/emp in Masonry Brick/Construction	46.0101
Masonry w/emp in Fireplace/Stone Construction	46.0101
Welding w/emp in Basic Structural	48.0508
Welding w/emp in Basic Advanced Structural	48.0508
Computer Science w/emp in Swift Coding	11.0101

Lawson State Community College

Field of Study	CIP Code
Logistic and Supply Chain Technology	52.0209

Northeast Alabama Community College

Field of Study	CIP Code
Multi-Interdisciplinary Studies	30.9999
Carpentry (Level 1)	46.0201
Carpentry (Level 2)	46.0201

Shelton State Community College

Field of Study	CIP Code
Polysomnography	51.0999
Apple App Development	11.0101
Android App Development	11.0101
Networking	11.0101
Database Management	11.0101

Southern Union State Community College

Field of Study	CIP Code
Industrial Maint. w/emp in Basic Tool & Die Mold Focus	47.0303

Trenholm State Community College

Field of Study	CIP Code
Computer Information Science w/emp in Program Coding	11.0101
Automotive Manufacturing w/emp in Manufacturing Systems Technology	15.0613
Automotive Manufacturing w/emp in Certified Production Technician	15.0613

Supporting Documentation:

1. "Reasonable Extensions and Alterations of Existing Units and Programs of Instruction," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.06. Available upon request.

2. Written unpublished documentation provided by the Alabama Community College System. Available upon request.

INFORMATION ITEM 4: Changes to the Academic Program Inventory

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: For information only.

Background: According to the Commission's definitions relating to program review (Alabama Administrative Code, Chapter 300-2-1, Review of Programs & Other Units of Instruction), additions and certain extensions or alterations of units and programs of instruction must be submitted as information items not requiring Commission approval. Examples of information items, according to the operational definitions, include: 1) changes in program titles or CIP codes or degree nomenclatures at the same level (except doctoral) provided no changes in program requirements, content, or objectives are made, and provided the new nomenclature replaces the current designation; 2) programs placed on inactive status or deleted from the Academic Program Inventory; 3) change in award for completion from Diploma to Associate in Applied Technology in technical colleges provided certain conditions are met; 4) change in award for completion from Associate in Applied Technology to Associate in Applied Science in technical colleges provided certain conditions are met; and 5) change in award for completion from Diploma and/or Certificate to Associate in Applied Science in community colleges.

Supporting Documentation:

1. Academic Program Inventory. Available on the Commission's Website: www.ache.alabama.gov .
2. "Reasonable Extensions and Alterations of Existing Units and Programs of Instruction," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1.06. Available upon request.
3. Written unpublished documentation provided by the institutions. Available upon request.

A. Program Inventory Deletions

Institutions may voluntarily elect to delete program entries/awards from the Commission's Academic Program Inventory. However, institutions understand that these programs/awards cannot be reinstated to the Academic Program Inventory in the future without undergoing the regular process for new program review and approval.

University of Alabama in Huntsville	30.0101	Integrated Science, Technology, Engineering & Mathematics, MS
Coastal Alabama Community College	19.0505	Commercial Food Service, C
	48.0303	Upholstery, C
	22.0303	Court Reporting, AAS
	52.0401	Office Administration, AAS

B. Changes in CIP Codes, Program Titles, or Degree Nomenclature

The following changes in CIP codes, program titles, or degree nomenclature represent no changes in program requirements, content, and objectives and are recommended as information items.

Auburn University Montgomery	11.1003	~~Cybersystems and Information Security~~, MS Computer Information Systems & Cyber Security
	51.0701	~~Healthcare Informatics and Leadership~~, MS Healthcare Administration
University of Alabama	~~13.1314~~ 31.0505	~~Human Performance~~, BSEd Kinesiology
	~~13.1314~~ 31.0505	~~Human Performance~~, MA Kinesiology
	31.0505	~~Human Performance~~, PhD Kinesiology

C. Programs Placed on Inactive Status

INFORMATION ITEM 5: Implementation of Non-Degree Programs at Senior Institutions

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: For information only.

Background: Commission guidelines state that non-degree programs of senior institutions, including pre-baccalaureate, post-baccalaureate, and postmaster's certificates do not require Commission approval, but they must be reported to the Commission prior to implementation. The guidelines further state that these certificates are not listed in the Commission's Academic Program Inventory.

In accordance with these guidelines, the following institutions have sent notification regarding the non-degree programs indicated:

Auburn University

Graduate Certificate in Health Equity Science

The proposed certificate will address a need for understanding well-documented health disparities between population groups. The graduate certificate will be administered through the College of Human Services under the purview of the Center for Health Ecology and Equity Research. Graduate students completing the 9-credit hour certificate program will have a strong understanding of the role of social context in generating disease risks and disparities in health between groups.

Graduate Certificate in Computational Biology

Students who successfully complete the 18-credit hour graduate certificate will exhibit proficiency in the comprehensive planning and implementation of computationally intensive experiments and analyses of biological data originating from various sources ranging from next generation DNA sequencing to readings from high-throughput equipment and sensors.

Graduate Certificate in Advanced Research Methods for Developmental and Family Studies

The proposed 18-hour certificate is designed to produce graduate students who have obtained expertise in a given research area but lack advanced methodological and statistical training, a highly sought after capability in today's job market. Additionally, the program will make the Human Development Family Studies graduate program more attractive to high caliber graduate school applicants, increasing the quality of the department overall.

Undergraduate Certificate in Leadership for a Global Society

The proposed undergraduate level certificate consists of 12 credit hours within AU's College of Liberal Arts. The certificate can be completed by regularly enrolled degree-seeking AU students and non-degree seeking students and can be a great asset for students in any major, business, non-profit, political and academic setting who will be 21st century citizens and leaders.

Auburn University Montgomery

Graduate Certificate in Museum Studies

Students will complete 15 credit hours to attain the Museum Studies Certificate. Museum work is a highly specialized field which requires significant specialized knowledge about the care, maintenance, interpretation, and preservation of objects. Museum studies considers all aspects of the theory and practice of museum operations, including the history and background of museums, their role in society, their general organizational structure, and specifics regarding best practices for museum operations, collections care, collections management and registration, conservation, and administration, along with professional standards for research, education, and interpretation.

Graduate Certificate in Data Analysis and Policy Evaluation

The proposed certificate is a five-course graduate certificate program offered by the AUM Master's Program in Public Administration to students seeking the MPA degree as well as to non-degree seeking graduate students. The certificate seeks to provide students with an understanding of the methodological tools including appropriate statistical techniques, for collecting, analyzing, interpreting, and presenting data to support policy decision.

University of Alabama

Graduate Certificate in Instructional Technology

The proposed 15-credit hour graduate certificate in Instructional Technology provides students with the knowledge, skills and dispositions to effectively: 1) integrate technology within the student's teaching as a means of improving learning outcomes; 2) design and deliver distance and online courses; and 3) lead campus and organizational instructional technology initiatives. The program will take a research-to-practice approach by grounding instructional technology practice in research based evidence.

University of Alabama at Birmingham

Graduate Certificate in Advanced Dental Esthetics, Restorative & Biomaterials

The proposed graduate certificate seeks to provide care for patients seeking advanced treatment in restorative and esthetic dentistry. The certificate program will develop research projects to address the clinical challenges experienced in esthetic and restorative dentistry with new advancements in dental material science.

Supporting Documentation:

1. "Reasonable Extensions and Alterations of Existing Units and Programs of Instruction," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.06. Available upon request.

2. Written unpublished documentation provided by the institution. Available upon request.

INFORMATION ITEM 6: Implementation of a Distance Education Program

Staff Presenter: Ms. Margaret Pearson
Academic Program Review Analyst

Staff Recommendation: For information only.

Background: Commission policy states that academic programs approved by the Commission do not require additional approval to be configured and offered as distance education programs. However, institutions preparing to offer existing programs as distance education offerings must report this intent to the Commission prior to implementation.

In compliance with the Commission's policy on distance education, the following institution has reported plans to implement the distance education program listed.

University of Montevallo:

Instructional Leadership, MEd – CIP 13.0401

Supporting Documentation:

1. "Policy on Distance Education," Ala. Admin Code (Commission on Higher Education), r. 300-2-3-.04. Available upon request.

2. Written unpublished documentation provided by the institutions. Available upon request.

INFORMATION ITEM 7: Extensions/Alterations to Existing Programs of Instruction

Staff Presenter: Dr. Lenny Lock
Director of Instruction and Special Projects

Staff Recommendation: For information only.

Background: The Code of Alabama, 1975, Section 16-5-8 (c) states,

> "The governing boards of public institutions of higher education in this state and the campuses under their governance or supervision shall not undertake the establishment of any new unit or program of instruction for academic credit with state funds before submitting plans for the new unit or program to the commission for its review, evaluation, and approval. No state funds shall be expended by any public institution on any new unit or program of instruction which has not been approved by the commission…. The term "new unit of instruction,"…. does not include reasonable extensions or alterations of existing curricula, or programs which have a direct relationship to existing programs. The commission may, under its rulemaking power, define the character of the reasonable extensions and alterations."

As directed in the Code of Alabama Section cited above, the Alabama Commission on Higher Education has defined what is considered as "reasonable." See Alabama Administrative Code (Commission on Higher Education), r. 300-2-1-.06".

The staff has reviewed the items listed in Attachment 1 and has determined that they are reasonable extensions/alterations of existing programs.

Consistent with Commission policy and operational definitions, the specialization will not be identified separately in the Commission's Academic Program Inventory, and the institution may not identify it as a degree program.

Supporting Documentation:

1. Attachment 1: Proposed Extensions and Alterations to Existing Programs.
2. Reasonable Extensions and Alterations of Existing Units and Programs of Instruction," Ala. Admin. Code (Commission on Higher Education), r. 300-2-1-.06. Available upon request.
3. "Guidelines for Approval of Certificate Programs in Existing Associate Applied Science (AAS) and Associate in Applied Technology (AAT) Programs." Available upon request.
4. Written unpublished documentation provided by the institution. Available upon request.

Attachment 1

Proposed Extensions and Alterations to Existing Programs of Instruction
March 9, 2018

(1) Alabama State University, Addition of a Concentration in Computational Mathematics to the Existing BS in Mathematics (CIP 27.0101)

Alabama State University (ASU) has the BS in Mathematics at CIP 27.0101 in the Commission's Academic Program Inventory. ASU has proposed the addition of a Concentration in Computational Mathematics to the existing program. The program with the concentration will require a total of 121 semester hours. The concentration will consist of 33 semester hours. **Budgetary Impact: None**.

(2) Alabama State University, Addition of a Concentration in Applied Discrete Mathematics to the Existing BS in Mathematics (CIP 27.0101)

Alabama State University (ASU) has the BS in Mathematics at CIP 27.0101 in the Commission's Academic Program Inventory. ASU has proposed the addition of a Concentration in Applied Discrete Mathematics to the existing program. The program with the concentration will require a total of 121 semester hours. The concentration will consist of 33 semester hours. **Budgetary Impact: None**.

(3) Alabama State University, Addition of a Concentration in Mathematical Statistics to the Existing BS in Mathematics (CIP 27.0101)

Alabama State University (ASU) has the BS in Mathematics at CIP 27.0101 in the Commission's Academic Program Inventory. ASU has proposed the addition of a Concentration in Applied Discrete Mathematics to the existing program. The program with the concentration will require a total of 121-124 semester hours. The concentration will consist of 33-36 semester hours. **Budgetary Impact: None**.

(4) Auburn University, Addition of an Option in Bioprocess Engineering to the Existing BBE in Biosystems Engineering (CIP 14.4501)

Auburn University (AU) has the BBE in Biosystems Engineering at CIP 14.4501 in the Commission's Academic Program Inventory. AU has proposed the addition of an Option in Bioprocess Engineering to the existing program. The program with the option will require a total of 127 semester hours. The concentration will consist of 36 semester hours. **Budgetary Impact: None**.

(5) University of Alabama, Addition of a Concentration in Precision Timing to the Existing MS in Physics (CIP 40.0801)

The University of Alabama (UA) has the MS in Physics at CIP 40.0801 in the Commission's Academic Program Inventory. UA has proposed the addition of a Concentration in Precision Timing to the existing program. The program with the option will require a total of 34 semester hours. The concentration will consist of 12 semester hours. **Budgetary Impact: None**.

(6) University of Alabama, Addition of a Concentration in Precision Timing to the Existing PhD in Physics (CIP 40.0801)

The University of Alabama (UA) has the PhD in Physics at CIP 40.0801 in the Commission's Academic Program Inventory. UA has proposed the addition of a Concentration in Precision Timing to the existing program. The program with the option will require a total of 72 semester hours. The concentration will consist of 12 semester hours. **Budgetary Impact: None**.

(7) University of Alabama at Birmingham, Addition of a Concentration in Sports Communication to the Existing BA in Communication Studies (CIP 09.0101)

The University of Alabama at Birmingham (UAB) has the BA in Communication Studies at CIP 09.0101 in the Commission's Academic Program Inventory. UAB has proposed the addition of a Concentration in Sports Communication to the existing program. The program with the option will require a total of 120 semester hours. The concentration will consist of 33 semester hours. **Budgetary Impact: None**.

INSTITUTIONS OF HIGHER EDUCATION