



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

The following must be submitted to complete a new program request:

**Approved by SHP AAC
on October 8, 2025**

Submission Checklist:

- New Program Proposal
- Business Plan (<https://www.ache.edu/index.php/forms/>)
- Undergraduate or Graduate Curriculum Plan (<https://www.ache.edu/index.php/forms/>)

Primary Contact Information

Institution: University of Alabama at Birmingham

Contact: Katrina Mintz

Title: Associate Vice Provost, Assessment, Accreditation, and Academic Planning

Email: kmintz@uab.edu

Telephone: (205) 934-2753

Program Information

Date of Proposal Submission: 1/1/2024

Award Level: Other Doctoral (IPEDS 19)

Award Nomenclature (e.g., BS, MBA): Ph.D.

Field of Study/Program Title: Doctor of Philosophy in Health Physics

CIP Code (6-digit): 51.2205

Administration of the Program

Name of Dean: Andrew Butler

Name of College/School: School of Health Professions

Name of Chairperson: Floyd Josephat (interim)

Name of Department/Division: Clinical and Diagnostic Sciences

Implementation Information

Proposed Program Implementation Date: 8/3/2026

Anticipated Date of Approval from Institutional Governing Board: Click or tap to enter a date.

Anticipated Date of ACHE Meeting to Vote on Proposal: Click or tap to enter a date.

SACSCOC Sub Change Requirement (Notification, Approval, or NA): Choose an item.

Other Considerations for Timing and Approval (e.g., upcoming SACSCOC review):



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

I. Program Description

A. Concise Program Summary (one paragraph) to be included in ACHE Agenda:

Health Physics is the science of radiation protection. Health Physicists are radiation safety professionals that protect people and the environment from harmful effects of radiation to enable its beneficial uses. Health Physics differs from Medical Physics, which shares the same CIP code. Medical Physicists are clinical specialists that treat patients using radiation. The UAB Health Physics MS program has seen steady growth from five students per cohort in 2020 to 20 students in the Fall 2025 cohort. Demand for the MS program currently exceeds capacity, which is partly limited by the availability of faculty to teach and mentor in the program. This is part of the driving force behind the need for the proposed PhD program. The proposed Ph.D. in Health Physics at UAB will be a rigorous research-focused program designed to advance knowledge in radiation science and its applications in health and safety. This interdisciplinary program will prepare students to address complex challenges in radiation protection, dosimetry, environmental monitoring, medicine, and nuclear power. Students will engage in cutting-edge research under the mentorship of leading experts, leveraging existing UAB facilities and a network of industry and government partners to explore topics such as radiation risk assessment, radiobiology, novel radiopharmaceutical development, radiation effects on the environment, and radiological issues with advanced nuclear fission and fusion plants. Funding for future PhD students is already being included in grant applications from National Institutes of Health, the Nuclear Regulatory Commission, the Department of Energy, and others. Graduates of the program are equipped for leadership roles in academia, industry, government, and healthcare, contributing to advancements in public health and radiation safety worldwide. This proposal follows the NPP, which was approved by the University of Alabama System Board of Trustees on February 6, 2026.

B. Specific Rationale (Strengths) for the Program

List three (3) to five (5) strengths of the proposed program as specific rationale for recommending approval of this proposal.

1. The proposed Ph.D. program will expand UAB's Master's in Health Physics research program, develop future Health Physics faculty, and equip students to solve the radiological safety problems of tomorrow.



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

2. By addressing state and national workforce shortages identified by organizations such as the International Commission on Radiation Protection (ICRP) and the National Council on Radiation Protection and Measurements (NCRP), the program supports the sustainable and peaceful use of radiation technologies.
3. Building on the successful collaborations and structure of UAB's current MS program in Health Physics, the proposed Ph.D. program offers students unmatched training opportunities through industry partnerships, ensuring practical health physics experience prior to entering the workforce.
4. The program will actively collaborate with industry partners to keep the curriculum relevant and aligned with the evolving demands of the field, fostering a comprehensive skill set to maintain a future-ready health physics workforce.
5. To meet industry, government, and academia demands, the Ph.D. program will offer flexible delivery options, including in person and online. Remote research opportunities with industry collaborators and specialized courses addressing emerging topics will further cater to student interests and societal needs.

C. External Support (Recommended)

List external entities (more may be added) that may have supplied letters of support attesting to the program's strengths and attach letters with the proposal at the end of this document.

1. Dr. Deepesh Poudel, Certified Health Physicist/Scientist at Los Alamos National Laboratory
2. Dr. Kathryn Held, Past-President of the National Council on Radiation Protection and Measurements, Associate Radiation Biologist in the Department of Radiation Oncology, Massachusetts General Hospital, and Associate Professor of Radiation Oncology at Harvard Medical School
3. Dr. Kathryn Higley, Professor at Oregon State University, President of the National Council on Radiation Protection and Measurements

D. Student Learning Outcomes

List four (4) to seven (7) of the student learning outcomes of the program.

1. Identify, formulate, and solve broad and diverse technical problems by applying knowledge of radiological science and mathematics to areas relevant to health physics.



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

2. Develop original hypotheses, conduct experiments or data gathering to test hypotheses, analyze and interpret data, and apply scientific judgment to draw conclusions in health physics.
3. Create and disseminate in the peer reviewed literature original research that significantly advances the field of health physics, demonstrating scholarly independence, critical thinking, and a deep understanding of the discipline.
4. Develop and implement key elements of a radiation safety program.
5. Demonstrate the ability to work independently and on multi-disciplinary teams.
6. Communicate effectively both orally and in writing across a broad range of audiences.
7. Critically evaluate both ethical and professional responsibilities in relation to the impacts of technical solutions within global, economic, environmental, and societal contexts.

E. Similar Programs at Other Alabama Public Institutions

List programs at other Alabama public institutions of the same degree level and the same (or similar) CIP codes. If no similar programs exist within Alabama, list similar programs offered within the 16 SREB states. If the proposed program duplicates, closely resembles, or is similar to any other offerings in the state, provide justification for any potential duplication.

There are no Health Physics PhD programs within Alabama or any of the 16 SREB states. Health and Medical Physics Programs share the same CIP code, but as discussed above, Medical Physics is a separate career field. Medical Physicists ensure the accurate, safe, and effective use of radiation in healthcare. Health Physicists protect people and the environment from harmful effects of radiation to enable its beneficial uses. Health Physics Programs are accredited by the Accreditation Board for Engineering and Technology (ABET); Medical Physics Programs by the Commission on Accreditation of Medical Physics Education Programs (CAMPEP). The two career paths share some similar coursework but lead to different board certification exams and overall career fields.

F. Relationship to Existing Programs within the Institution

Nearly all new programs have some relationship to existing offerings through shared courses, faculty, facilities, etc. Is the proposed program associated with any existing offerings within the institution, including options within current degree programs? **Yes** **No**

If **yes**, please describe these relationships including whether or not the program will replace or compete with existing offerings: (**Note:** If this is a graduate program, list any existing undergraduate programs which are directly or indirectly related. If this is a doctoral program, also list related master's programs.)

Related Degree Program Level	Related Degree Program Title	Explanation of the Relationship Between the Programs
------------------------------	------------------------------	--



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

MS	Health Physics	<p>The MS in Health Physics at UAB is directly related to the Ph.D. program. The MS program has seen steady growth from five students per cohort in 2020 to 20 students in the fall 2025 cohort. Demand for the MS program currently exceeds capacity, which is partly limited by the availability of faculty to teach and mentor in the program. This is part of the driving force behind the need for the proposed PhD program.</p> <p>The PhD expands on the knowledge and research competencies of the MS degree, thereby expanding student opportunities for higher level research and academic positions.</p>
----	----------------	---

G. Collaboration

Have any collaborations **within your institution** (i.e., research centers, across academic divisions, etc.) been explored? **Yes** **No**

If **yes**, provide a brief explanation of the proposed collaboration plan(s) for the program:

As with the master’s level program, we have collaborations with other UAB entities, e.g., the Cyclotron Facility, Office of Radiation Safety, and Department of Radiology in a variety of research areas. These sites also provide supervised practice experiences for students. Current collaborations will benefit the Ph.D. program in offering more advanced research opportunities across multi-year projects and grants.

Have collaborations with **other institutions or external entities** (i.e., local business, industries, etc.) been explored? **Yes** **No**

If **yes**, provide a brief explanation of the proposed collaboration plan(s) for the program:

We have approximately 30 external partners that provide supervised practice sites for our students spanning from other universities (ex: Yale and McMaster), private companies (ex: Westinghouse), and federal agencies (ex: EPA and NRC). Affiliation agreements are in place for active external partners.

H. Programmatic Accreditation

Select the appropriate program accreditor from the drop-down menu below:

Accreditation Board for Engineering and Technology (ABET) is the accrediting body for health physics programs. ABET does not accredit PhD programs.

I. Professional Licensure



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

Will the program be considered a Professional Licensure Program based on the following definition: **Yes** **No**

Professional Licensure Program: As defined in federal regulations, an instructional program that is designed to meet educational requirements for a specific professional license or certification that is required for employment in an occupation or is advertised as meeting such requirements.

J. Professional Certification

Will students earn industry certifications while completing the degree or be prepared for industry certifications upon graduation? **Yes** **No**

If **yes**, please explain:

Graduates may opt to pursue the optional Certified Health Physicist (CHP) title through the American Board of Health Physics. The MS degree counts as the requisite one year of experience required to sit for Part 1 of the exam. The PhD counts for two of the six years required to sit for Part 2 of the exam (the final portion of the exam).

K. Admissions

Provide any additional admissions requirements beyond the institution's standard admissions process/policies for this degree level. Include prerequisites, prior degrees earned, etc.

No additional requirements for program admission.



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

L. Mode of Delivery

Provide the planned delivery format(s) of the program as defined in policy (i.e., in-person, online, hybrid). Please also note whether any program requirements can be completed through competency-based assessment.

The program will offer two delivery formats: in-person and online. Online classes will be available in both live and recorded formats, creating a flexible learning environment to meet the needs of students and employers. At the outset, each student will select the format that best suits their circumstances, and their educational experience will be customized accordingly. Up to 100% of didactic coursework can be completed online, except for 1-2 weeks of on-campus lab work during the student's first spring semester. Research projects may require Ph.D. students to travel to partner sites for sample collection or analysis, with each project individually tailored to align with the student's research hypothesis.

Can students complete the entire degree program through distance education (100% online) based on the following definition? **Yes** **No**

Distance Education: An academic program for which required instructional activities can be completed entirely through distance education modalities. A distance education program may have in-person requirements that are non-instructional (e.g., orientation, practicum).

M. Instructional Site(s)

Provide the planned location(s) where the program will be delivered (i.e., main campus, satellite campus, off-campus site.) If the program will be offered at an off-campus site, provide the existing site name or submit an **Off-Campus Site Request** if new.

Will more than 50% of this program be offered at an off-campus site(s) **Yes** **No**

If **yes**, which sites?

N. Industry Need

Using the federal **Standard Occupational Code (SOC) System**, indicate the top three occupational codes related to post-graduation employment from the program. A full list of SOC codes can be found at <https://www.onetcodeconnector.org/find/family/title#17>.

SOC 1 (**required**): 19-2012.00 (Physicists)

There is no SOC code explicitly for "Health Physicist." This is a known problem in the field, and in the Federal Government hiring process. Some related SOC codes include Physicists - 19-2012.00; Occupational Health and Safety Specialists - 19-5011.00; or possibly even Nuclear Engineers - 17-2161.00.



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

Briefly describe how the program fulfills a specific industry or employment need for the State of Alabama. As appropriate, discuss alignment with Alabama's Statewide or Regional Lists of In-Demand Occupations (<https://www.ache.edu/index.php/policy-guidance/>) or with emerging industries as identified by [Innovate Alabama](#) or the [Economic Development Partnership of Alabama](#) (EDPA).

The proposed Ph.D. program in Health Physics at UAB addresses a critical industry and employment need in Alabama by preparing highly skilled professionals to support the state's expanding nuclear energy, medical radiation, and industrial radiological sectors. Alabama is home to significant nuclear facilities, medical institutions, and research initiatives that require expertise in radiation protection, safety, and technology. This program will supply the state with a workforce capable of meeting regulatory standards, advancing innovation, and addressing workforce shortages identified by key national organizations such as the NCRP. By fostering local talent, the program ensures Alabama remains competitive and well-prepared to meet the growing demands of radiation-related industries. Further, educational institutions like UAB require faculty with terminal degrees to teach and mentor graduate students, making individuals with Ph.D.'s in Health Physics essential yet challenging to recruit due to their rarity. Establishing this Ph.D. program will position UAB and the State of Alabama to be key players in addressing not only the pressing research questions in the field, but also to be the place where future academic leaders are educated.

O. Additional Education/Training

Please explain whether further education/training is required for graduates of the proposed program to gain entry-level employment in the SOC occupations selected above.

No additional education or training required.

P. Student Demand

Please explain how you projected the student enrollment numbers in the **Business Plan, Lines 24-27** and provide evidence to substantiate student demand (i.e., surveys, enrollments in related courses, etc.).

The use of radiation continues to expand with innovations in reactor designs, fusion technology, radiopharmaceuticals, and research into the effects of radiation on human tissues, to name a few. Addressing tomorrow's safety challenges, resolving existing issues, and training the next generation of Health Physics professionals are critical national priorities. As noted in the attached letters of support, "the demand for highly skilled professionals in health physics has never been greater" (Higley, 2023), and UAB's proposed Ph.D. program "has the potential to address this need by providing advanced training and research opportunities for individuals who aspire to excel in this area of national need" (Poudel, 2023). Dr. Poudel further emphasized that "UAB can become a hub for cutting-edge research and education in the field" and expressed enthusiasm for recruiting graduates from this program. With a waiting list of interested students and limited active Ph.D. programs nationwide, UAB is well-positioned to



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

meet the significant demand. Current requests for the PhD program have already exceeded the program's planned capacity for several years.

Recent articles in *Physics Today*¹, the *Bulletin of the Atomic Scientists*², and the *Journal of Applied Clinical Medical Physics*³ highlight the alarming decline in the U.S. radiation professional workforce, pointing to insufficient student enrollment in the field. While UAB's master's program has made progress in addressing this shortage, a Ph.D. program is essential to fulfill research and faculty needs in health physics. Longer-term engagement with Ph.D. students will increase the program's research capacity, supporting grant acquisition and external funding.

As nuclear energy and medical applications of radiation grow, the lack of Ph.D.-level health physicists has become a bottleneck, largely due to limited program availability. This growing need was recognized a decade ago in the National Council on Radiation Protection and Measurements (NCRP) Statement 12, "Where are the Radiation Professionals?" (WARP), and the situation has worsened in the intervening decade. In April 2023, the International Commission on Radiological Protection (ICRP) echoed these concerns, warning that inadequate investment in education, research, and infrastructure threatens society's ability to manage radiation risks effectively.⁴

As of June 2025, indeed.com had 9,000+ radiation safety jobs, 800+ radiation safety officer positions, and 50+ specifically for health physicists. ZipRecruiter had 60 health physicist jobs in Alabama alone. HigherEdJobs had 10+ open faculty positions in health physics and related fields. A survey of alumni from the Fall 2022 cohort onwards (~30 students) demonstrated that approximately 33% of MS program alumni were interested in a UAB PhD in Health Physics program.

UAB's Ph.D. program will address these urgent needs, contributing to a stronger state, national, and international workforce in radiological protection.

¹ <https://pubs.aip.org/physicstoday/article/76/10/18/2912730/Alarm-sounded-over-declining-US-radiation>

² <https://thebulletin.org/2023/07/nuclear-safety-staffing-in-the-united-states-a-crisis-with-no-easy-fix/>

³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9880967/>

⁴ <https://link.springer.com/article/10.1007/s00411-023-01024-5>



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

II. Program Resources and Expenses

A. All Proposed Program Personnel

Provide all personnel counts for the proposed program.

Employment Status of Program Personnel		Personnel Information		
		Count from Proposed Program Department	Count from Other Departments	Subtotal of Personnel
Current	Full-Time Faculty	3	0	3
	Part-Time Faculty	3	0	3
	Administration	0	0	0
	Support Staff	0.5	0	0.5
**New To Be Hired	Full-Time Faculty	1	0	1
	Part-Time Faculty	0	0	0
	Administration	0	0	0
	Support Staff	0.5	0	0.5
Personnel Total				8

Provide justification that the institution has proposed a sufficient number of faculty (full-time and part-time) for the proposed program to ensure curriculum and program quality, integrity, and review:

The proposed program intends to support 3 PhD students per year. The MS program currently has a 0.5 FTE program manager and is budgeting for an additional 0.5 FTE to support the PhD students and faculty. PhD students are longer term students (4 years rather than 1.5-2 for a MS student) and likely carry a higher administrative burden. The MS program has fiscal year 2025-2026 budget approval for a fourth full time faculty. Combined with our external partners and the availability of mentors through our professional society, the Health Physics Society, we believe we have budgeted for appropriate faculty and staff.

Note: Include *any new funds* designated for compensation costs (faculty, administration, and/or support staff to be hired) in the **Business Plan, Line 7 - Personnel Salaries and Benefits**. Current personnel salary/benefits *should not be included* in the Business Plan.



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

B. Proposed Faculty Roster*

Complete the following **Faculty Roster** to provide a brief summary and qualifications of current faculty and potential new hires specific to the program.

***Note:** Institutions must maintain and have current as well as additional faculty curriculum vitae available upon ACHE request for as long as the program is active, but CVs are **not** to be submitted with this proposal.

Note that the table below only lists courses for the PhD program and assumes the student is coming in with a MS degree from an ABET accredited school. Students starting with a BS are also required to complete the MS level courses in the existing MS program.

Current Faculty			
1	2	3	4
CURRENT FACULTY NAME (FT, PT)	COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)	ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed	OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)
Emily Caffrey (FT)	Spring, MHP 720 – Advanced Internal and External Dosimetry, 3 credits Fall or Spring, MHP 725 – Environmental Health Physics, 3 credits Fall, MHP 750 – Health Physics Research Methods for Doctoral Students, 3 credits Fall/Spring/Summer, MHP 753 – Research Seminar, 1 credit Fall/Spring, MHP 770 – Health Physics Research and Policy, 3 credits Fall/Spring/Summer, MHP 798/799, Non-Dissertation/Dissertation Research, 1-6 credits	Ph.D. Health Physics, Oregon State University	Certified Health Physicist by American Board of Health Physics; Elected member, National Council on Radiation Protection and Measurements
Charles Wilson (FT)	Fall, MHP 625 – Administrative Health Physics, 3 credits Fall or Spring, MHP 725 – Environmental Health Physics, 3 credits Fall, MHP 750 – Health Physics Research Methods for Doctoral Students, 3 credits Fall/Spring/Summer, MHP 753 – Research Seminar, 1 credit Fall/Spring/Summer, MHP 798/799, Non-Dissertation/Dissertation Research, 1-6 credits	Ph.D. Environmental Science with concentration in Health Physics, Louisiana State University	Certified Health Physicist by American Board of Health Physics; Certified Laser Safety Officer; Certified Safety Professional



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

Current Faculty			
1	2	3	4
CURRENT FACULTY NAME (FT, PT)	COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)	ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed	OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)
Jeff Caudill (FT)		Master of Science, Environmental Health Physics, Clemson University	Certified Health Physicist by American Board of Health Physics; Certified Medical Laser Safety Officer. Over 20 years of experience in the Nuclear Navy as a Radiation Safety Officer, Health Physicist, and Training Director.
Approved FY 2025-2026 faculty (FT)	Fall/Spring/Summer, MHP 798/799, Non-Dissertation/Dissertation Research, 1-6 credits MS level courses	Ph.D. in health physics or closely related field	CHP certification
Rachel Nichols (PT)		Master of Science, Environmental Health Physics, Clemson University	Certified Health Physicist by American Board of Health Physics. Eight years of experience as a Health Physicist and Associate Radiation Safety Officer for the University of Missouri.
Zachariah Tribbett (PT)		Master of Arts, Physiology, Ball State University	Certified Health Physicist by American Board of Health Physics; Certified Laser Safety Officer. Seven years of experience as a Laser Safety Officer and two years as Radiation Safety Officer for Yale University. Two years as a Health Physicist for Oak Ridge Associated Universities.
Liliana Navarrete (PT)		Master of Science, Physics, University of Alabama	22 years of BS and MS level teaching experience.
Additional Faculty (To Be Hired)			
1	2	3	4
FACULTY POSITION (FT, PT)	COURSES TO BE TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)	ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed	OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

Current Faculty			
1	2	3	4
CURRENT FACULTY NAME (FT, PT)	COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)	ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed	OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)
FT	Fall, MHP 750 – Health Physics Research Methods for Doctoral Students, 3 credits Fall/Spring/Summer, MHP 753 – Research Seminar, 1 credit Fall/Spring/Summer, MHP 798/799, Non-Dissertation/Dissertation Research, 1-6 credits Other new elective courses	Ph.D. in health physics or closely related field	CHP certification

Abbreviations: (FT, PT): Full-Time, Part-Time; (D, UN, UT, G, DU): Developmental, Undergraduate Nontransferable, Undergraduate Transferable, Graduate, Dual: High School Dual Enrollment
 Course Modality: (IP, OL, HY, OCIS): In-Person, Online, Hybrid, Off-Campus Instructional Site



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

C. Equipment

Will any special equipment be needed specifically for this program? Yes No

If **yes**, list the special equipment and include all special equipment costs in the **Business Plan, Line 8**:

*No specific equipment is required; however, equipment start-up funds for a new faculty are included in year 1 of the budget estimate.

D. Facilities

Will new facilities or renovations to existing infrastructure be required specifically for the program? Yes No

If **yes**, describe the new facilities or renovations and include all *new* facilities and/or *renovation* costs in the **Business Plan, Line 9**:

E. Assistantships/Fellowships

Will the institution offer any assistantships specifically for this program? Yes No

If **yes**, provide the number of assistantships to be offered and include all *new* costs for assistantships in the **Business Plan, Line 10**.

There will be three students and two assistantships offered per cohort.

Explain the function of the Assistantships (i.e., teaching, research, etc.)?:

There will be one teaching and one research assistantship offered each year. These will support classroom needs for the MS level program and provide research support for active and new grants.

F. Library

Will any **additional** library resources be purchased to support the program? Yes No

If **yes**, briefly describe new resources to be purchased and include the cost of new library resources in the **Business Plan, Line 11**:

G. Accreditation Expenses

If programmatic accreditation was indicated above, please include all accreditation costs in the **Business Plan, Line 12** and itemize and explain below:

Not applicable.



Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

New Program Proposal

H. Other Costs

Please include all other costs incurred with program implementation, such as marketing or recruitment, in the **Business Plan, Line 13** and explain below:

The program can initiate with the equipment currently available to the MS program.

III. Program Revenue and Funding

A. Tuition Revenue: Please describe how you calculated the tuition revenue that appears in the **Business Plan, Line 17**. Specifically, did you calculate using cost per credit hour or per term? Did you factor in differences between resident and non-resident tuition rates?

Note: Tuition Revenue should be proportional to total enrollment.

Tuition revenue was calculated for the number of students per year times the number of credit hours times the resident tuition cost per credit hour. We did not consider additional revenue from non-resident or online tuition. Two of the Ph.D. assistantships will be funded through grants and contracts.

B. External Funding: Will the proposed program require external funding (e.g., Perkins, Foundation, Federal Grants, Sponsored Research, etc.)? **Yes** **No**

If **yes**, please include all external funding in the **Business Plan, Line 18** and explain specific sources and funding below:

The MS program currently has external funding from the Nuclear Regulatory Commission in the form of a fellowship grant that solely funds students and a research and development grant that funds faculty and a researcher. An additional contract with Consolidated Nuclear Security, the contractor that runs the Department of Energy Pantex Plant, funds faculty and a graduate student researcher. Additional sources of funding are Department of Energy grants, additional Nuclear Regulatory Commission grants, and contracts from private industry.

C. Reallocations: For each year will tuition revenue and/or external funding cover projected expenses? **Yes** **No**

If **not**, budget reallocation may be required. Please include all reallocations in the **Business Plan, Line 19** and describe below how your institution will cover any shortfalls in any given year.

Ms. Navarrete teaches two classes (CDS 505 and MHP 611) in the program. Her salary percentage (20%) is shown in the budget spreadsheet under reallocations.

ACADEMIC DEGREE PROGRAM BUSINESS PLAN									
1									
2	INSTITUTION:	University of Alabama at Birmingham							
3	PROGRAM NAME:	Health Physics	CIP CODE:	51.2205					
4	SELECT LEVEL:	GRADUATE (DOCTORATE)							
5	ESTIMATED *NEW* EXPENSES TO IMPLEMENT PROPOSED PROGRAM								
6		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	TOTAL
7	PERSONNEL SALARIES & BENEFITS	\$206,771	\$212,974	\$219,363	\$225,944	\$232,723	\$239,704	\$246,895	\$1,584,375
8	EQUIPMENT	\$100,000							\$100,000
9	FACILITIES								\$0
10	ASSISTANTSHIPS/FELLOWSHIPS	60000	120000	180000	240000	240000	240000	240000	\$1,320,000
11	LIBRARY								\$0
12	ACCREDITATION								\$0
13	OTHER COSTS								\$0
14	TOTAL EXPENSES	\$366,771	\$332,974	\$399,363	\$465,944	\$472,723	\$479,704	\$486,895	\$3,004,375
15	*NEW* REVENUES AVAILABLE FOR PROGRAM SUPPORT								
16		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	TOTAL
17	TUITION + FEES	34160	68320	102480	136640	136640	136640	136640	\$751,520
18	EXTERNAL FUNDING	100000	200000	300000	400000	400000	400000	400000	\$2,200,000
19	REALLOCATIONS	25152.4239	\$25,907	\$26,684	\$27,485	\$28,309	\$29,159	\$30,033	\$192,729
20	TOTAL REVENUES	\$159,312	\$294,227	\$429,164	\$564,125	\$564,949	\$565,799	\$566,673	\$3,144,249
21	ENROLLMENT PROJECTIONS								
22									
23		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	AVERAGE
24	FULL-TIME ENROLLMENT HEADCOUNT	No data reporting	6	9	12	12	12	12	10.50
25	PART-TIME ENROLLMENT HEADCOUNT		0	0	0	0	0	0	0.00
26	TOTAL ENROLLMENT HEADCOUNT		6	9	12	12	12	12	10.50
27	NEW ENROLLMENT HEADCOUNT		3	3	3	3	3	3	3.00
28	Validation of Enrollment			YES	YES	YES	YES	YES	
29	DEGREE COMPLETION PROJECTIONS								
30	<i>Note: Do not count Lead "0"s and Lead 0 years in computing the average annual degree completions.</i>								
31		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	AVERAGE
32	DEGREE COMPLETION PROJECTIONS	No data reporting	0	0	0	3	3	3	3.00

Graduate Curriculum Overview

Graduate Curriculum Checklist:

- | | |
|--------------------------|-------------------------------------|
| 1. Overview | <input checked="" type="checkbox"/> |
| 2. Components | <input checked="" type="checkbox"/> |
| 3. Options (as required) | <input checked="" type="checkbox"/> |

1. Graduate Overview

Enter the credit hour value for all applicable components (N/A if not applicable). The credit hours MUST match the credit hours in the Curriculum Components table.

Curriculum Overview of Proposed Program	
Credit hours required in Program Courses	35
Credit hours in Program Options (concentrations/specializations/tracks)	0
Credit hours in Program Electives	16
Credit hours in Required Thesis/Research	24
Credit hours in Required Capstone/Internship/Practicum	0
Total Credit Hours Required for Completion:	75

Maximum number of credits that can be transferred in from another institution and applied to the program:	19
Intended program duration in semesters for full-time students:	12
Intended program duration in semesters for part-time students:	NA

Does the program require students to demonstrate industry-validated skills, specifically through an embedded industry-recognized certification, structured work-based learning with an employer partner, or alignment with nationally recognized industry standards?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
--	---------------------------------	---

If **yes**, please explain (i.e., number of hours required, etc.):

	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
--	---------------------------------	---

Does the program include any concentrations/ tracks/ options?

If **yes**, please explain (i.e., define):

2. Graduate Components

Please provide all course information as indicated in the following table. Indicate new courses with “Y” in the associated column. If the course includes a required work-based learning component, such as an internship or practicum course, please indicate with a “Y” in the WBL column.

Insert Additional Rows as Needed				
Institution:	University of Alabama at Birmingham			
Program Name:	Health Physics			
Program Level:	GRADUATE (DOCTORATE)			
Curriculum Components of Proposed Program				
Course Number	Course Name	Credit Hours	New? (Y)	WBL? (Y)
Program Courses		35		
MHP 602	Radiation Physics	3		
MHP 610	Radiation Detection and Measurement	4		
MHP 620	Principles of Dosimetry	3		
MHP 645	Radiation Shielding and Protection	3		
MHP 651	Advanced Radiation Biology	3		
MHP 655	Contemporary Issues in Health Physics and CHP Exam Review	3		
MHP 720	Advanced Internal and External Dosimetry	3	Y	
MHP 725	Environmental Health Physics	3	Y	
MHP 750	Health Physics Research Methods for Doctoral Students	3	Y	
MHP 753	Research Seminar	4	Y	
BST 611	Intermediate Statistical Analysis I	3		
Program Options (enter total credit hours from all options below)		0		
Program Electives		16		
MHP 611	Physics of Diagnostic Imaging	3		
MHP 621	Nonionizing Radiation	3		
MHP 625	Administrative Health Physics	3	Y	
MHP 654	Laser Safety and Protection	3		
MHP 657	Monte Carlo Techniques for Health Physicists	1		
MHP 675	Special Topics in Health Physics	3		
MHP 770	Health Physics Research and Policy	3		
BST 612	Intermediate Statistical Analysis II	3		
BHM 705	Teaching in Health Professions	3		
Required Thesis/Research		24		
MHP 798	Non-dissertation Research	12	Y	
MHP 799	Dissertation Research	12	Y	
Capstone/Internship/Practicum		0		
Total Credit Hours Required for Completion:		75		

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Resolution

Granting Initial Approval and Submission to the Alabama Commission on Higher Education (ACHE) a Proposal for a Doctor of Philosophy (Ph.D.) Degree in Health Physics (CIP Code 51.2205)

WHEREAS, Health Physics, the science of radiation protection, is essential for safeguarding people and the environment while enabling the beneficial uses of radiation in medicine, energy, and industry; and

WHEREAS, the demand for highly trained Health Physicists and Radiation Safety Officers is increasing nationally and within Alabama, as documented by the National Council on Radiation Protection and Measurements and recent reports highlighting workforce shortages; and

WHEREAS, the proposed Ph.D., in Health Physics at The University of Alabama at Birmingham (UAB) will provide advanced, research-focused education to prepare graduates for leadership roles in academia, government, healthcare, and industry, addressing urgent workforce needs and supporting national priorities in nuclear safety and radiation protection; and

WHEREAS, the program builds upon UAB's successful and growing Master of Science in Health Physics, leverages collaboration with UAB entities such as the Cyclotron Facility and Department of Radiology, and partners with leading organizations, including Westinghouse, Mayo Clinic, and Los Alamos National Laboratory; and

WHEREAS, the curriculum will include advanced courses such as *Advanced Internal and External Dosimetry*, *Environmental Health Physics*, and *Health Physics Research and Policy*, equipping students to address complex challenges in radiation safety, dosimetry, environmental monitoring, and policy translation; and

WHEREAS, there are currently no Ph.D. programs in Health Physics offered in Alabama or the surrounding region, and UAB is uniquely positioned to become a hub for cutting-edge research and education in this critical field;

NOW, THEREFORE, BE IT RESOLVED that The Board of Trustees of The University of Alabama grants initial approval for and authorizes submission to the Alabama Commission on Higher Education (ACHE) a proposal to establish a Doctor of Philosophy (Ph.D.) degree in Health Physics (CIP Code 51.2205) by The University of Alabama at Birmingham.

August 12, 2025

Subject: Approval of Proposed Health Physics PhD Business Plan

To Whom It May Concern:

I have reviewed the business plan for the proposed PhD program in Health Physics in the Department of Clinical and Diagnostic Sciences within the School of Health Professions. The business plan meets the requirements of the Alabama Commission on Higher Education and I support advancing this program for further consideration. The budget is therefore approved.

Sincerely,


[William Kevin Speed \(Aug 12, 2025 08:43:02 CDT\)](#)

Kevin Speed
Executive Director of Administrative Operations
School of Health Professions

RAY L. WATTS, M.D.

President

December 1, 2025


Chancellor Sid J. Trant
The University of Alabama System
500 University Boulevard East
Tuscaloosa, AL 35401

Dear Chancellor Trant:

The UAB School of Health Professions is proposing the establishment of a Doctor of Philosophy (Ph.D.) degree in Health Physics. The field of Health Physics, distinct from Medical Physics, is dedicated to protecting people and the environment from the harmful effects of radiation while enabling its beneficial uses. At UAB, the Master of Science in Health Physics program has grown steadily, underscoring the need for the Ph.D. program. The program is rigorous and research-focused, designed to advance knowledge in radiation science and its applications in health and safety. Students will engage in interdisciplinary research addressing challenges in radiation protection, dosimetry, environmental monitoring, medicine, and nuclear power, supported by UAB's facilities and by industry and government partnerships. With doctoral student funding already incorporated into grant applications to the NIH, NRC, DOE, and other agencies, graduates of the program will be well prepared to assume leadership roles in academia, industry, government, and healthcare.

This doctoral program has been thoroughly reviewed at UAB and has my full support. If you approve, please include this item on the Board's agenda for its February 6, 2026, meeting and forward it to the Alabama Commission on Higher Education. We will be pleased to provide additional information if needed.

Sincerely,



Ray L. Watts, M.D.
President

RLW:khm

Attachments

cc: Dr. Janet Woodruff-Borden
Dean Andrew Butler
Mrs. Kirsten Burdick
Dr. Tonja Johnson

Office of the President

1070 Administration Building | 701 20th Street South

Mailing Address:

AB 1070 | 1720 2ND AVE SOUTH | BIRMINGHAM AL 35294-0110

phone: 205.934.4636

uab.edu

Office of the Provost

November 24, 2025

MEMORANDUM

TO: Ray Watts, M.D.
President

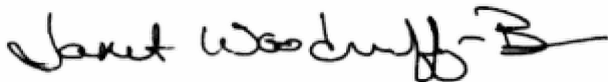
FROM: Janet Woodruff-Borden, Ph.D.
Senior Vice President for Academic Affairs and Provost

SUBJECT: Academic Affairs Item for February 6, 2026, Board of Trustees Meeting

For the February 6, 2026, Board of Trustees meeting, Dr. Andrew Butler, Dean of the UAB School of Health Professions, has submitted a proposal for a Doctor of Philosophy (Ph.D.) degree in Health Physics (CIP Code 51.2205).

This request has my full endorsement for submission to the Board of Trustees for review and approval at their February 6, 2026, meeting. Please let me know if you have any questions.

JWB/khm



Janet Woodruff-Borden, Ph.D.
Senior Vice President for Academic Affairs and Provost

Executive Summary

The proposed **Doctor of Philosophy (Ph.D.) in Health Physics** will be a new doctoral program within the Department of Clinical and Diagnostic Sciences in the School of Health Professions at the University of Alabama at Birmingham (UAB). This program builds upon UAB's successful Master of Science in Health Physics and responds to a critical national and state need for highly trained radiation safety professionals. Health Physics is the science of radiation protection, ensuring the safe and beneficial use of radiation in medicine, energy, and industry. Health Physicists protect people and the environment from harmful effects of radiation while enabling its beneficial applications in healthcare, nuclear power, and research.

Program Rationale and Need

The demand for Health Physicists and Radiation Safety Officers is increasing nationally and within Alabama. Reports from the National Council on Radiation Protection and Measurements (NCRP) and the International Commission on Radiological Protection (ICRP) highlight severe workforce shortages in radiation safety. Recent articles in *Physics Today* and the *Bulletin of the Atomic Scientists* warn that inadequate investment in education and research threatens society's ability to manage radiation risks effectively.

UAB's existing MS program has grown from 5 students per cohort in 2020 to 20 students in Fall 2025, with demand exceeding capacity. Alumni surveys indicate that approximately one-third of MS graduates are interested in pursuing a Ph.D. in Health Physics at UAB. Establishing this program will allow UAB to prepare graduates for leadership roles in academia, government, healthcare, and industry, while expanding research capacity in radiation science and safety.

There are currently **no Ph.D. programs in Health Physics in Alabama or in the 16 SREB states**. Existing programs nationwide are limited and UAB's program will fill a critical gap in the Southeast and position Alabama as a leader in nuclear and radiological sciences.

Curriculum Overview

The proposed Ph.D. program will require **56 credit hours beyond the master's level**, combining advanced coursework, research seminars, dissertation research, and graduate elective courses. The curriculum is designed to provide a rigorous foundation in radiation science, research methodology, and policy translation.

Core Courses

MHP 720 Advanced Internal and External Dosimetry (3 credits): Advanced radiation measurement and modeling techniques.

MHP 725 Environmental Health Physics (3 credits): Strategies for environmental radiation protection and monitoring.

MHP 750 Health Physics Research Methods for Doctoral Students (3 credits): Advanced research design and methodology for independent investigations.

MHP 753 Research Seminar (4 credits): Professional development through seminars, guest speakers, and external mentorship.

MHP 770 Health Physics Research and Policy (3 credits): Examines how scientific findings inform public policy, leveraging faculty expertise in science-policy translation.

Research Requirements

MHP 798 Non-Dissertation Research (12 credits): Prepares students for dissertation-level research through structured projects.

MHP 799 Dissertation Research (12 credits): Culminates in original research contributing to the advancement of health physics.

Delivery formats will include **in-person and online options**, with 1–2 weeks of on-campus laboratory work during the first spring semester. Students may also engage in remote research opportunities with industry collaborators.

Program Strengths

The proposed Ph.D. program is built on a strong foundation of academic excellence and strategic partnerships. UAB's existing MS program in Health Physics has demonstrated sustained growth and success, creating a pipeline of students eager for advanced research opportunities. The program will leverage UAB's extensive resources, including the Cyclotron Facility, Office of Radiation Safety, and Department of Radiology, to provide students with unparalleled access to state-of-the-art equipment and research environments.

Faculty expertise is another cornerstone of this program. UAB currently has two Ph.D.-level faculty members with nationally recognized credentials and leadership roles in professional organizations. Recruitment is underway for a third faculty member, and budget approval has been secured for a fourth full-time faculty position to ensure program sustainability and capacity for growth. These faculty members bring specialized knowledge in dosimetry, environmental health physics, and radiation policy, ensuring a curriculum that is both comprehensive and cutting-edge.

The program's strength is further amplified by its external collaborations. UAB maintains partnerships with leading organizations such as Westinghouse, Mayo Clinic, Los Alamos

National Laboratory, and federal agencies including the Nuclear Regulatory Commission and the Department of Energy. These relationships provide students with opportunities for applied research, internships, and professional networking, positioning graduates for success in a competitive job market.

Finally, the program is designed with flexibility in mind. Offering both in-person and online delivery formats, it meets the needs of diverse learners and industry professionals seeking advanced credentials. Supported by federal grants, industry contracts, and assistantships, the program is financially sustainable and aligned with UAB's mission to advance education, research, and service.

Letters of Support

The proposed Ph.D. program has garnered strong endorsements from national leaders in the field of radiation protection. Dr. Deepesh Poudel, Staff Scientist at Los Alamos National Laboratory, emphasized that “the proposed Ph.D. program in Health Physics at UAB has the potential to address this need by providing advanced training and research opportunities for individuals who aspire to excel in this area of national need.” He further noted that UAB can become “a hub for cutting-edge research and education in the field.”

Similarly, Dr. Kathryn Higley, President of the National Council on Radiation Protection and Measurements and Professor at Oregon State University, stated, “I firmly believe that UAB has the necessary expertise, resources, and infrastructure to establish and maintain a world-class Ph.D. program in Health Physics.” These letters, along with additional endorsements from industry and academic partners, underscore the program's credibility and the urgency of its implementation.

Comparison to Similar Programs

There are no Health Physics Ph.D. programs in Alabama or the surrounding region. Programs at Oregon State, Idaho State, and Colorado State are located outside the Southeast and have limited capacity. Other programs, such as those at Texas A&M and UT Austin, offer concentrations in health physics within nuclear engineering or mechanical engineering, but do not provide a dedicated Ph.D. in Health Physics. UAB's program will be the only comprehensive, research-focused Health Physics Ph.D. in the Southeast, offering unique strengths in interdisciplinary research and policy integration.

Student Demand and Enrollment Projections

Based on MS program growth and alumni interest, the Ph.D. program anticipates enrolling **three students per year**, with steady growth as faculty capacity expands. Current requests for the Ph.D. program have already exceeded planned capacity for several years. Graduates will be eligible for the **Certified Health Physicist (CHP)** credential, a highly desirable qualification for leadership positions.

Impact and Outcomes

The establishment of the Ph.D. in Health Physics at UAB will have a transformative impact on the state, the region, and the nation. Graduates of this program will be uniquely prepared to address the most pressing challenges in radiation safety and protection. Through advanced coursework and rigorous research experiences, students will develop the expertise needed to conduct innovative studies in areas such as radiation risk assessment, dosimetry, environmental monitoring, radiobiology, and nuclear energy applications.

Beyond technical proficiency, the program emphasizes leadership and policy integration, equipping graduates to influence decision-making in government, healthcare, and industry. These individuals will be positioned to assume critical roles as faculty members in academic institutions, senior scientists in research organizations, and radiation safety officers in hospitals, nuclear facilities, and federal agencies.

By producing highly skilled professionals in a field where shortages have been well documented, UAB will help ensure the continued safe and beneficial use of radiation technologies. The program will strengthen Alabama's capacity for innovation in nuclear and radiological sciences, support economic development through partnerships with industry, and contribute to national security and public health. In short, the Ph.D. in Health Physics will not only advance scientific knowledge but also create a pipeline of leaders who will safeguard communities and enable technological progress for decades to come.



University of Alabama System[®]

Board Rule 502

Notice of Pending Proposal (NPP) for a New Program of Instruction *(To be completed by the Provost's Office)*

1. Institution:

UA

UAB

UAH

2. Date of NPP Submission (mm/dd/yyyy): 8/30/2024

3. Contact Information

Institutional Contact Person: Melanie Hart, PhD

Telephone: 205.934.7528

Email: mhart2@uab.edu

4. Program Identification

Program Name: Health Physics

Degree Nomenclature: PhD

5. 6-digit CIP Code: 51.2205

6. Program Mode of Delivery

- Distance
- On-site
- Other, please describe: Both in-person and online modalities available

7. Select a meeting for Board consideration:

- April 11-12, 2024
- June 6-7, 2024
- September 12-13, 2024
- November 7-8, 2024
- February 6-7, 2025
- April 3-4, 2025
- June 5-6, 2025
- September 11-12, 2025
- November 6-7, 2025
- February 5-6, 2026
- April 2-3, 2026
- June 4-5, 2026

8. Is the proposed academic degree program currently listed on your campus Three-Year Academic Program Planning Report that is annually submitted to the Board of Trustees?

Yes

No

If no, please explain.

9. Provide a brief description of the program.

Health Physics is the science of radiation protection. This program is designed to train students to use their broad scientific background to solve the real challenges that are posed by the increasing use of radiation for peaceful purposes. Our mission statement is as follows:

The program mission is to provide a quality educational experience in health physics that prepares students to be exceptional professionals who will equitably serve in a diverse workforce, who will contribute to the profession throughout their careers, and who will uphold the highest standards of ethics and integrity both personally and professionally.

Our Student Learning Outcomes are:

1. Identify, formulate, and solve broad and diverse technical problems by applying knowledge of the sciences and mathematics to areas relevant to health physics.
2. Develop original hypotheses, conduct experiments or data gathering to test hypotheses, analyze and interpret data, and apply scientific judgment to draw conclusions in health physics.
3. Develop and implement key elements of a radiation safety program.



10. Relationship of program to other programs within the institution.

10.1. How will the program support or be supported by other programs within the institution?

MS in Health Physics at UAB is directly related to the PhD program and would serve as a feeder into the PhD.

10.2. Will this program replace any existing program(s) or specialization(s), option(s) or concentration(s) within existing programs?

Yes

No

If yes, please explain:

11. If this program is similar or duplicative of any other programs in the system or the state, please give your rationale for program duplication.

Alabama – no similar programs
Arkansas – no similar programs
Delaware – no similar programs
Florida – no similar programs
Georgia – no similar programs
Kentucky – no similar programs
Louisiana – no similar programs
Maryland – no similar programs
Mississippi – no similar programs
North Carolina – no similar programs
Oklahoma – no similar programs

12. Do you plan to explore possible program collaboration with other institutions? Please explain.

We are currently exploring collaborations with McMaster University in Hamilton, Ontario. The current scope of potential collaboration includes shared courses, academic mentorship, and supervised practices.

13. Please describe the need and/or level of student demand for this program.

The biggest driver for the need of a Health Physics PhD is national studies that have found the United States ability to respond to radiation related disasters insufficient (1, 2, 3, and 4). We have also had many expressions of interest by our current and former master's students, requests from colleagues at national conferences, and the lack of PhD programs in health physics nationwide is the major indicator of student demand. The dramatic increase in demand for the MS program (enrollment tripled from 2021 to 2022, and the number of applications for 2023 has already exceeded capacity) also indicates the need for the program. The number of requests appears to exceed our 10-year planned capacity.

1)

<https://pubs.aip.org/physicstoday/article/76/10/18/2912730/Alarm-sounded-over-declining-US-radiation>

2) <https://thebulletin.org/2023/07/nuclear-safety-staffing-in-the-united-states-a-crisis-with-no-easy-fix/>

3) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9880967/>

4) <https://link.springer.com/article/10.1007/s00411-023-01024-5>





Attachment C to Board Rule 502 New Program Proposal Supplement

In addition to the items ACHE has requested for program proposals, please include the following additional items when developing and submitting academic program proposals to the System Office and the Board of Trustees for approval.

1. Institution:

UA

UAB

UAH

2. Program Identification

Program name:

Degree Nomenclature:

Date of NPP submission:

3. Six-digit CIP Code:

4. Executive Summary (not to exceed two pages)

5. Steps taken to determine if other UA System institutions might be interested in collaborating in the program.

6. Summary of other campus comments, internal to the UA System or external (if any), regarding your plans for developing this program. Please include substantive feedback from the pre-proposal process.

7. Describe the process that will be used by your institution for routine internal and/or external program review.

8. Describe the process that will be used in assessing program outcomes (to include student learning outcomes).

9. Other pertinent information, if any.