Annual Academic Assessment Report

Physics Graduate Program 2024-2025

Summary of recent graduates (Fall 2024, Spring 2025, Summer 2025)

Physics Ph.D. and M.S. graduates AY 2024-25					
#	Graduation Term	Name	Program	Faculty Advisor	Position after Graduation
1	FA2024	–	_		
2	SP2025	Carmel Dansou	PHYSPH	Bellaiche	Postdoctoral Fellow, U. Arkansas
3	SP2025	Hunter Lindemann	PHYSMS	Gea-Banacloche	Physics PHD Prog, Purdue U.
4	SU2025	Gokul Acharya	PHYSPH	Hu	Postdoctoral Fellow, U. Arkansas
5	SU2025	John Davis	PHYSPH	Barraza-Lopez	Visiting Professor, Grand Valley State U., Grand Rapids, MI
6.	SU2025	Garrett Kitterman	PHYSMS	Churchill	MSEN PHD Prog. U. Arkansas
7	Su2025	Charles Holloway	PHYSMS	J. Kennefick	SPAC PHD program, U. Arkansas

Student evaluations of graduate courses taught by physics faculty continue to receive high ratings. Recent graduates have found gainful employment in academia or ready opportunities for further studies in Physics or related disciplines.

Use of Results

Based on student feedback on physics graduate program combined with changes in faculty expertise and emphases on different subfields of physics over the last few years, we have developed and launched three new Ph.D. physics concentrations in the fields of astrophysics, biophysics, and neuroscience. This has led to changes in core program requirements with the addition of elective courses in these subfields. Graduate handbook as well as contents of several core courses are also under review. These are expected to be concluded by the end of Fall 2025 semester.

Changes to the Assessment Process

In response to recently concluded program review, changes to assessment plan for the graduate program is under review. The plan is expected to be finalized by the end of Fall 2025 semester and implemented beginning with Spring 2026 semester.

Physics Department Academic Program Assessment Plan 2025

Graduate (M.S. and Ph.D.) Program Goals

The goal our graduate program is to expose students to quality research experiences to prepare them for future research in academia, industry or national labs and/or teaching careers in physics and related disciplines.

Student Learning Outcomes

The coursework and research program are designed to help students

1. Broad knowledge of core physics areas
2. Develop critical thinking and problem-solving skills in the conduct of research.
3. Develop ability to design research questions and analyze results
4. Gain computational skills required to analyze complex systems and data
5. Develop ability to communicate their work to a broad range of audience.

Assessment of Student Learning

1. **Direct Methods**
   A. Coursework
   B. Candidacy Exam (Ph.D. program)
   C. Annual Reviews
   D. Final Thesis or Dissertation presentation and defense

A. Coursework

Graduate physics students must complete a carefully designed coursework consisting of required and elected courses taught by department faculty. Students must earn a grade of "B" or better in each core course to continue in the program. The department's Graduate Affairs Committee (GAC) shall monitor these courses, making changes from time to time to improve student preparation and to respond to faculty research programs. The chair and the vice-chair work with the GAC closely in this aspect of their work, coordinating with the committee in curriculum development.

B. Ph.D. Candidacy Exam

All PhD candidates must pass a research-based exam by developing, presenting, and defending a research proposal that will form the basis of their Ph.D. research project. The committee for the candidacy examination is different from the dissertation/annual review committee and is appointed by the graduate affairs Committee. The committee serve as an independent body to evaluate the research project and the student's ability to plan, conduct and complete the project. (Questionnaire already in use)

C. **Annual Reviews**

All students must undergo an annual review in which they present a summary of their academic and research work over the year to their thesis or dissertation committee. The committee will evaluate their academic trajectory, general understanding of their research area (and related physics subjects) and their presentation skills. The review is used to identify possible problems or areas that need improvement. The responsibility for corrective action lies with the advisor. Particularly serious situations, such as a conflict between the advisor and the student, may require intervention by the Chair or vice-Chair. (Questionnaire already in use)

D. **Final Thesis or Dissertation presentation and defense**

The student's thesis/ dissertation committee will evaluate the student's critical thinking and problem-solving skills, writing skills, and oral communication skills after the student defends his/her thesis/dissertation. (Suggested questionnaire under review)

2. **Indirect Methods**

A. Exit Interview: Students will complete a written questionnaire and will have an exit interview with the Department Chair after the thesis/dissertation defense. (Suggested questionnaire under review)
B. Post-graduation assessment: Students who have graduated within three to five years will be mailed a questionnaire (Suggested questionnaire under review)

Timelines for Data Collection and Analysis

Student evaluation happens over the course of the year. Exit forms and interviews will be administered as students complete the necessary steps for graduation. Evaluation of exit interviews and student outcomes will be analyzed yearly by the GAC with assistance from the Chair. It is proposed to conduct a post-graduation assessment of the graduate program every three year.

Use of Results

Student and alumni feedback on the program, the results of student learning assessment, and the data on the placement of graduates of the program will be used to modify/improve course offerings, core requirements and review electives in different disciplines.