

Engineering Physics (EP) program at New Mexico State University

Our Mission

The mission of Engineering Physics at New Mexico State University is to offer an accredited degree that combines high-quality engineering and physics programs to best prepare our graduating students for careers in state-of-the-art industry or to move on to advanced study in engineering or physics.

Educational Objectives

EP Objective 1: Competitiveness. Graduates are competitive in internationally-recognized academic, government and industrial environments;

EP Objective 2: Adaptability. Graduates exhibit success in solving complex technical problems in a broad range of disciplines subject to quality engineering processes;

EP Objective 3: Teamwork and Leadership. Graduates have a proven ability to function as part of and/or lead interdisciplinary teams.

EP Organizational Flowchart & Program Coordination

Engineering Physics Program Committee

Heinz Nakotte, Physics (Chair)

Mike DeAntonio, Physics

Tom Hearn, Physics

Steve Pate, Physics

Igor Vasiliev, Physics

Young Ho Park, ME/AE

Steve Stochaj, EE

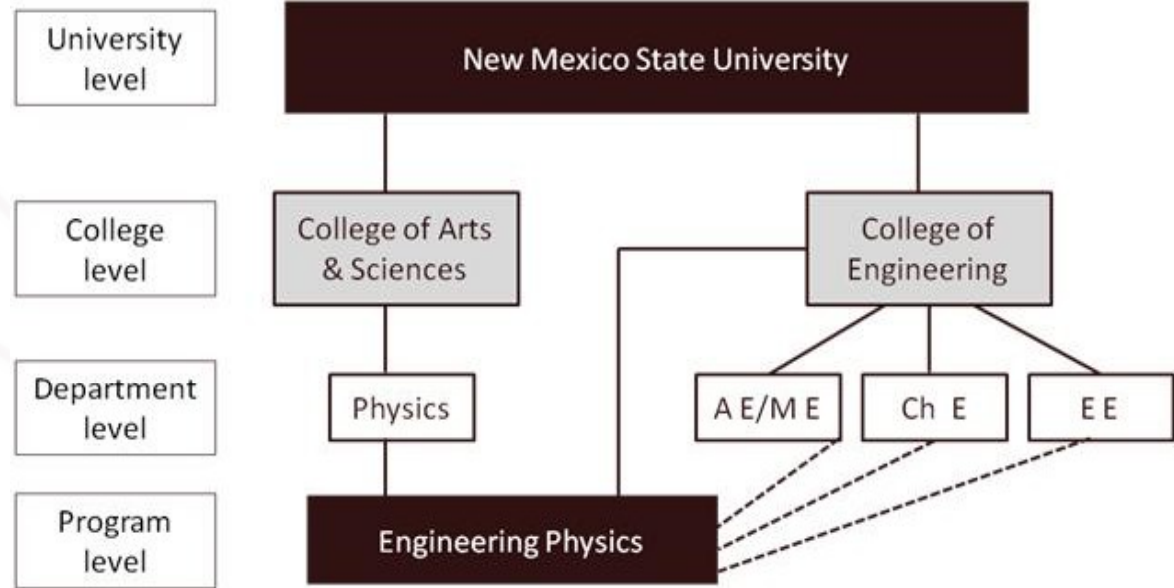
Hongmei Luo, ChE

Stefan Zollner (ex officio)

DoP (Department Head)

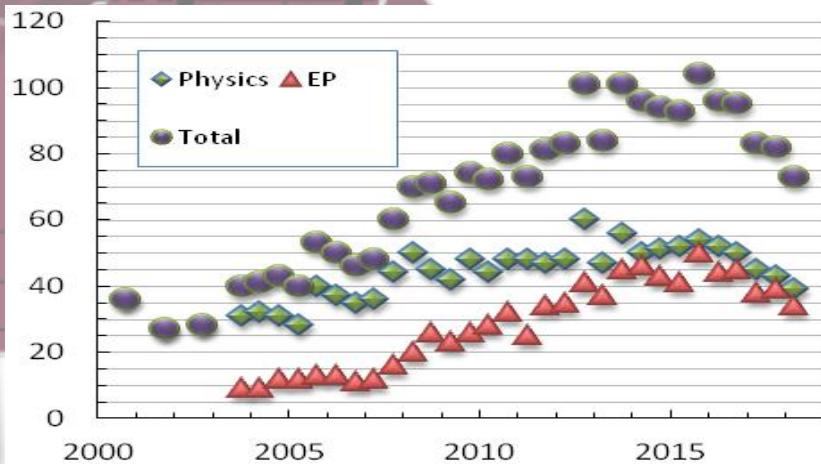
Sonya Cooper (ex officio)

CoE (Associate Dean)



Engineering Physics is an engineering major in the College of Engineering, but it is administered by the Department of Physics, which belongs to the College of Arts & Sciences.

Enrollment Statistics and Graduation Rates



Concentrations

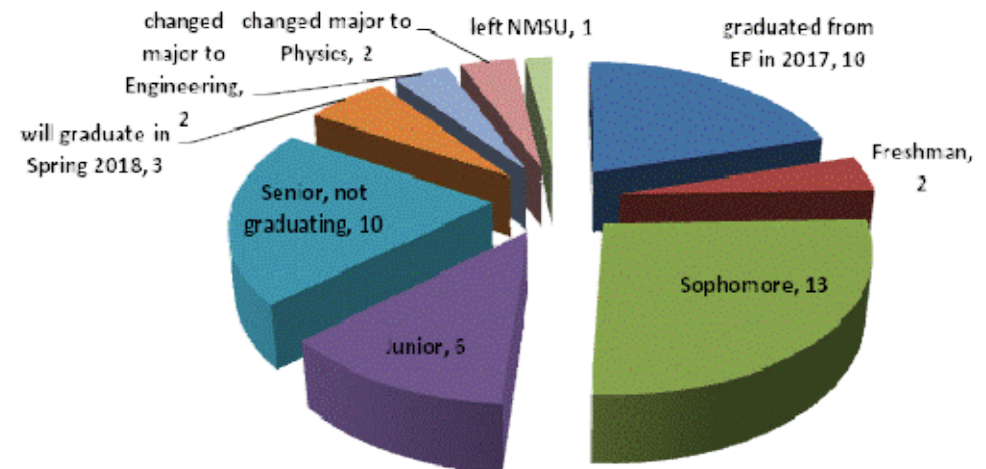
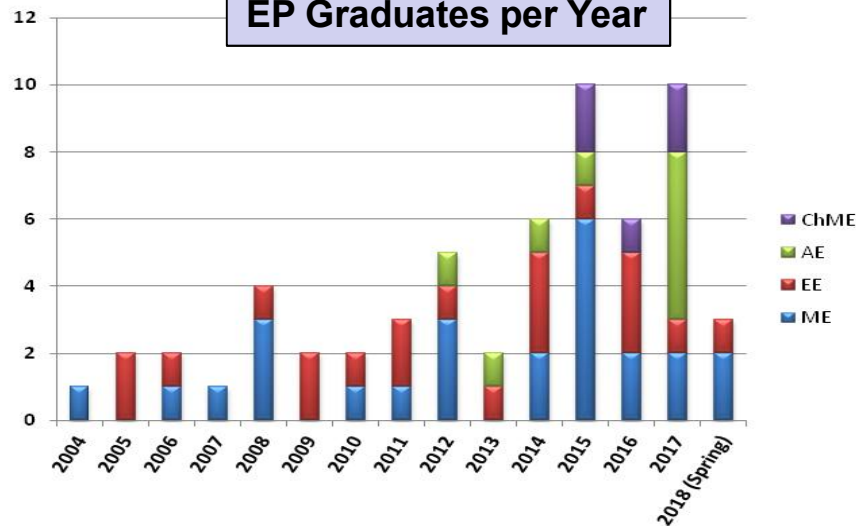
ME: 18
 EE: 9
 AE: 6
 ChME: 1

Diversity Statistics

male: 28; female: 6
 Hispanic: 21; White: 10;
 American Indian: 2;
 Asian: 1.

Classification of current EP Students and Retention since Spring 2017

EP Graduates per Year



Responses to EPEAB 2017 Recommendations

Budget Erosion & Administrative Support Burden

University budget outlook slightly more optimistic.

- hired Marisela Chavez as administrative assistant; unlikely to have another admin position (Program Coordinator) approved in near future
- Zollner served on Experiential Learning Task Force, possible opportunities for undergrad research
- pending request for 3 faculty lines (Materials, Nuclear, Geophysics)

Increasing Research Revenue

Research grants tend to be highly competitive and are limited by faculty involved in research.

- there is some hope because a few funding agencies received significant budget increases
- have existing partnerships with national labs; however, those could be strengthened through stronger institutional investments
- Physics faculty members actively participated in several multi-million dollar collaborative research and educational grant proposals
- tried to offer opportunities for increased competitiveness of our undergrads for internships or REUs, with little success.

Responses to EPEAB 2017 Recommendations - continued

Strategic Partnerships

Some physics faculty members has strong connections to research groups at national labs. NMSU recently hired a new Vice President for Research (Dr. Luis Cifuentes) and there is an expectation that this may result in higher-level partnership contracts in the upcoming years.

Tracking and Reporting of Student Research Opportunities

This is currently done by EP Advisors, and there are plans to collect such data at an institutional level in future.

Centralized Advising

CAASS has agreed that EP students continue to be advised by EP Advisors in the Department of Physics. Overall, the current process seems to work well for our students, although it still needs to be streamlined.

Responses to EPEAB 2017 Recommendations - continued

Push for 120-Credit Hours

So far, nothing has been firmly decided about GenEd/VWW requirements in future, but there are many ideas floating around.

- EP Program Committee members, DeAntonio, Nakotte and Stochaj, are actively involved in the decision-making processes related to GenEd/VWW.

Upcoming ABET accreditation

The EP Program Committee is confident that we will be ready for the ABET re-accreditation of the EP program in 2018.

- revised Program Outcomes Assessment matrix and revisited designation of physics courses as either engineering or science
- the current draft of our Self Study Report (SSR) does not list or discuss capstones and/or other experiential learning activities; we intend to include this in our final document
- ABET has not yet formally announced their new set of Program Outcomes 1-7, therefore our 2018 SSR uses Program Outcomes (a)-(k).

ABET - Timeline

End of spring semester

- Post-Course Instruction Forms and other required materials of courses taught in Spring 2018 are due, to be uploaded to On Drive Folder.
- White Binder Materials (Student Work) for physics courses are due.
- Updated ABET-style CVs and Syllabi from all participants (physics, engineering, supporting units) are due.

Summer I

- Nakotte appointed Interim Department Head (until August 2019).
- Completing Self-Study Report for EP (Nakotte) and Physics (DeAntonio)
 - Updating Tables and Figures to include Spring 2018 results and other data
 - Completing/updating appendices (syllabi, CVs, supporting documents)
 - Editing, formating, printing of SSR
- Self Studies Reports due with ABET/ANSAC on **July 1, 2018**.
- Organizing & reviewing electronic data; printing materials necessary for site visit (office staff, 2 undergrads)

Engineering Physics External Advisory Board Meeting April 28-29, 2017

Summer II and beginning fall semester

- Preparing Binders and other materials for Site Visit (Nakotte, office staff, 2 undergrads)
 - Maroon Instructor's Binders (all courses from Fall 2012 until Spring 2018)
 - White Course Binders (one for each course)
 - Black Objectives Binder (cumulative since Fall 2012)
 - Blue Outcomes Binders (cumulative since Fall 2012)
 - Copies of example binders from various engineering courses
 - Textbooks for all physics courses and some engineering courses
- Updating program websites and organizing content adequately for ABET site visit
 - Student Lists
 - Program description and career information
- ABET Team Chairs will select Program Assessment Teams (2-4 members per program)
 - Team Chair: Engineering, incl. EP: *Janet Callahan (Boise State University, Mat. Sci & Eng)*

First week of October, 2018

- 2-day campus visit of two ABET/ANSAC accreditation teams, one for EP and one for Physics.
 - review of materials, classroom visit, faculty/& student interviews, facility inspections,
 - **working lunch with members from external advisory board**