



Heinz Nakotte

Interim Department Head

**EP Program Overview
and ABET Accreditation**

Department of Physics – Faculty & Staff

14 regular faculty (incl. DH), 2 part-time teaching faculty, 1 research faculty

returning from leave/sabbatical in Fall 2019: Waszek, Zollner

expected to take sabbatical in Fall 2019/Spring 2020: Fohtung, Nakotte

3 bridged hires with reduced teaching allocations: Fohtung, Cooper and Schlegel

Nuclear & particle physics: 3 Experimental (Cooper, Pate, Papavassiliou), 3 Theoretical or Computational (Ma. Burkardt, Engelhardt, Schlegel)

Materials Science: 4 Experimental (Fohtung, Nakotte, Urquidi, Zollner), 2 Theoretical or Computational (Kiefer, Vasiliev)

Geophysics: 2 (Hearn, Waszek)

College Teaching Faculty: (Mi. Burkardt, DeAntonio; both 0.5 FTE)

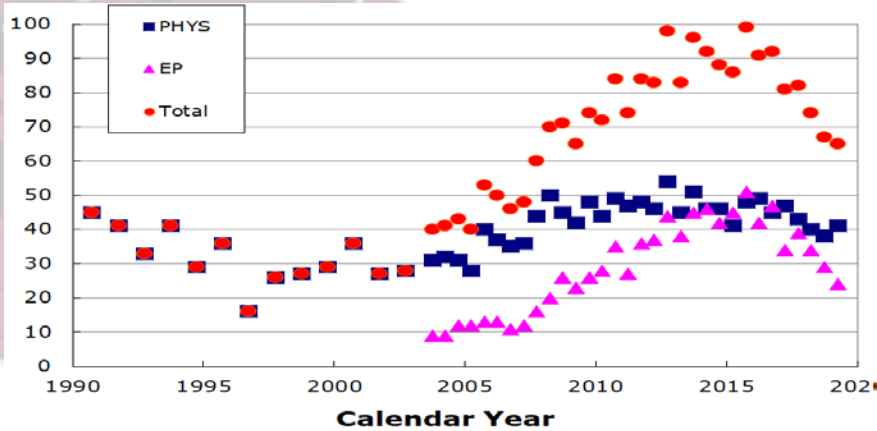
College Research Faculty: 1 (Bruce), 1 Research Scientist, 3 post-docs

3 regular staff members, 2 part-time IT support (1 full-time TA)

Office Admin (Chavez), Budget Admin (Christensen), Lab Coordinator (Carreto-Parra)

IT support (Ghazisaeed, Anandawansha)

Enrollment Statistics and Graduation Rates



Concentrations

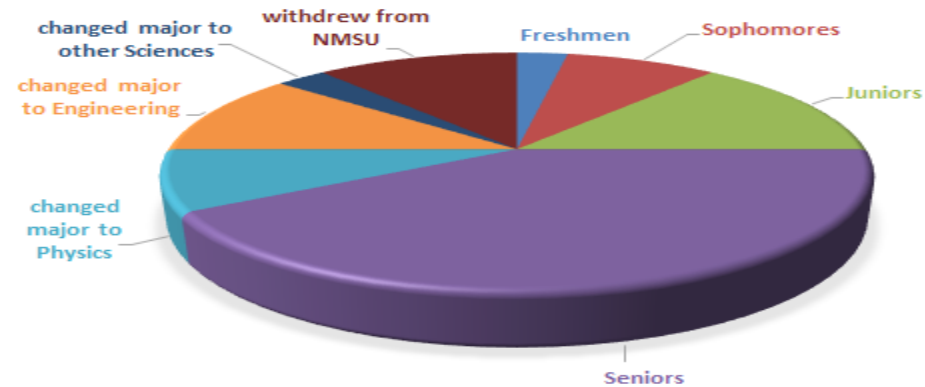
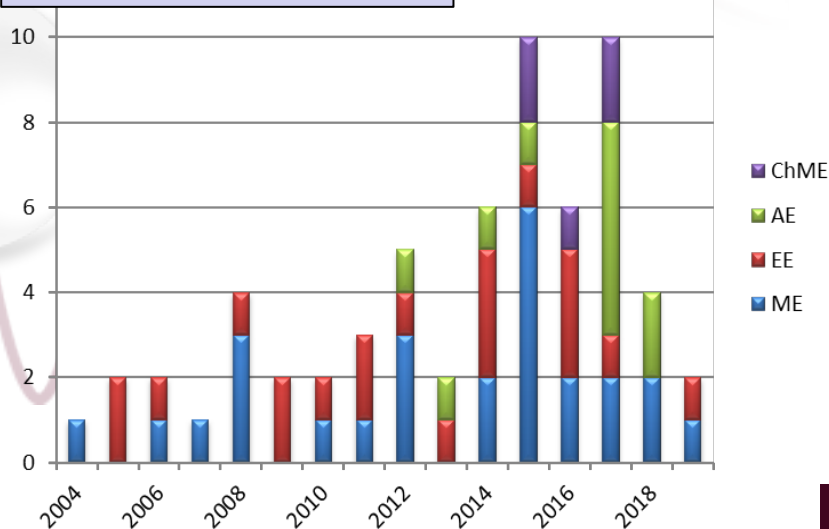
ME: 9
 EE: 7
 AE: 5
 ChME: 3

Diversity Statistics

male: 20; female: 4
 Hispanic: 13; White: 8;
 American Indian: 2;
 Asian: 1.

Classification of current EP Students and Retention since Spring 2018

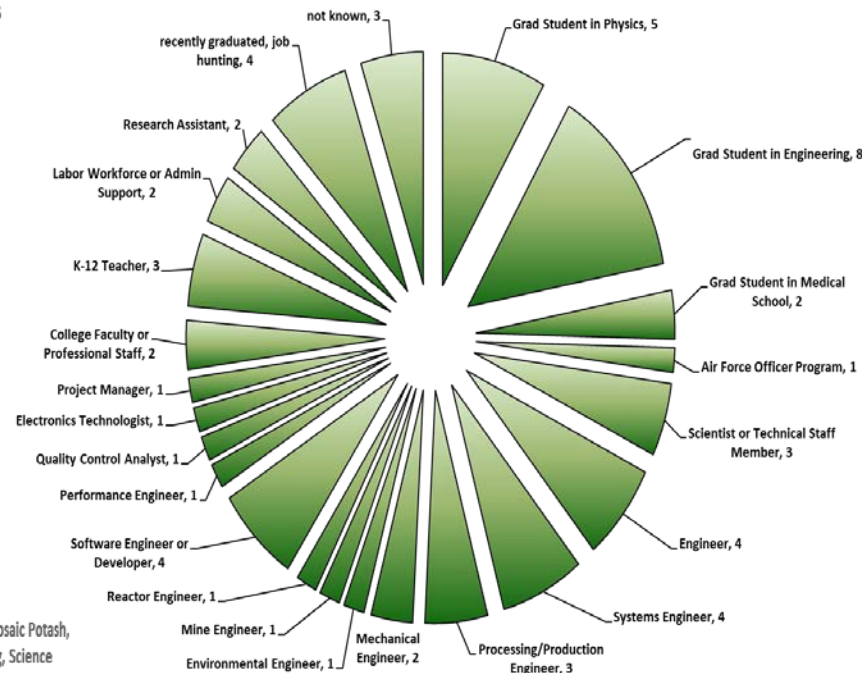
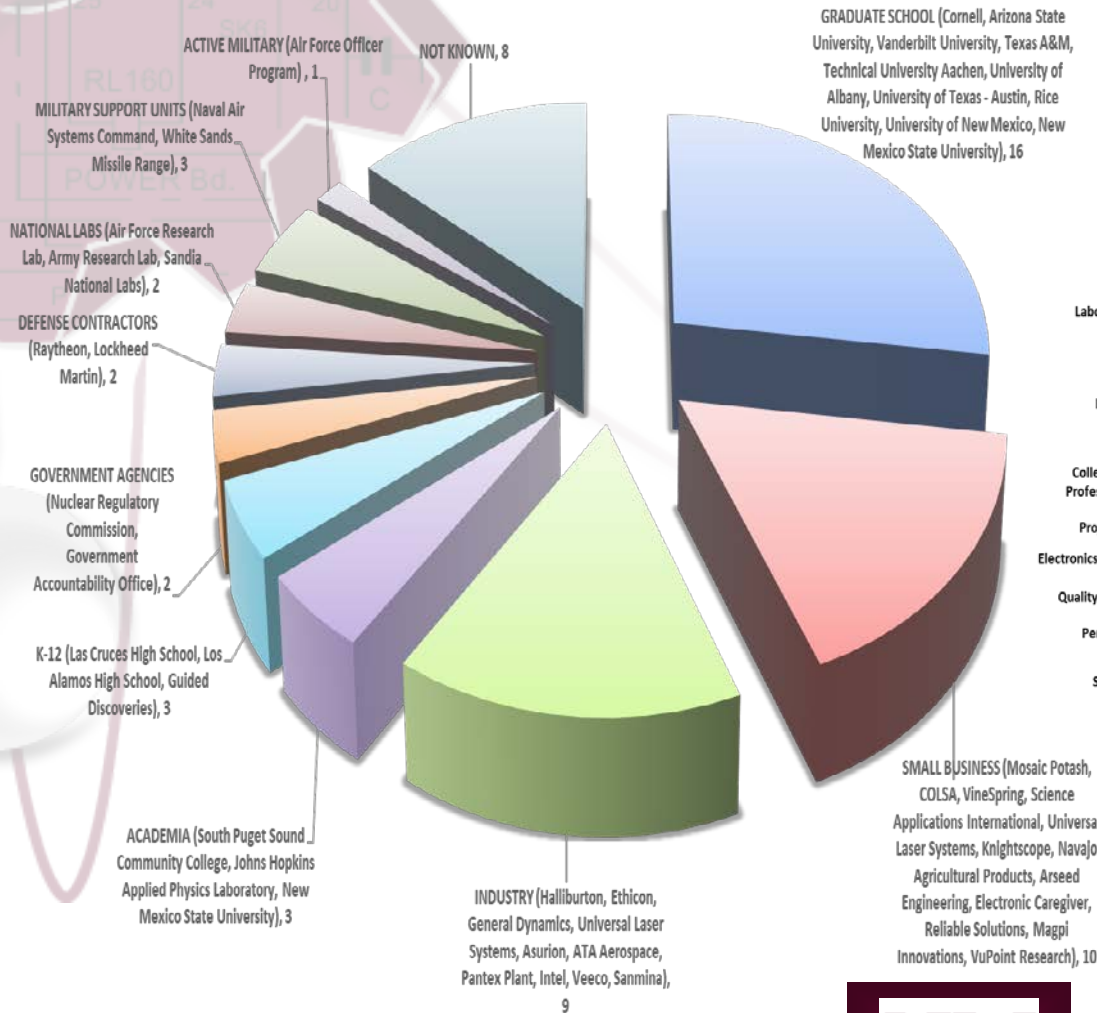
EP Graduates per Year



We are left with only 24 EP majors!

We lost ~1/3 in the past year!

Employers & Job Titles of EP Alumni



Responses to 2018 EPEAB Recommendations

Career Preparation

The department took the following steps to educate our EP majors about career opportunities and to be competitive in pursuing those:

- invited alumni to give presentations about their careers after graduation
- offered help with resume writing and interview through a career colloquium (DeAntonio) and attempted (unsuccessfully) to offer a formal 2-credit career-preparation course (Zollner)
- encourage students to participate in university-wide career-preparation activities (e.g. Aggie Mania) and attend the NMSU Career Fair

Promotion and Tracking of Undergraduate Research / Internship Opportunities

The department implemented the following changes:

- advising form was modified and it now includes sections that 'forces' advisors and students to discuss past/future research/internship opportunities during required advising sessions each semester
- internship / undergraduate research opportunities are advertised to all students; advisors often write letters of recommendations
- if budget permits, the department will support undergraduate students involved in research .

Responses to 2018 EPEAB Recommendations - continued

Increasing Program Participation and Visibility & Web Presence Improvement

Despite numerous activities and improved budgets, this remained an area of major concern.

EP enrollment has continued to decrease in the past year and retention has become somewhat a concern as well. Very few incoming students know about EP and what EP graduates do.

Challenges to recruitment, retention and program visibility will be discussed later today.

Engineering-Wide Interdisciplinary Capstone

The College of Engineering introduced the engineering-wide capstone course, ENGR 401/402, starting in Fall of 2018.

Information about the engineering-wide capstone will be presented on Saturday.

Centralized Advising

Except for incoming freshman, students on probation and student athletes, all EP students are required to meet with a departmental advisor and their advising holds are released by the department.

In general, departmental advisors advise EP students on curriculum, while advisors from CAASS will try to answer any other advising questions that may arise.

The full response to the EPEAB recommendations is provided as a link on the meeting webpage.

ABET Re-Accreditation of EP – Findings and Timeline

September 29 –October 1, 2018: ABET-EAC site visit (SSR & ABET Materials: on display)

- EAC team lead: Karen Fujikawa, EP evaluator: James Rowland
- Luncheon on 10/1 (included Jon Haas, Jesus Au, Galen Helms, Scott Walls)
- Close-out meeting on 10/1 indicated 2 weaknesses and 1 concern

January 29, 2019: ABET issues Draft of Preliminary Findings Document

- two weaknesses identified for EP
- Weakness 1: Criterion 2 - Program Educational Objectives (PEOs)
 - Program Constituencies and Input
 - Periodic Review of PEOs
- Weakness 2: Criterion 4 – Continuous Improvement
 - Separate measure of Program-Outcomes Achievement for EP

Note: The same two weaknesses were identified for most other NMSU engineering programs that underwent re-accreditation visits at that time.

ABET Re-Accreditation of EP - continued

February 26, 2019: 30-day Response submitted to ABET-EAC

- included a memorandum from Lovell/Haas to partly address Weakness 1
- included Fall 2018 data to partly address Weakness 2
- formulated a plan and processes to fully address both weaknesses by the end of SP19

The complete 30-day is provided as a link on the meeting webpage.

May 10, 2019: College Deadline for Final Response Draft to ABET-EAC

- **need EPEAB statement on PEOs and Constituencies**
- need Program Outcomes measures for all Fall 2018 and Spring 2019 courses
- CoE (Sonya Cooper) plans to submit final responses for all NMSU engineering programs on **May 15, 2019**

Summer 2019: ABET-EAC Final Decision on Accreditation

- programs that have one or more **deficiencies** will not be re-accredited; loss of accreditation
- programs that have one of more **weaknesses** will be re-evaluated after 3 years
- programs with only **concerns** or **no findings** will be re-accredited for 6 years

Main Challenge to the EP Program – Enrollment!!!

Recruitment & Retention

- We have very few new incoming freshman applicants to EP and even fewer enroll.
- An increasing number of EP students switches to straight physics or straight engineering.
- Some (current and former) EP students are contemplating (or decided) to pursue a double major (BS in Physics and BS in Engineering) instead. EP students are also tempted to change their major to BA in Physics, with a minor in engineering.
- Most departmental scholarships exclude EP students. CoE general scholarships for EP are limited.

Program Visibility

- High-school graduates and counselors are often unaware of the EP program and careers.
- The small-enrollment EP program often gets lost in recruitment events and is less visible than more traditional engineering programs.
- There seems to be a common misconception that EP is similar to ET.
- Department lacks the manpower to recruit for EP directly. CoE recruitment efforts are geared toward all engineering programs; no focus on individual programs.
- We need to find new CoE Student Ambassadors for EP. Our current EP Ambassador, Scott Walls, will graduate in Spring 2019.