Annual Report of Graduate Education and Research Activity

Joshua A. Robinson
Office of the Associate Dean for Graduate Education and Research
2022/23
2023 Graduate Student NSF- Fellows

Awardees
• Haley Jones, materials science and engineering
• Juliana Drozd, geosciences
• Jessica Sly, materials science and engineering
• Ava Spangler, geosciences
• Aiden Ross, materials science and engineering

Honorable mention
• Frances Meyer, geosciences
• Erik Schoonover, geosciences
• Ryan Spangler, materials science and engineering
• Lydia Spychalla, meteorology and atmospheric science
• Michael Thomas, materials science and engineering
Faculty Awards

NSF CAREER Award
Kimberley Van Meter and Feifei Shi

Jose Fuentes
- 2022-2023 Fulbright Scholar
- American Geophysical Union's Ambassador Award
- Named an AGU Fellow "for seminal contributions to advancing the understanding of the processes controlling gas exchange between vegetation and the atmosphere"

Cynthia Brewer
- International Cartographic Association 2023 Carl Mannerfelt Gold Medal

Kimberly Lau
- 2023 Sloan Research Fellowship

Shimin Liu and Guijie Sang
- Society of Petroleum Engineer Rossiter Raymond Award
Faculty Awards

**John C. Mauro**
- Academician of the World Academy of Ceramics

**Long-Qing Chen**
- Elected as a foreign member of the Academia Europaea

**Zi-Kiu Liu**
- Honorary symposia, TMS, “Materials Genome, CALPHAD, and a Career over the Span of 20, 50, and 60 Years: An FMD/SMD Symposium in Honor of Zi-Kui Liu”

**Dipanjan Pan**
- College of Fellows, American Institute for Medical and Biological Engineering (AIMBE)

**Russell Johns**
- Society of Petroleum Engineer SPE Anthony F. Lucas Gold Medal for Technical Leadership

**Barbara J. Arnold**
- Society for Mining, Metallurgy, and Exploration Howard N. Eavenson Award "in recognition of her unsurpassed contributions to the coal industry."
Faculty Awards

**Major PSU Awards**

**Christopher Fowler**
- Penn State Award for Faculty Outreach

**Peter Heaney**
- Penn State Atherton Award for Excellence in Teaching

**Jon-Paul Maria**
- Penn State Faculty Scholar Medal for Engineering

+ many more regional and university awards.
EMS Proposal Submission

– PIs must submit **EMS Proposal Submission Form** >3 weeks before the submission date.

  Gives ADGER staff time to ensure guidelines are followed, budgets adhere to RA21, approvals are secured, and all forms, representations, and certifications are accurate and complete.

– PIs are expected to submit final version of all required proposal documents to the EMS Research Office at least >5 workdays before the due date.
EMS Graduate Education & Research, 2022/23

- **798** Fall enrolled graduate students (-2.9%)
- **61** Doctoral degrees conferred (-11.6%)
- **155** Master’s degrees conferred (+6.9%)
- **$160.1M** Proposals total (+11.6%) (360 proposals submitted)
- **$48.7M** Awards total (-9.2%)
- **$46.6M** Direct faculty expenditures (+5.0%)

Proposals, Awards and Expenditures follow assignment of credit by faculty home unit for all research activities across the university.
Fall Graduate Student Enrollment, 2014-2023
Fall 2023 Graduate Enrollment by Department

798 TOTAL GRADUATE STUDENTS

- METEO 9%
- EME 12%
- EME-WC 14%
- GEOG 7%
- GEOG-WC 27%
- GEOSC 8%
- MATSE 23%

477 RESIDENT GRADUATE STUDENTS

- METEO 14%
- EME 21%
- EME-WC 14%
- GEOG 12%
- GEOG-WC 27%
- GEOSC 14%
- MATSE 39%

TOTAL GRADUATE STUDENTS

- EME 21%
- GEOG 12%
- GEOSC 14%
- MATSE 23%

RESIDENT GRADUATE STUDENTS

- EME 21%
- GEOG 12%
- GEOSC 14%
- MATSE 39%
Graduate Degrees Conferred, 2013-2022

216
GRADUATE
DEGREES
2022/23

PennState
College of Earth
and Mineral Sciences
Research Proposal and Award Trends

Proposals:
- 20/21: $200 M
- 21/22: $140 M
- 22/23: $180 M

Awards:
- 20/21: $60 M
- 21/22: $50 M
- 22/23: $40 M

Percentage change:
- Proposals: 11.6%
- Awards: -9.2%
Total Research Expenditures, 2014-2023

$0 M $10 M $20 M $30 M $40 M $50 M $60 M $70 M

13/14 14/15 15/16 16/17 17/18 18/19 19/20 20/21 21/22 22/23

Direct EMS Faculty Participation Other Central

5.0%
Research Expenditures FY23

DIRECT FACULTY EXPENDITURES

\$46.6M

- MATSE 36.0%
- GEOSC 18.4%
- METEO 19.9%
- EME 16.2%
- EESI 3.6%
- GEOG 2.9%
- EI 2.5%
- Other 0.6%

EXPENDITURES MANAGED BY SUBUNIT

\$43.8M

- MATSE 28.0%
- METEO 22.5%
- GEOSC 11.6%
- EESI 13.0%
- GEOG 11.6%
- EI 23.3%
- EME 0.3%

Proposals, Awards and Expenditures follow assignment of credit by faculty home unit for all research activities across the university.
FY23 Expenditures by Funding Source

$46.6M DIRECT FACULTY EXPENDITURES

- NSF 30.9%
- DOE 28.6%
- DOD 12.5%
- NASA 11.0%
- Other Federal 6.8%
- Industry 5.7%
- Non-Profit 3.1%
- State 1.0%
- Other Sources 0.4%

PennState College of Earth and Mineral Sciences
Thank you!