EARTH AND MINERAL SCIENCES

About the College

Lee Kump, Dean, College of Earth and Mineral Sciences

For more than a century, Penn State’s College of Earth and Mineral Sciences has been a beacon of intellectual leadership on issues of utmost importance to the welfare of the Commonwealth, the nation, and beyond. The college is creating tomorrow’s leaders in Earth, energy, and materials sciences and engineering and plays an important role in preparing a diverse and talented workforce, as well as providing new knowledge that will drive the economic vitality of the state and the nation. With its top ranked programs and five academic departments, the college provides a comprehensive, high-quality education and is at the forefront of both innovative teaching and path-breaking research focused on meeting the needs of our global society.

Distinguished researchers and educators at the cutting edge of their disciplines are dedicated to supporting hands-on learning and research that provides each student with invaluable, experiential knowledge.

MORE INFORMATION ABOUT THE COLLEGE (https://www.ems.psu.edu/about/)

Mission and Goals

By building on its reputation for scientific leadership in the earth, energy, and materials sciences and engineering, the College of Earth and Mineral Sciences’ mission is to develop new discoveries about how the Earth’s systems interact with one another and with people and their institutions and to use the knowledge gained from those discoveries to inspire students to become new generations of leaders.

MORE INFORMATION ABOUT THE MISSION AND GOALS OF THE COLLEGE OF EARTH AND MINERAL SCIENCES (https://www.ems.psu.edu/about/who-we-are/mission-vision-and-strategic-plan/)

Departments and Schools

John and Willie Leone Family Department of Energy and Mineral Engineering

The John and Willie Leone Family Department of Energy and Mineral Engineering offers programs addressing topics such as the effective production, conversion, use, and management of energy. Instruction in theory, applications, and project design is augmented by hands-on training, problem-based learning, and interactive classes with individual attention.

MORE INFORMATION ABOUT THE JOHN AND WILLIE LEONE FAMILY DEPARTMENT OF ENERGY AND MINERAL ENGINEERING (http://www.eme.psu.edu)

Department of Geography

The Department of Geography offers a comprehensive academic program that includes bachelor’s degrees, minors, and certificates. Programs are designed to educate and inspire students to become critical and committed citizens who contribute to solutions for our planet.

MORE INFORMATION ABOUT THE DEPARTMENT OF GEOGRAPHY (http://www.geog.psu.edu)

Department of Geosciences

The Department of Geosciences offers an academic program that include bachelor’s degrees, minors, and certificates designed to provide students with an integrated, interdisciplinary study of the whole Earth, afford them with the skills and knowledge needed to solve real-world problems, and prepare them for careers at the forefront of geosciences.

MORE INFORMATION ABOUT THE DEPARTMENT OF GEOSCIENCES (http://www.geosc.psu.edu)

Department of Materials Science and Engineering

The Department of Materials Science and Engineering offers an academic program that provides students with a broad understanding of materials as well as the fundamental techniques of science and engineering used in the discipline, and a flexible curriculum that allows students to tailor their degree to their particular interests.

MORE INFORMATION ABOUT THE DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING (http://www.matse.psu.edu)

Department of Meteorology and Atmospheric Science

The Department of Meteorology and Atmospheric Science offers a program that explores the significance of weather and climate as it relates to the environmental, energy, agricultural, oceanic, and hydrological sciences. Students study topics ranging from severe weather to numerical weather prediction to climate change to weather risk to air pollution.

MORE INFORMATION ABOUT THE DEPARTMENT OF METEOROLOGY AND ATMOSPHERIC SCIENCE (http://www.met.psu.edu)

Baccalaureate Degrees

- Earth Science and Policy, B.S.
- Earth Sciences, B.S.
- Energy and Sustainability Policy, B.A.
- Energy and Sustainability Policy, B.S.
- Energy Business and Finance, B.S.
- Energy Engineering, B.S.
- Environmental Systems Engineering, B.S.
- Geobiology, B.S.
- Geography, B.A.
- Geography, B.S.
- Geosciences, B.A.
- Geosciences, B.S.
- Liberal Arts and Earth and Mineral Sciences Concurrent Degree;
  Liberal Arts and Engineering Concurrent Degree (Earth and Mineral Sciences)
- Materials Science and Engineering, B.S.
- Meteorology and Atmospheric Science, B.S.
- Mining Engineering, B.S.
- Petroleum and Natural Gas Engineering, B.S.

Minors

- Climatology, Minor
- Earth and Sustainability, Minor
- Earth Systems, Minor
- Electrochemical Engineering, Minor
• Electronic and Photonic Materials, Minor
• Energy Business and Finance, Minor
• Energy Engineering, Minor
• Environmental Systems Engineering, Minor
• Geographic Information Science, Minor
• Geography, Minor
• Geophysics, Minor
• Geosciences, Minor
• Information Sciences and Technology for Earth and Mineral Sciences, Minor
• Meteorology, Minor
• Mining Engineering, Minor
• Petroleum and Natural Gas Engineering, Minor
• Polymer Science, Minor
• Watersheds and Water Resources, Minor

Certificates
• Climate and Environmental Change, Certificate
• Earth Sustainability, Certificate
• Environment and Society Geography, Certificate
• Geographic Information Science, Certificate
• Geospatial Big Data Analytics, Certificate
• Global Environmental Systems, Certificate
• Justice, Ethics, Diversity in Space, Certificate
• Landscape Ecology, Certificate
• Landscapes: Societies, Cultures, and Political Economies, Certificate
• Weather Forecasting, Certificate

College Procedures

Administrative Enrollment Controls
Some majors in the College of Earth and Mineral Sciences are administratively enrollment controlled due to limited space, faculty, and other resources. Students should work closely with an academic adviser to ensure they are meeting all entrance to major requirements.

MORE INFORMATION ABOUT ADMINISTRATIVE ENROLLMENT CONTROLS FOR PROGRAMS IN THE COLLEGE OF EARTH AND MINERAL SCIENCES (https://advising.psu.edu/entrance-major-requirements-college-earth-and-mineral-sciences/)

Change of Campus
Most programs in the College of Earth and Mineral Sciences are completed at the University Park campus; however, students can begin their Penn State courses at any Penn State campus and transition to University Park. To plan for your change of campus, please work closely with your academic adviser.

MORE INFORMATION ABOUT CHANGE OF CAMPUS (https://www.ems.psu.edu/undergraduate/academic-advising/change-campus/)

Concurrent Majors
A Concurrent Majors Program is one in which students take courses to concurrently meet the requirements of at least two majors, with graduation for all majors in the program occurring during the same semester. This requires careful planning; students must meet with the faculty adviser in charge of their program for approval.

MORE INFORMATION ABOUT ACADEMIC WARNING (https://www.ems.psu.edu/undergraduate/academic-advising/policies-procedures-and-forms/academic-progress/)
MORE INFORMATION ABOUT THE OFFICE OF EDUCATIONAL EQUITY (https://www.ems.psu.edu/undergraduate/beyond-classroom/diversity-programs/)

**Beyond the Classroom**
All students in the College of Earth and Mineral Sciences are encouraged to participate in out-of-class experiences such as undergraduate research, study abroad, and internships. Opportunities exist within the college, across the University, and beyond.

MORE INFORMATION ABOUT OPPORTUNITIES BEYOND THE CLASSROOM (https://www.ems.psu.edu/undergraduate/beyond-classroom/)

**Honors Programs**

**Schreyer Honors College**
The Schreyer Honors College, regarded as one of the nation’s top programs of its kind, promotes achieving academic excellence with integrity, building a global perspective, and creating opportunities for leadership and civic engagement. Schreyer Scholars, including those admitted after their first or second year of enrollment, are a diverse and motivated group of approximately 2,000 students at University Park and 20 Commonwealth campuses. The College strives to educate students who will have an important and ethical influence in the world, to improve educational practice, and to continue to be recognized as a leading force in honors education nationwide.

MORE INFORMATION ABOUT THE SCHREYER HONORS COLLEGE (http://www.shc.psu.edu)

**Contact**

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