

INDIANA UNIVERSITY  
DEPARTMENT OF  
GEOLOGICAL  
SCIENCES



**FOR ALL**

The Indiana University **Bicentennial Campaign**

# FOR ALL THE EXPLORERS DISCOVERERS PROBLEM SOLVERS

*At a time when the world faces great challenges—climate change and increasing demand for fossil fuels, alternative energy sources, and clean water—we ask ourselves:*

*What kind of world will future generations inherit? How will they fulfill the promise of a better tomorrow? Who will train them to think creatively and find solutions?*

*We will—with your help.*

The IU Department of Geological Sciences has been at the forefront of geological exploration for 150 years. We unlock the potential of technology and innovation in traditional and emerging natural energy sources. We observe surfaces, peel back layers, uncover what's hidden—so current and future generations have sustainable sources of energy, water, and metals. But our greatest achievements are yet to come.

As part of **For All: The Indiana University Bicentennial Campaign**, we are committed to supporting tomorrow's scientists and industry leaders, while also investing in the infrastructure necessary to accelerate research.

**Together, we can chart a better future, for all.**

**We push boundaries,  
challenge assumptions,  
redefine what's possible.**

On the front lines of industry, science,  
and public policy; in the laboratory and in  
the field ... we roll up our sleeves and get  
things done.

Because the world needs us—now more  
than ever.





**Anna Nowicki**  
PhD Candidate, Seismology

*“When I was eight, I watched a video about volcanoes. This woman came out in a big fireproof suit and explained what she did. I looked at the TV and said, ‘That’s what I’m going to do.’”*

*Today, Nowicki focuses on the hazards associated with earthquakes. “I’m driven not just by the scientific questions, but also by the desire to help people. I think we can predict where landslides are likely to occur and warn people within minutes, anywhere around the globe.”*

*The U.S. Geological Survey agrees—it has given Nowicki a grant to fund her course work and research.*

**FOR ALL  
THE BRIGHT MINDS  
WE’LL INSPIRE**

**GOAL #1: SHAPE THE NEXT GENERATION OF RESEARCHERS AND INDUSTRY LEADERS**

Industry and academia are in urgent need of young scientists: technically trained and intellectually creative. IU Geological Sciences is well positioned to help meet those needs by attracting more top-quality graduate students and postdoctoral fellows.

The result: stronger students who can focus on their studies without worrying about additional debt. They will inspire professors and peers, and enter the workforce ready to tackle society’s problems.

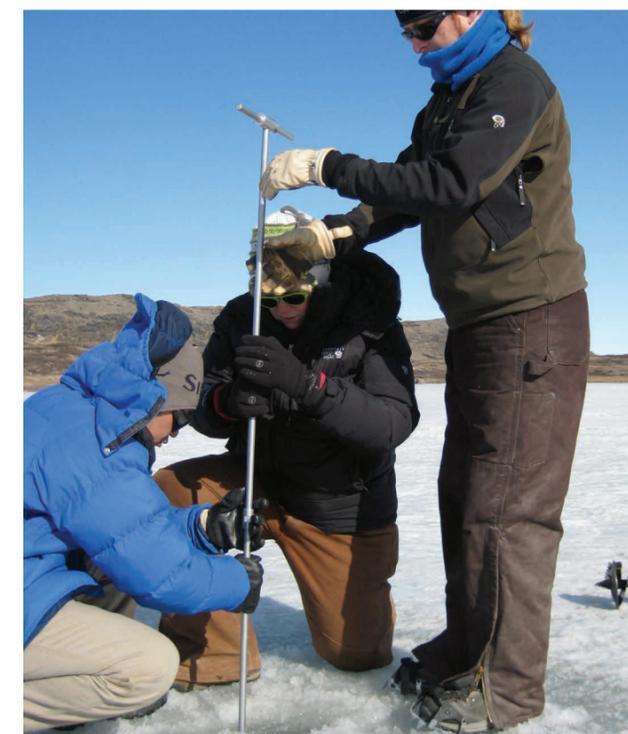
*“Grad students, in particular, are rewarding. They may not be ‘fully cooked’ as scientists, but they have great energy and ideas. Talking to them can catalyze my own thinking. And to see them go out and start making their own contributions—that is really satisfying.”*

—**Laura Wasylenki**  
Assistant Professor, Biogeochemistry of Metals

**IT STARTS WITH YOU**

Today’s students will be tomorrow’s research and industry leaders—but only if they can afford tuition. With 25 percent of graduate students owing nearly \$100,000 in student loans, the cost of higher education is one of the greatest challenges facing our country.

Endowed funds to support masters and PhD students, and to enable undergraduate participation in training at the Judson Mead Geologic Field Station will help us to attract top thinkers and doers to IU.



*Graduate students on NASA-led program drill ice cores in Kangerlussuaq, Greenland.*



# FOR ALL THE DOORS WE'LL OPEN

IT STARTS  
WITH YOU

Support of the Judson Mead Geologic Field Station will provide scholarships and enable construction of new housing to complement the recently added classroom and laboratory facility. Modern accommodations will allow us to host scientific conferences and industry workshops to help underwrite the cost of maintaining the Montana field station.

## GOAL #2: PROMOTE STUDENT SUCCESS THROUGH FIELD EXPERIENCE

Industry is in dire need of leaders who can transition effortlessly from the lab to the field to the boardroom.

There is no substitute for getting out into the field and seeing structures and formations firsthand. That practical foundation is valuable, no matter where your career takes you. We want our graduates to understand the physical reality behind models and simulations.

IU's Judson Mead Geologic Field Station is the site of the nation's premier field program, hosting not only IU undergraduates but also students from an average of 40 other colleges and universities each year.



IU wasn't on Ellen Reat's radar as an undergraduate geology major at Vanderbilt. Then she attended IU's Judson Mead field camp in Montana.

*"That was the best summer of my life. I learned an unbelievable amount—it's hands on, and you can see the structures right there in front of you. I really fell in love with field geology."*

—Ellen Reat  
MS Student, Tectonics and Basin Analysis

More than 6,000 students from over 278 universities have gone through IU's field program since its inception in 1949. Recently, the department added a one-of-a-kind field course in the "cradle of humanity," Tanzania's Olduvai Gorge. However, such programs are expensive. Field study scholarships will ensure that no students will be kept from taking these critical field courses because they lack financial resources.



**Jackson Njau**

Assistant Professor, Paleoanthropology

*Conducting research in Tanzania's renowned Olduvai Gorge is a paleoanthropologist's dream. But drilling core samples there is almost unheard of.*

*In his efforts to understand the role of environmental change on human evolution, Njau co-led a team that recovered sediment cores from ancient lakebeds. Preliminary analysis of the cores reveals a long record of environmental change, with plants and animals responding to the dynamics of volcanism and climate.*

*"This will be an immense amount of data. It offers invaluable research opportunities for students. As a professor, one of my important roles is to train future scholars. I emphasize practical, hands-on experience in the laboratory and the field. They develop their field skills along with their understanding of theory, and it instills in them the spirit of scientific inquiry."*



Our students, professors and alumni in the geological and atmospheric sciences are active all over the world—hosting field courses and conducting scientific exploration and research. The points on the map show just some of the locations where we're making an impact.



**Sarah Pietraszek-Mattner**  
Exploration Manager  
ExxonMobil Exploration Company

*Sarah Pietraszek-Mattner has come a long way from her time as a PhD student at IU, where her research involved burying oil samples in a faculty member's backyard.*

*Pietraszek-Mattner now leads a team of geoscientists and geophysicists looking at sub-surface data to find drilling opportunities for oil and gas. She then facilitates discussion about the team's work with senior management and other stakeholders.*

*"ExxonMobil has been very good to me ... but I got that base from teaching and doing research at Indiana University," she says. "The combination of those two experiences has very truthfully made me who I am today."*

*With ExxonMobil, she's worked in the shadow of the Zagros mountain range in Kurdistan, in the bustling Australian city of Melbourne, and off the coast of the Atlantic Ocean in Angola. But she admits with a laugh that she may have to return to Indiana soon because she still has samples buried in Bloomington that need to be dug up and analyzed!*



**Julie Fosdick**

Assistant Professor, Robert R. Shrock  
Professorship in Sedimentary Geology

*As a mountain erodes, its sediment accumulates in the basin below. Fosdick reads backwards through those deposits to determine the geology of the mountain when it first arose, and what its environment was like at different geological periods.*

*"I want to improve our knowledge about the cause and effect of environmental changes. We're telling a story, using science to do the detective work."*



**FOR ALL  
WHO WILL SHAPE  
OUR FUTURE**

Assistant Professor Julie Fosdick and MS student Ellen Reat collaborate on research in the field of tectonics.

**GOAL #3: ATTRACT TOP FACULTY WHO INSPIRE AND INNOVATE**

Studying climate change, predicting natural disasters, tracing humanity back to its infancy ... this is the kind of work our faculty is leading right now.

Faculty is the first line of influence for future geologists who choose IU. Faculty members are also the ones who will shape the tenor of the department for years to come. To build upon our department's foundation of excellence, we have added eight new forward-thinking faculty members in the last decade alone.

**IT STARTS  
WITH YOU**

Attracting strong candidates for postdoctoral work is a key way IU will cultivate the next generation of leaders. Postdoctoral fellows energize the research environment, helping professors to be more productive and competitive for external funding. Our goal is to support two endowed postdoctoral positions each year.



# FOR ALL THE POTENTIAL WE'LL UNLEASH

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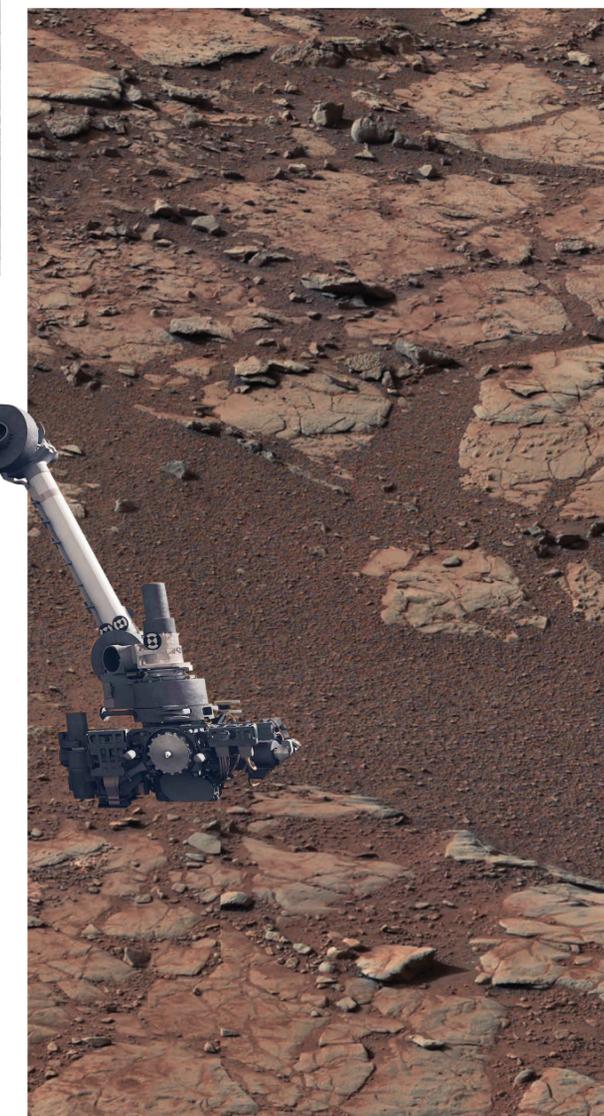
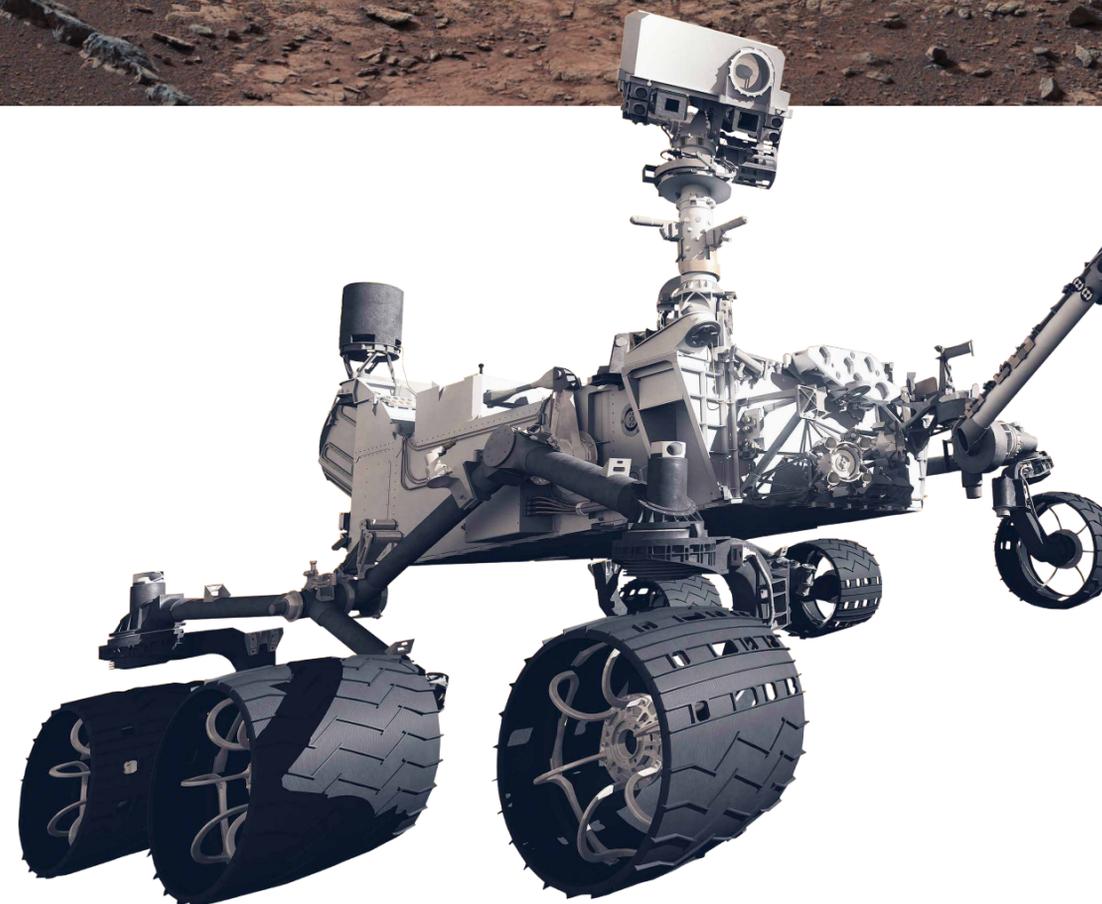
## GOAL #4: MAKE DISCOVERIES THAT CHANGE THE WAY WE LIVE

IU Geological Sciences has a long history of attracting and molding versatile leaders and accomplished researchers.

For example, Professor David Bish, Haydn Murray Chair of Applied Clay Mineralogy, studied mineral samples collected by NASA's Curiosity mission, seeking evidence of life on Mars. And Jim Farnsworth, BS'74, is a major player on the international stage with his innovative oil-discovery company, Cobalt International Energy.

The spirit of research and exploration championed by IU keeps faculty and alumni at the forefront of their fields—but we're thinking bigger.

We want top scientists to come to IU and stay. We want them to mentor their students and peers. We want to prepare future industry trailblazers and scientific visionaries. We want to expand our contributions to matters of global concern.



IT STARTS  
WITH YOU

Support of the department's unrestricted funds will enable us to respond to unforeseen challenges and opportunities—to fund that critical research, support that promising student, or secure that next great hire.

**YOU ARE THE ONE**

WHO SUPPLIES THE  
**FUNDING**

THAT ENABLES A  
**FACULTY MEMBER**

TO  
**TACKLE RESEARCH**  
AND GAIN NEW INSIGHTS TO

TO  
**PREPARE STUDENTS**  
WHO WILL

**EXPLORE THE**  
**WORLD**  
AND ASK TOUGH  
**QUESTIONS**

TO

**MAKE DISCOVERIES**

**THAT CHANGE**

**THE WAY WE LIVE**

**What kind of world do we want?**

A world with sufficient energy, water, and metals to propel our economy forward, without compromising our environment.

A world with natural beauty that makes the journey worthwhile.

A world we are proud to hand over to our children ...



# FOR ALL WHO ENVISION A BETTER WORLD

We know that, together, the world we imagine is possible.

What others overlook, we examine more closely.

When society needs answers, we find them.

Please join us by offering your support to the Indiana University Department of Geological Sciences.

**For all we've achieved in the last 150 years, for all we'll achieve in the future, for the promise of a better world ... we have important work to do.**



**FULFILLING** *the* **PROMISE**

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