

# EARTH & ENVIRONMENTAL SYSTEMS

FORMERLY GEOGRAPHY, GEOLOGY & ANTHROPOLOGY

## NEW BI-YEARLY NEWSLETTER

### CONNECT WITH US!

Follow us on our social media profiles. Our goal is the ability to go live with events, trips and field work.

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### SCHOLARSHIPS

EES has several scholarships and department awards available for our students. See page 5 for the entire list of EES scholarships and our department funds that help support our students and their ISU experience.

PAGE 3

### ALUMNI SPOTLIGHT

We hope to highlight Alumni across our disciplines by sharing their successes and creating a stronger Alumni Mentor Program.

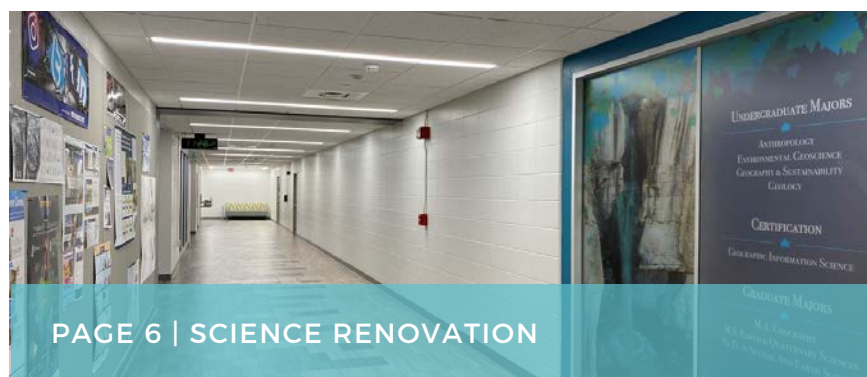
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# Ways to Give and Support EES

## EES AWARDS



2021-2022



## Scholarships and Awards

There are so many great ways that you can help support our students and programs in EES. Donations to any of our EES scholarships and awards has a priceless impact on student learning and gives them the hands-on experience Indiana State University prides itself on.

Your gift will do so much more - it supports our EES family to become their very best.

**SCHOLARSHIP AND FUND LISTING PAGE 8**

## Summer Undergraduate Research Experiences (SURE) Program

Students spend ten weeks during the summer engaged in intensive research under the direction of a faculty mentor. SURE is open to all ISU undergraduates who wish to pursue research in the sciences.

Dr. Latimer, Dr. Stone and Dr. Speer are active mentors in the SURE program. Students often present their findings at national conferences.



## Foundation Funds

**ANTHROPOLOGY PROGRAM | GEOGRAPHY RESEARCH**  
**GEOLOGY PROGRAM | GEOLOGY RESEARCH**

Our Foundation Funds help to support our speaker series which allows us to introduce students to a wide range of topics and ideas from scholars and alumni. As alumni, your voice is a powerful tool which can lead to networking, mentoring, and fostering relations with current EES Students.



# EES Scholarships and Awards



## Ways to Give

The giving generosity of our alumni helps bring to life opportunities that students wouldn't otherwise get to experience.

Students in need get a helping hand through scholarships, giving them the freedom to participate in experiences and conduct research.

Supporting department funds allows us to give quality educational experiences, opportunities, and research tools they otherwise wouldn't benefit from.

Your gift supports our faculties ability to provide resources that attract and retain EES students.

### Allan Harrison Graham Memorial Scholarship

The intent of this scholarship is to honor the donor's grand uncle, Allan Harrison Graham, through support for students in the Department of Earth and Environmental Systems intending to pursue a bachelor's degree in Geology.

### Ben Moulton Award

Two awards shall be considered annually: 1. An award to a doctoral student, based on evidence of potential research skills. The award shall take the form of one annual student membership in the appropriate learned society (AAG, GSA) or its equivalent.

### Blackwell Scholars - Geology

Recipients must be a Geology major, US citizen and resident of the state of Indiana. Student maintain minimum 3.0 grade point average on a 4.0 scale

### Donald G. Brown Endowed Scholarship

Consideration for this scholarship shall be given to Indiana State University undergraduate students pursuing a major in the Department of Geography, Geology and Anthropology at Indiana State University, have demonstrated financial need, and have applied themselves academically and are sincere in their academic endeavors.

### Donald & Mary Jo Stanley Scholarship

Outstanding and deserving student demonstrating need for financial support. It is preferred that the recipient be a resident of a mid-western state, not be a participant in intercollegiate athletics, have a minimum GPA of 3.0 and not use drugs or tobacco.

### Dr. L. Michael Trapasso Research Grant

For research expenses (including but not limited to: research itself, field work, associated expenses, purchase of research equipment, supplies, and materials); must be pursuing a graduate degree in the Department of Earth and Environmental Systems; preference to a student with concentration in Climatology, Remote Sensing, GIS, Water Resources, or Paleoclimatology;

### Dr. Paul Mausel EES Graduate Research or Travel

Funds will support the scholarship of graduate students in the Department of Earth and Environmental Systems, including travel for dissemination of research or travel for data collection, professional development opportunities, and limited equipment or data acquisition costs.

### Dr. Maxwell E. Britton Memorial Scholarship

Consideration for this scholarship shall be given to an Indiana State University student must be a junior or senior enrolled full time. Recipient must be majoring in a field related to environmental studies, sciences, or preservation. Key interest areas include: geoscience, environmental science, geography, and sustainability.

# Scholarships and Awards cont.



## Emily Troxell Geology Scholarship

The intent of this scholarship is to provide support to Geology majors in the College of Arts and Sciences at Indiana State University. Recipients must demonstrate financial need; must have a GPA of at least 2.9; must be pursuing undergraduate degree in Geology; must be a sophomore, junior, or senior in year funds are applied; must submit one-page essay.

## G. David Koch Memorial Award

Open to all undergraduates majoring in the Department of Earth and Environmental Systems.

## Hildegard Pang Anthropology Scholarship

Recipients must be full-time undergraduate students pursuing a major in Anthropology; possess a minimum cumulative GPA of 3.2 and manifest promise or leadership within their chosen discipline.

## John E. Oliver Memorial Scholarship

Scholarship recipient selection shall be based on the following criteria: Preference given to full time ISU student with a minimum GPA of 3.5, must be talented and high achieving student showing academic promise in the area of physical Geography with preference given to students specializing in Climatology

## Richard E. Kirk Memorial Scholarship

The amount available is \$500.00 to be awarded as a waiver of fees in the amount of \$250.00 each semester. Recipient will be a Geology or Geoscience Major in the Department of Earth and Environmental Systems.

## Richard F. Duwelius Geology Field Camp Scholarship

Considerations for this scholarship shall be given to an Indiana State University student(s) who meets the following criteria: Must be a United States citizen, a senior Earth and Environmental Sciences (Geosciences) major with a preference given to students interested in water resources.

## Richard F. Duwelius Geosciences Scholarship

Consideration for this scholarship shall be given to an Indiana State University student or students who meets the following criteria:

- Must be a United States citizen
- Must be a full-time student with a major in Geosciences
- Must have and maintain a minimum 3.0 out of 4.0 cumulative grade point average or better.
- Preference will be given to students with financial need.

## Robert Pace Memorial Scholarship

Eligible students will be:

- An anthropology major or specifically plan to be
- Have a serious interest in a professional career within anthropology
- Must have maintained a grade point average of 3.0 or better for the semester or term preceding the award,

## Department Recognition Awards

### Outstanding Graduating Seniors

Faculty choose 1 graduating senior from each major.

### Outstanding Research

### Outstanding Fieldwork

### Outstanding Service

### Outstanding Graduate Teaching Assistant/Research Assistant - Masters Level

### Outstanding Graduate Teaching Assistant/Research Assistant - Doctoral Level

## Department Funds

Aquarium Project | Anthropology Program | Geography Department |  
Geography Research | Geology Program | Geology Research Fund |



# Give To Blue Challenge



Freshwater

## Support our Aquarium Fund

Your support will help with costs associated with supplies, animal care, educational programs, habitat upkeep, and student experiences.

Three fun challenges are coming up, allowing you to name a fish or frog or have us purchase a coral in your name.

You will receive an official certificate and your name will be displayed as a donor on our media displays.



Stay tuned for our animal profiles. You can see them on our [isu\\_reef\\_and\\_frogs](#) Instagram page.

## Meet our Tanks and Inhabitants

EES is proud to be the home of 4 aquarium/terrariums.

- 300 Gallon Saltwater Reef and Marine
- 300 Gallon Freshwater Riverscape
- 75 Gallon Rainforest featuring Poison Dart Frogs
- 24 Gallon Rainforest with dart frog juveniles.

EES Students are employed throughout the year to care for and maintain the tanks.

ISU Admissions Office uses our tanks as a key experience for all campus tours.

**EES**

**GIVE TO BLUE**  
*Challenges*  
 Coming soon!

#GIVETOBLUE23  
FISH & FROG CHALLENGE

Tier 1 Challenge	Tier 2 Challenge	Tier 3 Challenge
<ul style="list-style-type: none"> <li>• Entry into our raffles</li> <li>• Department T-shirt</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple entries into our raffles.</li> <li>• Department T-shirt</li> <li>• Department Swag.</li> </ul>	<ul style="list-style-type: none"> <li>• Name a fish or frog or have us purchase a coral in your name.</li> <li>• Department T-shirt</li> <li>• Department Swag.</li> </ul>
\$10.00 - \$20.00	\$25.00 - \$95.00	\$100.00

## 3 Challenges

**\$10.00 - \$20.00 donation** - Your name goes in a raffle and for every \$100 we receive we will pick someone to name an animal of their choice.

**\$25.00 - \$95.00 donation** - Multiple entries into our raffle plus a department t-shirt and swag.

**\$100 donation** - Name a fish or frog for yourself or for a loved one or have us purchase a coral in your name. Plus a department t-shirt and swag.



Saltwater Reef Feeding Time

Give to Blue link

<https://givetoblue.indstate.edu/amb/EESchallenge>

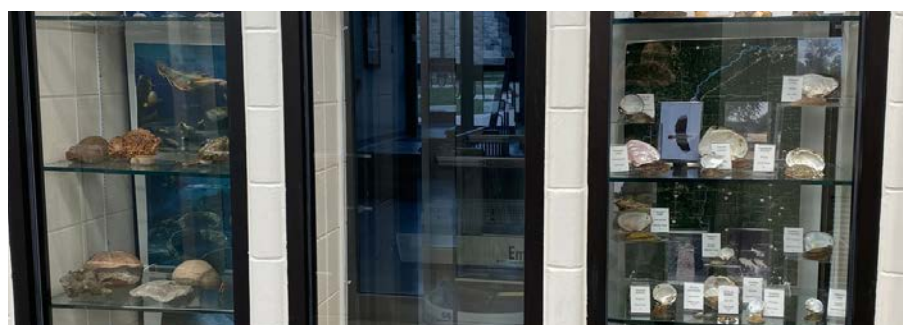
Aquarium Project



## SCIENCE BLDG. RENOVATIONS

### MULTI-YEAR PROJECT

The Science Building had a facelift! Yearly renovations have been completed to the building making corridors bright and inviting and the old tile flooring was replaced. The modern hallway design is enhanced with large LED monitors, kiosks designed to display announcements, and spaces for research posters. Storage rooms and a few offices were removed to create open study lounges and charging areas.



## UPDATED DEPARTMENT DISPLAYS

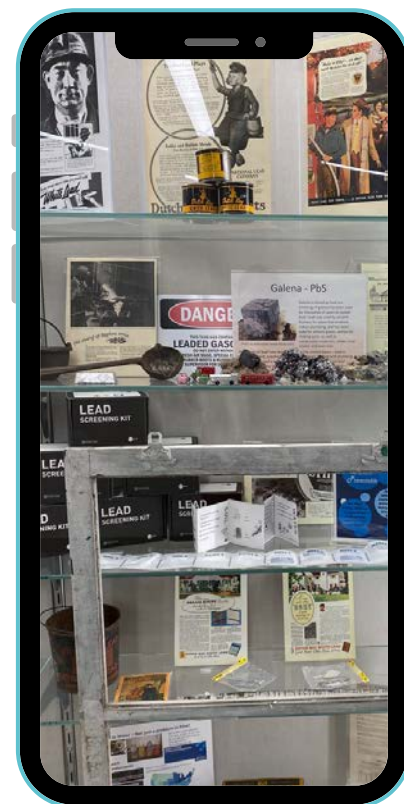
One of our new displays features Dr. Latimer's lead (Pb) screening project. We have tins of paint, old toys, construction materials, old advertisements and more.

We offer free lead screening kits for residential homes that allow anyone to test for lead in soil, water, paint, and dust. The kit includes illustrated instructions for sample collection. We analyze the samples and email the results the individual. To request a kit contact Dr. Latimer or send us an email at [ISU-EES@mail.indstate.edu](mailto:ISU-EES@mail.indstate.edu).



The south entrance has a new design featuring an open ramp, lighter brickwork, and new windows.

We have updated the technology in the EES conference room to a 80 inch tv monitor and wireless conference system. We hope to update a classroom with the same technology at the end of the spring semester.





# Student Spotlight



Zach Kemp and his sister Jordan - Collecting Jordan's soil samples



## KILAUEA ERUPTION

Zach was 1 mile away and 800 feet above the site of the eruption when he took most of his photos.

"If you were real quiet you could hear the sound of the fountain from a mile away. Best experience ever!"

## ZACHARY KEMP - GEOLOGY DEC '23

Zach is a Senior Geology student participating in our 4+1 program. He will finish his bachelors degree in December '23 and his MS in '24. His MS research will focus on "Lead Concentrations and Bioavailability in Terre Haute Soils.



Zach and an instructor at Field Camp in Hawaii.

## FUTURE PLANS

After completing his MS degree Zach wants to work with the National Park Service.

Fun Fact: He has traveled to all 50 states.



Photo by Zachary Kemp



Photo by Zachary Kemp

## ZACH'S FIELD CAMP EXPERIENCE

Zach recently got back from Geology Field Camp where he spent his winter break on the Island of Hawaii with the South Dakota School of Mines and Technology. While there, some of the planned projects were revised due to Kīlauea's eruption. The students stayed at an old military base about 2 miles from the edge of Kīlauea and a short hike to one of the volcano observatory stations.



Photo by Zachary Kemp

## WHAT'S ZACH'S FAVORITE EXPERIENCE SO FAR WITH THE EES DEPARTMENT?

Zach's favorite thing as an undergraduate student at ISU, is the hands on learning experience he's been exposed to while "getting to work in Dr. Latimer's Biogeochemistry Lab and helping with other's research." In the lab, he has worked with Kathy Mudica (PhD) on her otter liver project, Katya Drake's (MS) lead soil research, and he worked with his sister, Jordan, (MS) on her Mercury in Terre Haute Soils research project.

*My Favorite thing about camp was definitely the eruption. As soon as I saw it, I face-timed my parents and Jordan (Zach's sister - and EES Alumnus).*

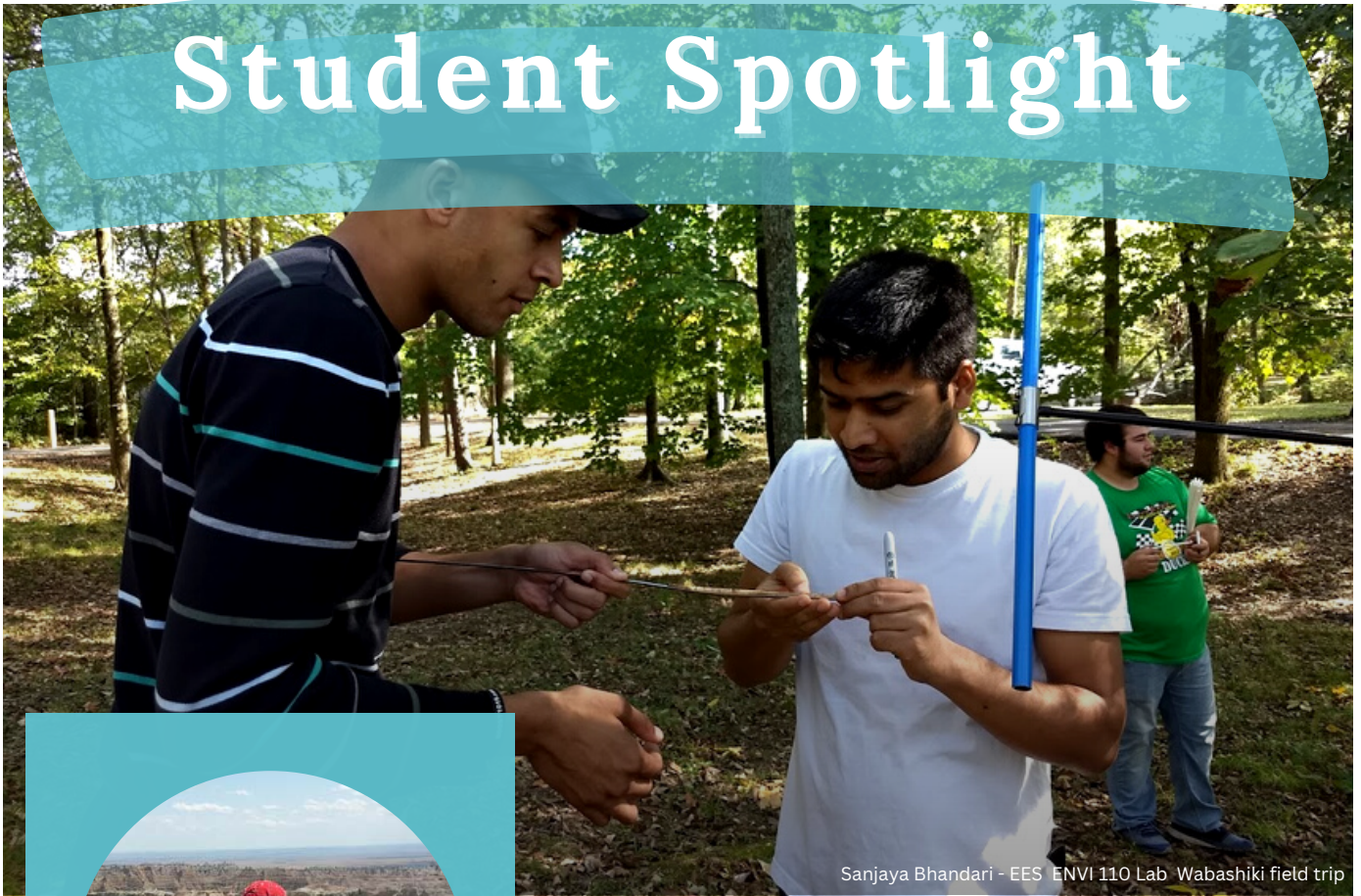
## STUDENT & ALUMNI SPOTLIGHTS

Interested in learning more about our students and the projects they are working on? Follow us on our social media platforms. A new student will be highlighted every week.

Catch up with old friends and friendly faces as we highlight alums through the years.



# Student Spotlight



Sanjaya Bhandari - EES ENVI 110 Lab Wabashiki field trip



## SANJAYA BHANDARI - PHD SUMMER '24

I'm Sanjaya Bhandari, a 3rd year PhD student from Nepal. I work with Dr. Speer focusing on Dendrochronology and plan to graduate by the summer of 2024. My research focuses on tree growth in the Himalayas and connection with broad-scale ocean-atmospheric phenomena using the analysis of reflected images from wood.

## FUTURE PLANS

After graduation, I would like to work as a dendrochronologist and climate change expert to generate knowledge about the history of temperature, drought, and precipitation variation across the globe over the last millennium, this research can help us understand climate patterns of the past and to develop models to predict future trends.







Tree coring



Tree ring and Blue Intensity Research

## NADEF FIELDWEEK

I have joined the North American Dendroecological Field Week in Wyoming three times assisting my advisor, Dr. Speer, who is a group leader and coordinator for NADEF. It's always interesting to pack up the lab and all of our gear, load it in a vehicle and drive across the country to Yellowstone National Park.

*NADEF provides an intensive learning experience in dendrochronology & is a great opportunity to see one of the most beautiful and pristine national parks in the country.*



Yellowstone National Park Dendro Field Week

## WHAT'S SANJAYA'S FAVORITE EXPERIENCE SO FAR?

Structural Geology field trip! It's an intense structural geology field tour of the southwest United States with Professor Speer.

## STUDENT & ALUMNI SPOTLIGHTS

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## New Faculty Member Chad Yost



### DR. CHAD YOST

Hello, I'm Dr. Chad Yost and I'm thrilled to be a new EES faculty member. I received my B.S. in Biology from the University of Minnesota, my M.S. in Geography from St. Cloud State University, and my Ph.D. in Geosciences with a Global Change minor from the University of Arizona.



### RESEARCH

I am a multidisciplinary researcher interested in paleoecology, paleoclimatology, and micro-archaeobotany. My primary research specialty is the identification of plant microfossils called phytoliths, which are silica casts and in-fillings of plant cells. When plants die and decay, or are processed and cooked for subsistence, these phytolith microfossils are incorporated into soils and sediments, or are left on the surfaces of tools and cooking vessels. I have research projects in North and Central America, and in several eastern African counties. I currently teach many of the introductory geology and environmental science courses, as well as more specialized courses with topics on microfossils, climate variability, and climate change.





For more information about Dr. Badillo check out his website:  
<https://alexelvisbadillo.weebly.com/>



Areas of Specialization:  
Mesoamerican archaeology, settlement pattern survey, human-environment interactions, digital heritage, and the applications of geospatial and 3D technologies in archaeology.

## New Faculty Member Alex Badillo

### DR. ALEX BADILLO

Dr. Alex Elvis Badillo is an anthropological archaeologist (PhD, Indiana University, Anthropology, 2019). His research focuses on ancient settlement patterns, urban/rural land use dynamics, and processes of ancient urbanization and urbanism. Badillo specializes in the application of geospatial, 3D, and drone technologies in archaeological methods.

### RESEARCH

Over the past eight years, Badillo has been actively using and a photogrammetric technique called structure from motion (SfM) for 3D documentation of small and large-scale objects (i.e., artifacts, architecture, and sites/landscapes) in his research. His work with geospatial and 3D technologies have led Badillo to be involved in and/or lead various collaborative projects in other regions such as southern Peru, Southern Italy, and various states throughout the USA. Badillo has given workshops and has designed and currently teaches courses on the use of SfM in archaeology. Currently, Badillo directs the Geospatial and Virtual Archaeology Laboratory and Studio (GVALS) at ISU where he trains graduate/undergraduate students in geospatial and 3D technologies.



# Alumni Spotlight

## Jessica Murphy



**Hometown:** North Branch, Michigan

**Major and Degree(s):**

B.S. Geology 2006

M.S. Geology 2010

Ph.D. (ABD) Applied Earth Sciences, IUPUI (2016)

**Your favorite memory at ISU:**

I have so many! Top 3 would be going on a research cruise on the Bering Sea (Aleutian Islands, Alaska), waking up to frozen tent zippers while camping in Colorado on a spring break trip for Sed/Strat and the many times I presented research at regional and national conferences.

**Accomplishments you have achieved:**

2023 Terre Haute 12 Under 40; The 12 Under 40 Award was created through a partnership between the Tribune-Star and the Terre Haute Chamber of Commerce and aims to reward young professionals working in the community with recognition for their service. The idea behind the program is to recognize those making a difference in the community and maybe get others involved as a result. The 12 Under 40 seeks people who “go above and beyond their call to duty.”

**Where are you now:**

After coming to Terre Haute in 2002 to attend ISU, I stayed for my Master's – briefly moved to New Orleans to start a doctoral program at Tulane University and came back to begin a Doctoral Program at IUPUI. It was here, while studying urban lead in under served communities, that I began my work with community outreach and education. I almost immediately felt pulled into the non-profit world - a scary move, but one I am proud to have made.

I am employed at Catholic Charities Terre Haute as the Development Manager where I raise funds to allow our Agency to continue to serve the community and I have been an instructor for the Earth & Environmental Systems since 2016 and love teaching.



## Jessica Murphy

**Favorite thing you are doing now:**

Serving. Serving my community, serving my neighbors, serving those who feel they have no voice. It is an amazing feeling to know that you are providing someone with the tools they need to become stable and successful.

**Who was your faculty mentor and what project did you work on:**

The most influential mentor I had during my time at ISU was my MS advisor, Dr. Jen Latimer. To this day I consider her one of my mentors, both professionally and personally. My thesis encompassed paleoproductivity in the South Pacific but I also was on the ground level of Dr. Latimer beginning work on testing Terre Haute soils for lead. It is this work that ultimately led to my current career.

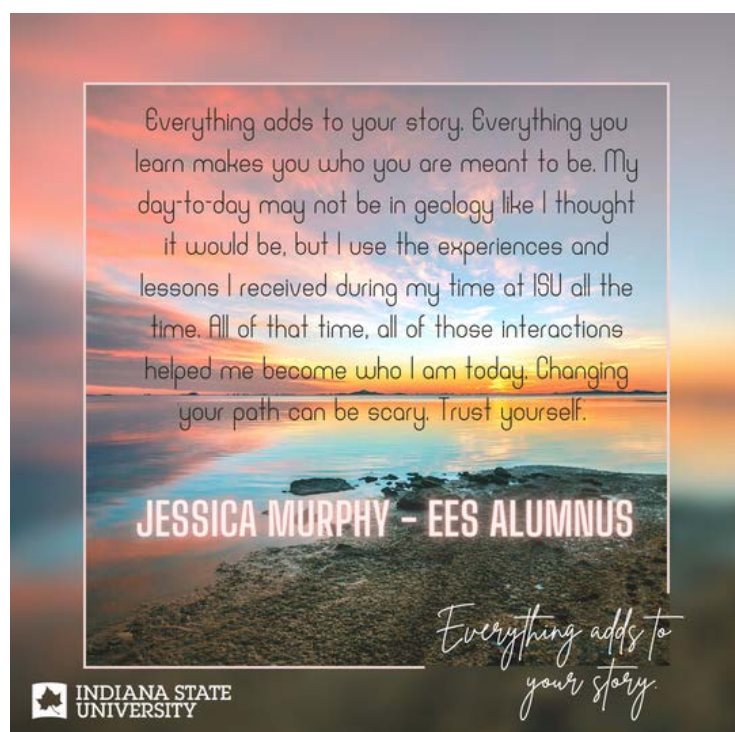
**How did ISU help with your success:**

My time at ISU was filled with hands-on, experientially learning – this educational approach was a critical part in preparing me for my professional career.

## Jessica Murphy Cont.

**What is the best piece of advice you would give to current students:**

Find what you're passionate about and follow it. It's ok if your path takes twists and turns, that's what makes it a journey. My Dad always said that if you truly love what you do, you'll never work a day in your life. I am privileged to have found that to be true.



Spotlights are sent to current EES students and will be featured in our newsletter.

Networking and connecting with alumni who have similar interest is a key tool for success! Advice and interaction, that this program offers, will monumentally help you prepare for seeking jobs and understanding what you need at ISU to succeed such as classes (electives) that you should take. Alumni love to hear from students and want to give advice! We strongly encourage you to take advantage of this program as it can be rewarding and beneficial in so many ways.

Interested in sharing a spotlight or becoming a Alumni Mentor?  
Send us an email at [ISU-EES@mail.indstate.edu](mailto:ISU-EES@mail.indstate.edu)



# Alumni Spotlight

## Heather Foxx



**Hometown:** Brazil, Indiana

**Major and Degree(s):**

B.S. Geology 2012

M.S. Geology 2014

Indiana University McKinney School of Law 2021



**Your favorite memory at ISU:**

Backcountry camping at Glacier National Park to collect soil samples and lake cores for a classmate's graduate research.

Helping to drive 150 environmental science students to the Wabashiki wetland for a field trip about soil science.

**Accomplishments you have achieved:**

Since graduating from ISU, I started working for the Indiana Department of Environmental Management and teaching earth science for Ivy Tech Community College. I am a Licensed Professional Geologist for the State of Indiana and have previously served as a board member for the Professional Geologists of Indiana. I graduated from the Indiana University McKinney School of Law in December 2020 and became an Indiana licensed attorney in May 2021.

**Where are you now:**

Currently, I work for the U.S. Army Corps of Engineers – Louisville District as an Assistant District Counsel focusing on environmental law.



# Heather Foxx

## Heather Foxx Cont.

### **Favorite thing you are doing now:**

Working on STEM project teams to develop solutions for flood risk management projects and continue environmental restoration at formerly used defense sites.

### **How did ISU help with your success:**

ISU provided me with multiple hands-on learning experiences including measuring bedrock angles around Arches National Park, coring a lake near Yellowstone National Park, and deploying an oceanographic instrument from a research vessel off the coast of the Pacific Ocean that I wouldn't have experienced at other schools.

### **Who was your faculty mentor and what project did you work on:**

My faculty mentor was Dr. Jennifer Latimer. We evaluated lead concentrations in Terre Haute, Indiana surface soils and compared the data to demographic variables.

### **What is the best piece of advice you would give to current students:**

Build connections with your fellow environmental classmates. Those classmates will likely be your future coworkers.



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# EES Social Media Platforms

FOLLOW US AND HELP US GO LIVE!



[indstate.edu/cas/ees](http://indstate.edu/cas/ees)



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Aquarium & Terrarium  
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[eesindstateu](#)  
Go Live Goal!



[EESatISU](#)

*Go where the  
Science leads you,  
even if the path is  
difficult and few  
have followed it  
before you.*

—  
Kathy Mudica,  
Indiana State University  
PHD Candidate

## #EESINDSTATE

Speaker Series!

Streamtable Videos!

Student Profiles & Networking!

Events and Community Activities!

Contact Information

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