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WHEATON COLLEGE
*For Christ & His Kingdom*

# CONTACT

The Alumni Newsletter of Wheaton College's Department of Earth and Environmental Science

Earth History and Stratigraphy students return with Doc Mo to southern IL.

## INSIDE THIS ISSUE:



## FROM THE DEPARTMENT CHAIR

ANDREW LUHMANN

Greetings from the Department of Earth and Environmental Science! As noted in last year's Contact, our Office Coordinator and Chair positions were reinstated this year! Laurel Rodd joined our team as Office Coordinator in August, and she has been such a wonderful colleague! Dr. Keil was Chair this past fall while I was on sabbatical, and I will be in this role for the next few years. Doc Mo is still teaching and creating museum exhibits, and we are grateful to have him nearby. We are also looking forward to welcoming Dr. Bolton Howes as he joins our department this August! I love our department and am excited about our future as we seek together with all of you to be faithful and obedient followers of Christ Jesus our Lord.

We are looking forward to our department's Student-Alumni Field Trip to Washington state right after the semester ends in May, and it will be so good to have some of you join us! Please let the Alumni Office know if you did not receive the email announcement about this trip that we sent in early February; hopefully we can include you in the next one. The *Richard D. House Geological Endowed Fund* is covering almost all of the costs for our students. The fund was established "to enhance geological education through experiential learning in the field" and provides scholarships to geology majors taking our field courses in the Black Hills. Since those classes are taught every other year, we have funds in the off years to support Student-Alumni Field Trips to areas of interest.

Perhaps you have already read this, but I want to draw your attention to the statement "Good News for All the Earth: The Korean Invitation to Respond to the Gospel" (https://lausanne.org/statement/good-news-for-all-the-earth) and consider how you might work with your churches, neighbors, and friends in new ways to be actively involved in creation care in your communities. This is a new Lausanne document that our very own Dr. Laura Meitzner Yoder (Director and John Stott Chair of Human Needs and Global Resources (HNGR) and Professor of Environmental Studies) co-wrote with an international drafting team. Dr. Yoder coordinated a very meaningful public reading of the statement on campus at the end of the last semester. Hopefully this statement is an encouragement as you continue the good work that you are already doing!

Please visit when you are in the area; you are always welcome!
Peace to you all.

# FROM STUDENT TO NATIONAL LEADER

## DAVID CURTISS '92

Steps Down from American Association of Petroleum Geologists Leadership After 13 Years.

By S. O. Moshier

As a Wheaton undergrad, Dave Curtiss (Geology '92) was the proverbial BMOC (Big Man on Campus). Known to all by the nickname Foos, Dave managed the Stupe when it was in the Memorial Student Center and totally student-run. In addition, he read the news for the campus radio station WETN, kept order as a Resident Advisor on Traber 6, worked the phones for the college switchboard and dispatch, and advanced from part-time Public Safety Officer during his senior year to full-time the year after he graduated.

Despite his broad visibility, he chose a major that easily had the smallest group of students. Dave was one of an adventuresome cohort recruited by Professor Jeff Greenberg that essentially revived the geology major from extinction in the early 1990s.

After graduating from Wheaton College, Dave earned his master's degree in Earth Resources Management from the University of South Carolina. He worked at the Energy and Geoscience Institute (EGI) at the University of Utah between 1996 and 2007, serving as a staff scientist, program development manager, and eventually Senior Advisor to the Director. While at Utah, he also earned an MBA.

During his tenure at EGI/Utah, Dave took a year's leave to work in the Washington D.C. office of then-U.S. Rep. J. C. Watts, Jr. (R-Okla.) as the American Institute of Geoscience Congressional Fellow. In early 2006, Dave joined the staff of the American Association of Petroleum Geologists (AAPG) and returned to D.C., advancing from Deputy Director to Director of their Geoscience and Energy Office, representing the government affairs interests of the AAPG's constituents. Dave became the Executive Director of the AAPG and the AAPG Foundation in the Tulsa headquarters in August of 2011, leading the world's largest organization of geoscientists with more than 30,000 members in 116 nations!

### DISCOVERING GEOLOGY

Dave began college at Wheaton expecting to major in history or political science. However, his enchantment with hiking the dramatic Alpine landscapes of Austria as an MK led him to enroll in the Introductory Physical Geology course taught by Dr. Jeff Greenberg. This course was quickly followed by a Historical Geology course and resulted in his declaring a geology major. Dave's story from that era rings true for many of his peers: Jeff Greenberg was a tireless recruiter for the geology major - fueled by his passion for the science, sincere belief in its importance for human flourishing, and his genuine interest in the future of his students.

Dave recalls many hours staring down a petrographic microscope in one of the two geology labs in former Breyer Hall's 3rd floor. "Jeff had a suite of ten or so thin sections across the Philippines, and we were supposed to explain what we were seeing—we couldn't figure it out. I'm looking through the microscope. Andy Fulton '92 is sitting across from me, his head buried in a book, slowly turning pages. He looks up at me, pushes the book across, and there is a map of the Philippine Islands with a subduction zone marked with saw teeth pointed in opposite directions. That fit our observations! It was that project where geology 'clicked' for me. The fact that you could take ten slices of rock and interpret tectonic activity blew my mind."

Fellow geology majors Chad Smith '93 and Kyle Arney '93 have other more lighthearted memories of their friend Foos. They all spent a summer together taking the geology field mapping course in the Black Hills. Perhaps to keep up his Public Safety Officer chops, Dave would carry a huge Maglite flashlight around, randomly flashing the beam into people's eyes shouting, "Retina check!"

Kyle recalls a prank pulled on their buddy. Summer 1992 was notorious for an unusual infestation of field mice across the Field Station campus. Men's dormmates (who will remain nameless but are featured in accompanying photographs) put a dead mouse in a zip lock bag and placed it in Dave's sleeping bag. "Foos always slept with a box fan blowing in the window and his feet on the windowsill. I can't remember how late it was, but I do think we all knew about the mouse and were waiting for Mr. Curtiss to get in his sleeping bag. We were all excited for bedtime, probably too excited. When he finally got in his sleeping bag and 'assumed the position' with his feet up, he didn't even notice the mouse. I'm not sure what tipped him off, maybe we were asking him questions or just laughing under our breath, but eventually he discovered the mouse, threw the bag across the room, and calmly muttered something to the effect of 'I knew you guys were up to something!'"

### REFLECTIONS

"As it turns out," Dave recently told me, "… geology brought me full circle back to politics. I often tell students that even if they don't see themselves practicing geology as a scientist that their experiences and learning geology will serve them no matter where their career path takes them."

"When I was serving as a Congressional Geoscience Fellow for J. C. Watts, Jr., who chaired the House Republican Conference, I'd jokingly introduce myself as the 'Congressman's office geologist,' followed by 'I think every Congressional office should have one.' That last part wasn't a joke."

When asked how Wheaton College and the geology program prepared him for life after graduation, Dave reflected on how geology teaches one to "think about the world in a way

David Curtiss '92 in the oil patch.

Field geology in the Black Hills circa 1992. From left to right: Wendy Krahn Teskey '93, Judith Bergland Riley '92, David Caldwell '92, David Curtiss '92, Dr. Jerry Haddock, Kyle Arney '93, Megan Tewinkel '92, Nathan Peterson '93, Chad Smith '93 (on ground).

that few other disciplines do. We think in four dimensions [three spatial dimensions plus time], and our science is such that you frequently piece together disparate, sometimes conflicting, and 'messy' data to develop an interpretation." He added, "The Wheaton experience of faculty and students seeking to integrate academics in a spiritual and philosophical context follows a similar path. Doing excellent science and working to understand what our science teaches about our Creator and/or how we use our science to benefit His creation is not something you'll find in many other places."

Looking back on his decade plus service at AAPG, his personal highlights include intersociety collaborations created with sister geoscience and professional societies and new conferences focused on unconventional resources and carbon capture and storage. "As the energy industry evolves, as the role of professional societies change, as scientific publishing and peer review come under increasing pressure, how do groups like AAPG and the other American Geosciences Institute (AGI) member societies respond? This is a work in progress, but one that I've enjoyed working on with my society counterparts."

## LOOKING FORWARD

"In terms of what is next for me, when I describe my career, I say that I've positioned myself at the intersection of geoscience, policy, and business. I'm still excited by this and am passionate about enhancing global energy literacy and supporting the next generation geoscience workforce. Initially, I plan to do this through consulting and my own personal initiative. But I'm looking for people to work with because it's a big job. It's an important job."

Congratulations, Foos!

General Colin Powell with David Curtiss '92. Little known fact...Powell earned a BS in geology at City College of New York!

Friends of Perry. Standing from left to right: David Curtiss '92, Nathan Peterson '93, Wendy Krahn Teskey '93, Judith Bergland Riley '92, Kyle Arney '93, Chad Smith '93; seated: Dr. Jerry Haddock, Brett Swigle '93, Christopher Williams '93.

Chad Smith '93, Officer David Curtiss '92, and Kyle Arney '93 at Graduation May 1993.

## MANEIRO'S MUSINGS

### KATHRYN MANEIRO, ASSISTANT PROFESSOR OF GEOLOGY

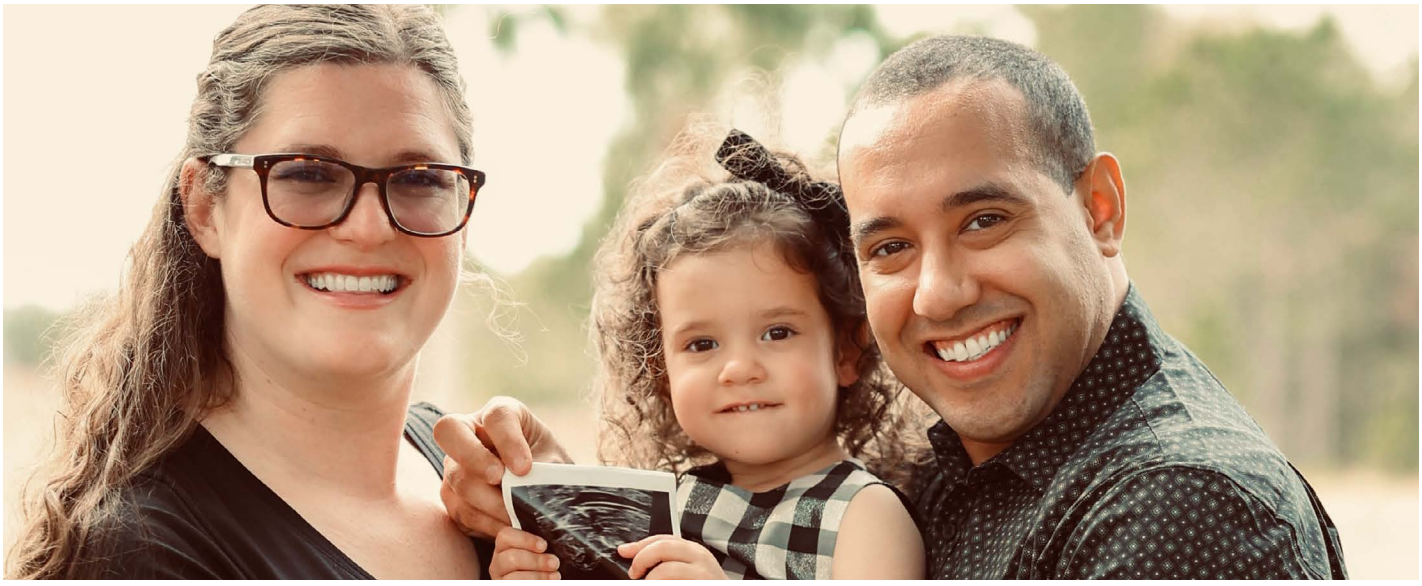
My seventh year at Wheaton is full and busy. As I continue to teach, work on a research proposal and publication, serve on committees, and more, my husband, Anthony, and I are also excited to announce that we are expecting a baby boy in June! We hope that unlike big sister, he waits to make his appearance until after the end of the semester. I will be on parental leave for summer and fall of 2025 before returning to the classroom in January 2026.

Last summer, I returned to the Black Hills and taught a second year for the Sustainability Summer program. We added some fun new field trips, including a trip to a sustainable farm that raises yaks and passion fruit in South Dakota (plus runs a micro-dairy, so of course we got some ice cream) and a lunch out eating ramen made largely with local ingredients at a restaurant run by a Food Network chef. My in-laws and my daughter, Bristol, came along again and enjoyed building relationships and participating in Field Station life. I think everyone is a little sad that we won't be headed out west this summer, though a new baby's arrival is a good reason to miss.

In July of last summer, I also participated in the second of two summer conferences held at Oxford for the Scholarship & Christianity in Oxford (SCIO)/Council for Christian Colleges & Universities (CCCU) Supporting Structures grant funded a few years ago. That grant is the one that sent me on my research leave semester to the University of South Carolina in Spring of 2023. While in Oxford, I had the chance to befriend STEM faculty members at other CCCU schools, to hear speakers talk about the integration of science and faith, and to spend time with President Ryken talking about key issues for STEM programs at Wheaton. We also took a field trip to Cambridge, where a highlight was seeing the original *On the Origin of Species* book Darwin presented to Adam Sedgewick, and Adam Sedgewick annotated and signed.

In the fall semester, I taught a couple of sections of Dynamic Earth and Environment lab, two weeks of Earth History for Doc Mo, a tutorial version of Mineral Science for a student studying abroad in spring semester, and three different Aequitas Sustainability courses. I continue to serve as the Theme Coordinator for Aequitas Sustainability, which is currently in its third year. Next year we will be at full strength with four enrolled cohorts and the first group of students will undertake their independent senior projects. In spring semester, we wrapped up Mineral Science in A quad. Students competed to try and grow the biggest and best formed crystals and struggled to visualize symmetry with our 3D printed crystal block models. I am also teaching both lecture sections of Dynamic Earth and Environment and two Aequitas courses, so my 150 students keep me busy!

In August, the Goldschmidt Conference (international geochemistry conference) took place here in Chicago. My research student, Ethan Paul ('24), presented a poster on his senior thesis work determining the metamorphic conditions that impacted the Jack Hills metasediments, which contain the world's oldest known zircons. I am also working to get a paper published for one of my graduate school lab mates that I rewrote while I was on research leave at the University of South Carolina. It contains some excellent garnet geochronology on some of Earth's oldest rocks from the Canadian Shield – though the garnet itself represents much younger metamorphism. Finally, in February I visited Boston College and met with collaborators in-person about a potential NSF funding application and the next direction for my research. If the work is funded, it would provide 3-5 Wheaton undergraduate students paid research experiences, travel opportunities, and the chance to undertake advanced undergraduate research alongside faculty and graduate students at Boston College and Virginia Tech.



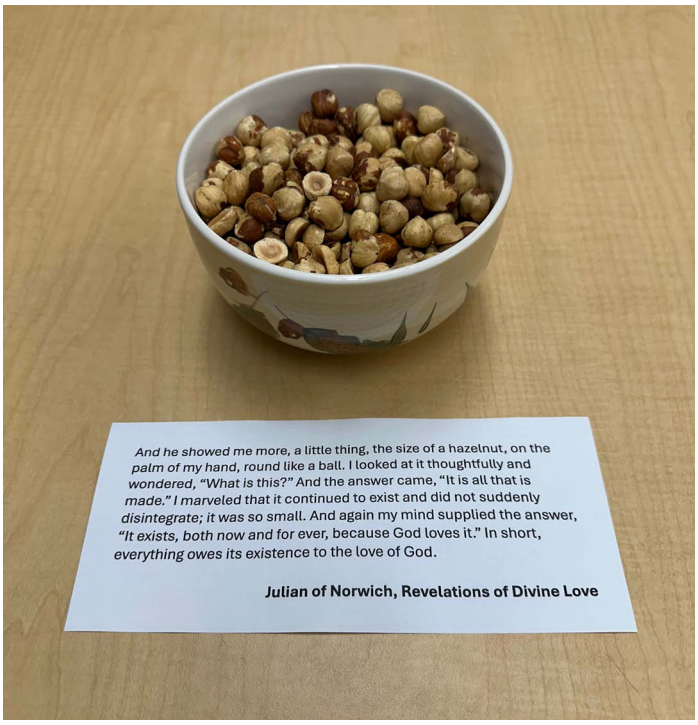
The Maneiro clan is expecting another addition in June 2025!

## LUHMANN'S LETTER

ANDREW LUHMANN,
ASSOCIATE PROFESSOR OF GEOLOGY

I had a wonderful sabbatical this past fall at the University of Calgary! My family and I were in Calgary for three months, and I primarily worked with Dr. Ben Tutolo and his research group. Ben leads an incredible team of postdoc researchers and graduate students, and it was so fun to develop relationships and work with them while I was there. I absolutely love the times to reconnect with alumni, people from my former spheres, or meet new individuals and discover that we already have connections! That happened with two graduate students while I was in Calgary: one from Ben's group had Dr. Benjamin Hess (GEO '19) as her TA while she was an undergraduate student at Yale University, and another was a former lab mate with PhD Candidate Sophia Becker (GEO '20) when the two of them were in the same research group working towards their MS degrees at the University of Nebraska-Lincoln together. It is a small world!

Meg Noble ('25 GEO major) and I have continued our research on hydrologic data from the Santa Fe River Sink-Rise flow system in north-central Florida. We are using the propagation of water level, electrical conductivity, and temperature changes along flow paths and throughout the aquifer to infer connectivity between monitoring locations, to determine hydrogeologic parameters, and to potentially suggest unknown conduits. We have also found that electrical conductivity indicates rock matrix inputs along the flow path and changes in the proportion of flow provided by unique sources in the aquifer. Finally, we also noted that temperature signals generally transmit more slowly than electrical conductivity signals. We are writing a manuscript with coauthors and plan to submit this to a journal in the near future.




God creates, sustains, and loves; Julian of Norwich's revelation provides deep meaning to our study and work.

One of Andrew's sabbatical adventures included a trip to see Athabasca Glacier in Jasper National Park in the Canadian Rockies.

One of my goals at the University of Calgary was to use the time to try to jumpstart a new research direction for my lab at Wheaton, where I will focus on alkaline lakes research. Salty lakes form in dry regions today where evaporation causes dilute water from fluid-rock interactions in the basin to become concentrated and potentially much more salty than seawater. For the salty lake to be alkaline (i.e., high pH), it requires alkalinity to be more than two times the dissolved calcium and magnesium. I am looking forward to working with Antonio Bucolo (ES '25) and Samuel Hernandez (GEO '27) through our Summer Research Program to start alkaline lakes fluid-rock interaction experiments at Wheaton! The experiments will have implications for the global carbon cycle, paleoclimate and paleohydrology, and perhaps the origin of life (environments that can lead to elevated phosphate). Alkaline lakes contain unique minerals, and they are some of the most biologically productive ecosystems on the planet.

I am discovering that honing my teaching effectiveness is a career-long process, and I am so grateful for the wisdom and ideas of fellow educators. During a conversation at the University of Calgary, Dr. Annie Quinney recommended I read *Grading for Equity: What It Is, Why It Matters, and How It Can Transform Schools and Classrooms,* 2nd ed. by Joe Feldman. It was thought-provoking, and I am piloting a change in the way I grade in my Environmental Geochemistry class this spring, where the whole grade is based on three exams with a scale of 0-4 (which correspond to letter grades that we always use at the end of the semester) instead of 0-100. (Why do we use 60% of the scale to indicate failure?) It is working really well, and the students are motivated to learn with their ungraded homework and labs. I would highly recommend Feldman's book to all you educators out there!

## KEIL'S CORNER

### CHRIS KEIL,
### PROFESSOR OF ENVIRONMENTAL SCIENCE

As I write this, I just got back from a Spring Break trip to Honduras as part of the Honduras Project (HP) 2025. This was the fourth time that I've been HP faculty advisor. I'm thankful to Kelly Wilson '16 for first inviting me to work with the students on HP.

Honduras Project is often characterized as a "Water Project." And while it is true that the center piece of the project is resourcing a gravity fed water system in rural Honduras, it is so much more. For me, it is a great example of interdependence within the Body of Christ. It's also a great example of "short term missions" done right.

For decades, Wheaton students have worked with engineering partners in Honduras to provide a gravity-fed water system for remote Honduran communities. Typically, a spring at a high elevation is protected with an enclosure and the water runs through PVC piping to a storage tank. Protecting the water source improves the quality of the water to which the community has access. At the tank, there often is a drip chlorination system to further improve the safety of the water. From the tank, water is distributed to homes throughout the community through more PVC. Houses are widely dispersed in these rural communities, and many kilometers of PVC piping are laid and buried.

HP starts in September with the selection of the team. This is all student spearheaded, with previous team members picking up the mantle of leadership. Throughout the fall semester, there are weekly team meetings and small group meetings. Students give up eight Saturdays to do workdays to raise funds for the project. They write support letters and continue to meet during spring semester both leading up to and after the trip. The dedication and sacrifice of HP team members always impresses me.

While the water system is the physical outcome of the project, much more happens. An inspiring aspect of HP is seeing collaboration within the Body of Christ beautifully displayed. Wheaton College students look at the community members and say, "We could never dig 35 kilometers of trench by hand," and to the Honduran engineering team, "We could never design the system and carry out the in-country logistics." The community members say to the engineering team and to the students, "We are farmers, digging is what we do. We could never raise that much money." The

Dr. Keil working with piocha (pick axe).

2025 HP Team on top of the water tank. Geology major Sam Hernandez '27 is front row on the right.

engineering team similarly reflects on the contributions of the students and community. Awe at what others do and humility about what they bring to the effort is shared in each of the groups that contributes to the team.

Relationship-building is a core purpose of the Spring Break trip. I recall a conversation with a Honduran community member in which he told me, "Anyone can send money, but those people think of us as a problem. You come and spend time with us, get to know us, and give us dignity." The time students help with digging the trenches certainly isn't an "efficient" approach to helping get the project done. I asked a work partner, "How much are we slowing you down?" He thought for a while and replied, "I don't know, but a lot." We all laughed. He continued, "But that's not what this week is about. We are excited to get to know you and for you to get to know us."

Another amazing aspect of HP is that in all the decades of the project, HP has never approached a community asking if they want a water system. The communities approach our engineering partners with petitions for a project. To apply, a community will organize a water board, commit to providing the labor needed, host the Wheaton College team, and hold community activities when the Wheaton students are there. Activities include kids' and women's ministries, biblical training for community leaders, and evangelistic meetings at night. There is a waiting list of communities that would love to have an HP project.

I see HP as a community development project with a water system as the vehicle for growth in many areas. The community and the Wheaton College team grow spiritually, socially, and relationally. The water system is often the starting point for further organization and development within the community. Participation in HP is often the starting point of new perspectives and a new vision for the students. HP is Wheaton College at its best.

## KATY'S KOMMENTARY

### KATY FOLTZ,
### LAB MANAGER | BLACK HILLS PROGRAM MANAGER

One of my favorite things about my job is the time I spend with students on field trips. I'm sure many of you recall a particular field trip that was life-altering while part of this department. Whether it is leading my introductory classes to state parks and wastewater treatment plants, joining the Earth History and Stratigraphy students on their trip to southern Illinois, or along for the ride on a Western Trip in the Black Hills, I love the camaraderie that these trips bring. The students in this department all seem to be music aficionados, deep thinkers, and the silliest story tellers I've ever met. Don't get me wrong – things can get ***stressful*** with logistical preparation nightmares, wrangling students away from steep cliffs and busy roads, and worst of all, instructors who won't stop for food and bathrooms when students are hangry. But once we hit the road, the stress seems to melt away as students joke around, discuss deep spiritual matters, sing for hours, or sleep through the rolling hills. So far this school year, I've been blessed to be part of 10 field trips (not including my own personal travels), and I'm looking forward to our upcoming Student-Alumni Trip to Washington State. This unique trip will be both a final trip for our graduating seniors and the start of many adventures for our underclass students. I greatly appreciate the time to build connections with the students and the mentorship that goes both ways. Geology and environmental science celebrate God's Creation, and I love the opportunity to visit incredible places with amazing people.

Students testing the physical properties of soils at Lincoln Marsh.

Another highlight from this year has been teaching the *Introduction to Soil Science* course again in the Fall of 2024. In teaching this material for a second time, I felt the course went more smoothly, and I wasn't always having to play catch-up. It also helps when you have an engaged class, and this group of students were a joy to teach. My class was privileged to have two of our alumni, Marc Borowski (GEO '22) and Megan Smoot (ES '24), join as guest lecturers to talk about soil testing in the field and case studies of remediation practices, respectively. Having two recent alumni sharing their experiences about actively working with soil was very valuable for the students, and I'm thankful for the time they spent with us. I like to integrate alumni participation in my classes so please let me know if you are interested in joining as a guest lecturer in a future class!

From left to right: Grethe Gill (ES '26), Gwendolyn Ramsey (English Writing and Aequitas Sustainability '26), Abby Wells (ES and Spanish '25), Eleanor Mounts (ES '27), Carson Frear (GEO '26), Ruth Rendall (ES '25), Abby Latka (ES '26), Jolene Smith (GEO '26), Jensyn Langguth (ES and BIO '25).

Laurel with husband Steve

### **LAUREL RODD** EES OFFICE COORDINATOR

My husband Steve and I recently moved to Wheaton from our most recent adventure in London. I was very pleased to be able to join the Earth and Environmental Science Department as their part-time office coordinator this fall. Though I have never lived in Wheaton, I have many family connections: my grandfather, Dr. Frank Green, was a Chemistry professor at Wheaton for many years, and my parents Jim and Nan Green '62, sister Shari Green Ginn '87, and niece Cristy Ginn '20 are all alumni. I also was part of Wheaton in France in Aix-en-Provence the summer of 1991. Having lived in 11 countries as an MK, missionary, and most recently in international business, it has been fun to meet many here in Wheaton and especially at the college with similar life experiences. I'm very fortunate to work with such a friendly and dedicated group of faculty and students!

## STUDENT ARTICLES

### **MEG NOBLE** GEO '25

Amidst the million other things I was confused about as a freshman, I could not for the life of me figure out what Earth Club was or how to get into it. I was pretty sure it was something I wanted to be involved in, but it was overwhelming to find my place in a department where everyone already seemed to know each other. Now as a senior having stumbled my way onto the cabinet, I can promise you that there is always room for one more. Here I am telling everyone the same thing that confused me – if you are part of the EES department, you are a part of Earth Club (whether you like it or not)! The cabinet exists to plan ways for Geology and Environmental Science students to get to know each other outside of our classes because somehow we're not sick of each other yet.

The cabinet and I have worked hard the past couple of years to support our department community. Any cabinet member can attest to how excited we get when we see a new person at an event! Over the past two years, we've planned 4 movie nights, a canoe trip (soon to be 2), a collaboration hike with Olivet Nazarene, a couple of very successful fundraisers, and about 30 Donut Times. I may be biased, but we've created some pretty iconic-themed snacks for our movie nights, including tornado/mummy dogs, chocolate cowboy hats, and a giant rice crispy tornado (though we considered making a bust of Glen Powell). We are so grateful for the alumni who have shared their experiences in the workforce at our Donut Time seminars. Notably, we recently also had the privilege of hearing Dr. Jim Clark's life story over Zoom!

But by far my favorite perk of planning department events has been the friendships I have formed and deepened. Our cabinet members - Carson Frear, Aidan Kingsbury, Ruthie Rendall, and Annika Watson - have had so much fun getting to know each other and learning how to serve the department best. We are honored to be following in the footsteps of many talented alumni who have pushed the department community forward through Geo/Earth Club.

Earth Club seeks to promote community within the Earth and Environmental Science Department, hosting events such as this apartment gathering to make snacks for Earth Club movie night!

## GRADUATING SENIORS 2024-2025

### ENVIRONMENTAL SCIENCE

- Antonio Bucolo
- Chamyra Edwards
- Luke Feddeler
- Aidan Kingsbury
- Jensyn Langguth
- Muna Mwangi
- Madison Nelson
- Ruth Rendall
- Ethan Roth
- Annika Watson
- Abby Wells
- Myra Zedwick

### GEOLOGY

- Samuel Dunbar
- Meg Noble
- Kathryn Skinner

**OLIVIA CREIGHTON**
ES AND COMPUTER SCIENCE '26

This summer, I had the pleasure of working as a Ranger, or backpacking guide, at Philmont Scout Ranch. Philmont is a high adventure base owned and operated by Scouting America that began in 1938; since then, it has expanded to cover 140,177 acres of wilderness in the Sangre de Cristo extension of the Rocky Mountains in northern New Mexico. Through 7-, 9-, and 12-day treks, scouts from across the world get to immerse themselves in pine forests and canyons while learning about the rich history of the Native Americans, miners, loggers, cowboys, and geologists (such as Doc Mo) who have occupied the area.

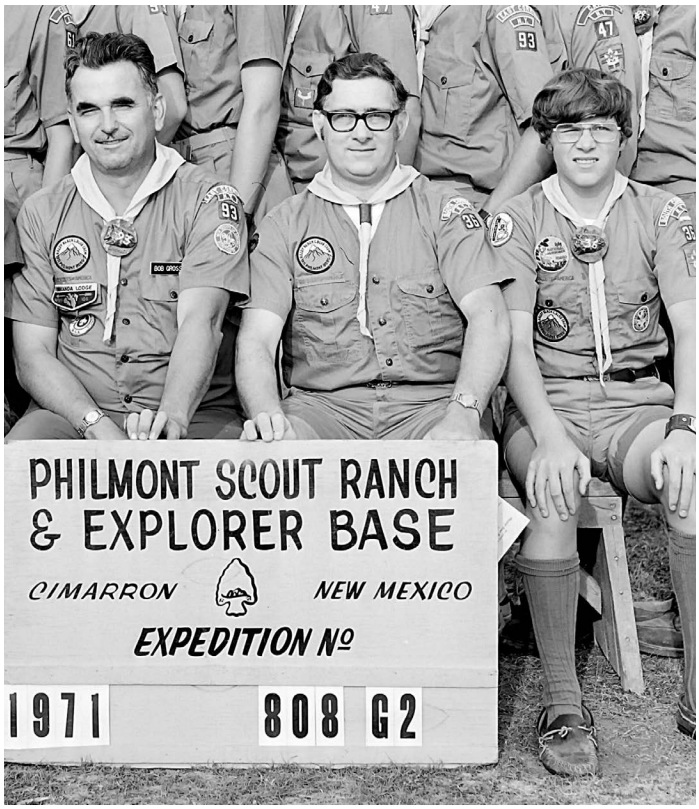
I had the opportunity to experience Philmont as a camper in 2021, where I got to backpack with my brother, my dad, and 6 other members of my scout troop. Our trek was unfortunately marked by persistent rain, but I fell in love with the vast wilderness and the community of the ranch. After putting off my career as a Ranger to attend a class at the Field Station two summers ago, I finally committed to my dream of going back and working at Philmont this past summer (2024).

Through my position, I got to share my love of the outdoors with 7 crews of scouts and their leaders, including a group of scouts from my home troop in Connecticut, who I've gotten to lead and grow with since 2019. I also got to work alongside a scout who was part of my crew in 2021 and a fellow Wheaton student, as well as other former residents of Wheaton or my hometown.

A crucial part of being a Ranger is the department's commitment to serving other roles on the ranch, fulfilling our motto of "Scramble, Be Flexible." When we weren't working with crews, we could be found on "work days." While these often involved cleaning the bathrooms, washing the dishes, or extensive weeding, I was fortunate to participate in the GIS department's "Fencus," in which we bushwhacked (or 'shwhacked) along existing fence lines that had been damaged in a recent forest fire. This task allowed me to better understand the intricacies of the ranch and grow in my GIS fieldwork experience.

While Scouting America is unaffiliated with Christianity, I was blessed by the work of Philmont's rotating chaplains. As Protestant, Catholic, LDS, or Jewish religious leaders, these volunteers hosted nightly worship services and provided emotional and social support to any crews for which it was needed. Apart from this support, my experience at Philmont, and other time I've spent in the wilderness, has given me a tangible understanding of God's love for His creation. The stars, forests, soil, and ecosystems are so vast, yet intricate, and we get to live among them!

One of my favorite parts of the experience has been the opportunity I've had since returning to bond with Doc Mo over our times on the ranch. As a scout in 1971, Doc Mo grew his love for geology in the canyons surrounding Baldy Mountain, where I would hike with my troop 50 years later!




Doc Mo (right) at Philmont, with his father Ronald Ned Moshier (center) and Earth Science teacher Mr. Robert Gross (left).

Olivia teaching Crew 703-7A from North Carolina how to read and follow a map.

## **MIIKA FORSYTH** ES AND ART ’26

This past summer (2024) I was delighted to work with the Forest Preserves of Cook County as an intern under their Conservation and Experiential Programming (CEP) Department. For nine weeks in the Chicago heat, eighteen of us interns worked alongside around half a dozen nature centers spread across the entire county. For my time as a Youth Outdoor Ambassador, I was stationed at the Hal Tyrrell Trailside Museum of Natural History located in River Forest, IL.

Under the leadership of Trailside Director Adam Kessel, each day as a Forest Preserve intern held something unique and exciting!

Every morning after I propped my bike against one of the young white oaks behind our toolshed, there were a plethora of tasks I knew I’d be completing that day. My typical endeavors included daily animal care for our residential raptors, reptiles, and amphibians, community outreach and programming assistance, as well as working alongside our naturalists and conservation partners in ongoing restoration projects. One of the most rewarding aspects of my time with the Forest Preserve was getting to connect people to place. This looked like facilitating interactions between community members and the natural ecosystem around them through connection to their physical surroundings. Since many of the programs I worked with were geared towards families and children, there were a plethora of opportunities to teach children and adults alike more about their local ecosystems. I loved the moments I was able to witness and facilitate where fear of nature was overcome by curiosity, wonder, and awe.

In addition to working with others, I was also able to work alongside a team of naturalists in existent restoration within the preserve. Each week we would work to remove aggressive plant species that inhibited woodland biodiversity. At the same time, we would collect and disperse native plant species to assist the overall ecosystem quality index. Within the grounds, there was also a pollinator prairie project and native plant garden that had been developing over the past two years. For the duration of the summer, my team and I continued to tend to both gardens, learning how to best care for micro-ecosystems holistically.

Although my hands were full of seeds, critters, and hedge trimmers for most of the day, my supervisor Adam was also extremely receptive to my creativity, allowing me to pursue a self-led mural that culminated in a new sign for the entrance to the museum. Bringing together the languages represented by Forest Preserve staff, visitors, and the broader community, I got to complete my time as an intern reflecting on my community and their commitment to preserving, protecting, and appreciating the created world around them!

Miika interacting with her community and ecosystem!

Miika’s new mural welcomes visitors.

ALUMNI UPDATES

## THE MADSENS

Hello from Andrew and Lauren Madsen '20 & '22! Since graduating from Wheaton, we have gotten married and moved to the beautiful state of Maine. The only things in place when we moved were that Lauren would be doing a Master's in Geology at the University of Maine and that we could crash in a dorm room at the University of Maine at Presque Isle (known affectionately as UMPI, pronounced "UM-pee") for five weeks while she did her fieldwork. God graciously provided for each one of the remaining unknowns within just a few weeks of our move, with an awesome job in land surveying for Andrew, a solid church with tight-knit community, and a good apartment to live in, followed by a cute little house a year later.

Lauren finished up her Master's in August of 2024, which focused on the formation of manganese deposits in northern Maine. Lauren has continued on to a PhD at UMaine, where she dates minerals in critical mineral deposits. Now that they are married, Andrew no longer feels the need to remind her that the only thing she should be dating is him. She dates the rocks by shooting them with lasers, just like Star Wars, except the rocks are not quite as big as Alderaan. She is also taking advantage of every opportunity to grow as a teacher: teaching introductory earth science labs, joining the "Graduate Teaching Academy" in the fall semester to develop her teaching skills, and serving as a personal assistant to a low vision student in lab.

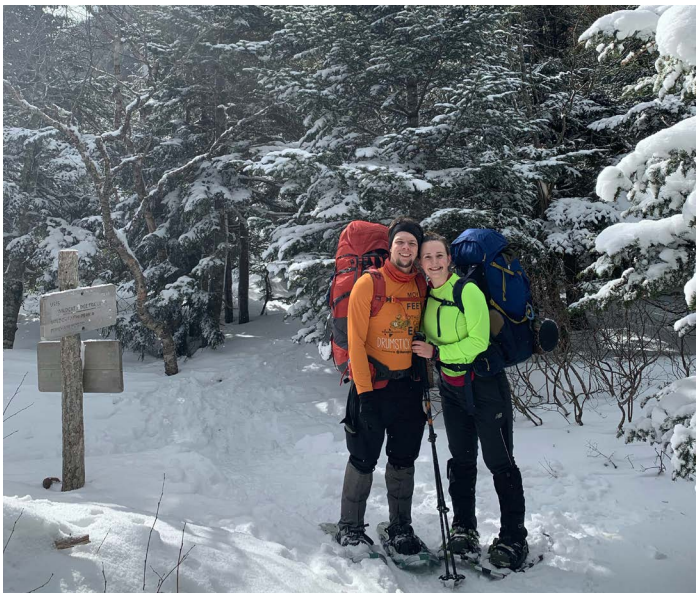
Andrew is still loving his surveying gig. He is over halfway done with his surveying coursework at UMaine and hopes to attain licensure in the next few years. He has enjoyed working many projects start to finish, doing most components of the office work and fieldwork, both of which he finds interesting. This year, he has particularly enjoyed spending several nights camping on the job; getting to canoe, snowmobile, and drive the ATV; and working on a few of Maine's beautiful islands. Unfortunately, he still does not have any cool moose or bear survival stories (not from work, anyway…). The most danger he has been in was when he almost fell right down a sewer vault because someone left the cover off.

Over the past several months I (Andrew) have been trying to meditate on God's grace. This update paints a rosy picture of our lives over the past year, partly because we are thankful not to have experienced any major tragedies, and we have been blessed with great experiences and relationships, but also largely because our many moments of failure, of depraved and selfish choices, and of emotional dysfunction don't make for good update letter material. If you're anything like me, it's easy to beat yourself up in these moments because we feel like we should be self-sufficient enough to be the man or woman that we know we ought to be. I was recently convicted by something I read in a devotional on anger: "Self-anger comes when you pursue a 'righteousness of your own' that is built on standards of your own. When you succeed, you swell with pride and self-righteousness… When you fail, you attack yourself in anger or sink into depression." This sums up my predicament to a tee. But the good news is that Jesus offers us an alternative to the emotional rollercoaster of trying to live life in your own strength. He forgives us each and every time we screw up and offers us strength to grow, usually just a little bit at a time. We are right to feel inadequate when we fall short. But that's the point of grace—it's God's many blessings to us in spite of what we deserve. Our prayer is that each of you would experience God's grace.

Blessings,

The Madsens


Lauren Madsen (GEO '22) graduated with her Master's in Geology in Aug 2024.



The Madsens are loving their time in Maine, with fun outdoor opportunities like this trip backpacking in the White Mountains, NH.

## **MICHAEL SAWYER** ES '16

10 years!! Time is ludicrous. Every moment I think I'm properly oriented and stable, time trips me up. Nearing my 10-year mark since graduating with my Environmental Science degree, Dr. Chris Keil requested that I write an update describing my journey pursuing this degree and what my life since then has looked like. Please join me in jet-skiing through my last 10 years.

As a freshman deciding on what major to commit to, I remember stridently "declaring my undeclaration." Eagerly devouring courses on philosophy, theology, and biculturalism, I was a liberal arts student through and through. I ended up committing to ES because I thought (and still think) that humanity has profoundly forgotten our first role: to serve (abad) and to protect (shamar) Creation (Gen. 2:15). I also wanted to be a Christian on the front lines of being with those impacted by climate change. Barely passing General Chemistry (C-), I chuckle remembering how much I struggled with the science part of ES. My failings at science were counteracted by joys of embodied practice. I'd whole-heartedly recommend the Black Hills Field Station to any student in the field of science.

I recall that I wanted my ES major to resound with compassion. While acknowledging there are many programs to fulfill this aspiration, I chose Human Needs Global Resources (HNGR). This program changed the trajectory of my life. Spending 6 months in rural Ghana, my eyes and heart were opened to the compassionate Christ and the importance of maintaining global perspective in all parts of life. I also learned about the hazardous implications of following the Incarnation. While we're all scrambling up the ladder of upward mobility, it seems that Christ is characterized by downward mobility – moving towards simplicity, solidarity, and compassion. C.S. Lewis once wrote, "Holy wisdom is not thin and clear like water, but thick and dark like blood." Through HNGR, my imagination was baptized in the mysterious blood of the Incarnation. Since then, I seek to commit my life to downward mobility and embodied solidarity.

After I graduated, I felt like a ship that was escorted out of port into the wild ocean while having a broken compass. This was followed by years of howling wilderness. I decided to spend a year volunteering as a groundskeeper at Honey Rock, which was full of hard yet fulfilling work. When this concluded, I spent several months as a barista before committing to a Master's degree back at Wheaton through the Humanitarian & Disaster Leadership program. This program brought professional clarity to my spirited yet ambiguous passion. This clarity led to a career with the federal government, and THAT is another story. Feel free to reach out to me individually to learn more if you're interested. 472 words is a sneeze of a summary, but perhaps some might find encouragement in my journey.

Michael with his niece.

## **DANIEL WALLAM** '79 RETURNS TO WHEATON IN THE BLACK HILLS

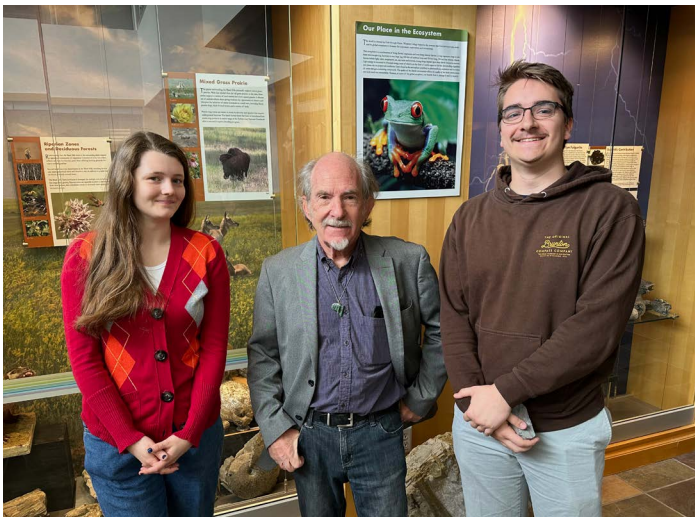
This past summer at the Field Station we were pleased to welcome alumni Daniel Wallam '79 to join us for a week. After his time at Wheaton, Daniel completed his master's research on Cretaceous equivalent siliciclastics in the Northern Rockies at the University of Wyoming. Alongside Dr. Steve Moshier, he was instrumental in guiding the students measuring a section of the Lakota Formation on a ridge north of Rapid City. He gave a student lecture presenting his thesis project in the context of its associated petroleum system. Another evening, he led a mini workshop on how to bring clarity to decision-making using his professional experience in exploration and production geology and decision science over his 39 years working for Chevron.

We always welcome our alumni to visit the Field Station and bring their unique expertise and life experiences to share with our students!

Daniel Wallam '79 lectures to geology majors at Wheaton College Field Station, Summer 2024.

Environmental Sustainability and Nature, Environment, and Society students with Dr. Maneiro and Pastor Jon Old Horse at a fen in the Black Hills.

Ruth Rendall and Meg Noble received this year's John Muir Award for Outstanding Environmental Science Graduate and Gerald Haddock Award for Outstanding Geology Graduate, respectively.




Dr. Greenberg with Jillian Gibson (GEO '27) and Samuel Dunbar (GEO '25). Dr. Greenberg interacted with students, worked on our rock and mineral collections, and gave a Donut Time talk about the impact of stormwater on the Indian River Lagoon in Florida during his visit in April.

Very happy Environmental Geochemistry students!

Meg Noble (GEO '25) interviewing Prof Katy about her life journey at a fireside Donut Time chat.

Cynthia Palomares (Jahns Distinguished Lecturer) gave a talk this past fall about climate change and its impact on infrastructure.

## PUBLICATIONS

*Wheaton people in bold*

Chakraborty, M. I., Sharifi, A., Benzoni, F., Tissot, F. L. H., Pourmand, A., Taviani, M., **Howes, B.**, Swart, P. K., Lu, C., Rodrigue, M., & Purkis, S. J. (2025). Deep-water corals indicate the Red Sea survived the last glacial lowstand. *Proceedings of the National Academy of Sciences, 122*(8), e2415559122. https://doi.org/10.1073/pnas.2415559122.

Gochenour, J. A., Rinehart, A. J., **Luhmann, A. J.**, Grapenthin, R., & Bilek, S. L. (2024). Poroelastic response to karst conduit pressurization: A finite element modeling exercise toward the use of tiltmeters in karst aquifer monitoring applications. *Water Resources Research, 60*(7), e2022WR034293. https://doi.org/10.1029/2022WR034293

**Howes, B.**, Mehra, A., Geyman, E., Wilcots, J., Manzuk, R., Deutsch, C., & Maloof, A. (2024). The where, when, and how of ooid formation: What ooids tell us about ancient seawater chemistry. *Earth and Planetary Science Letters, 637*, 118697. https://doi.org/10.1016/j.epsl.2024.118697.

Purkis, S. J., Ward, S. N., **Howes, B. J.**, Longenecker, J. M., Chakraborty, M. I., Kalman, A., Clement, A. C., Sharifi, A., Benzoni, F., Clarke, C., & Rodrigue, M. (2025). A 1600-year record of extreme rainfall in northern Arabia. *Science Advances, 11*(8), eadq3173. https://www.science.org/doi/10.1126/sciadv.adq3173.

Rinehart, A. J., **Luhmann, A. J.**, & Tutolo, B. M. (2025). The geochemistry of carbon capture and storage with implications for hydromechanical feedbacks and geophysical monitoring. In *Geophysics and the Energy Transition* (pp. 235-274). Ed. by M. Wilson, T. Davis, and M. Landrø. Elsevier.

### ABSTRACTS

Covington, M., Shobe, C., **Luhmann, A. J.**, Abolins, M., **Noble, M.**, Oleson, E., Gao, Y., & Ye, M. (2024). Exploring the controls of karstification by analyzing karst surface drainage across the United States. *Geological Society of America Abstracts with Programs, 56*(5), Paper No. 134-8. doi: 10.1130/abs/2024AM-405803.

**Paul, E., Maneiro, K.A.**, and Baxter, E.F., 2024, Pressure-temperature constraints for ca. 2.6 Ga metamorphism in the Narryer Terrane, near the Jack Hills Metasedimentary Belt, Western Australia, Goldschmidt Conference, Chicago, IL, USA.

Rinehart, A., Simmons, J., Heath, J., **Luhmann, A. J.**, Zu, Z., Dewers, T. A., & Wang, S. (2024). Quantifying microtextural controls on changes in absolute permeability during fluid-rock interactions using Lattice Boltzmann simulations of XRCT-measured sandstone pore networks. *Geological Society of America Abstracts with Programs, 56*(5), Paper No. 9-13. doi: 10.1130/abs/2024AM-405243.

### RESEARCH GRANT

DOE. Four Corners Carbon Storage Hub: CarbonSAFE Phase III Project. 10/1/2024-9/30/2027: subaward to **A.J. Luhmann**: $64,642 + $51,338 in cost share.


Olivia Creighton (ES and Computer Science '26) and Muna Mwangi (ES '25) share about their time in Thailand while studying at the International Sustainable Development Studies Institute.


Annika Watson (ES and Computer Science '26) sharing about her research with Dr. Keil involving nutrient uptake in bok choy.

# GIVING TO THE DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCE

*Anyone wishing to give to the ongoing work of the Department is invited to consider donating to any of the listed funds. Please clearly indicate the fund or funds for which your gift is designated. Many employers match gifts. We thank you for your consideration.*

## FUNDS FOR FACILITY SUPPORT

**1. Leedy Lodge Renovation Fund**
Funds are requested to refinish the flooring and add knotty pine paneling to restore the Lodge at the Wheaton College Field Station to its rustic beauty and to upgrade bathrooms and laundry spaces.

**2. Department Equipment and Lab Renovation Funds**
Funds used to purchase, update, and maintain research equipment in the department.

*2024-2025 highlights: Provided funding for two new exhibits in our Geology Museum.*

## SCHOLARSHIPS TOWARD WHEATON TUITION

**3. Geology Scholarship**
An endowed fund providing financial aid for geology majors.

*2024-2025 highlights: Provided $11,000 in scholarships to nine students.*

## SCHOLARSHIPS FOR WHEATON IN THE BLACK HILLS AND/OR FIELD STUDIES

**4. David S. Bruce Black Hills Memorial Scholarship**
A scholarship providing financial aid for students enrolled in the Wheaton College Field Station.

*2024-2025 highlights: Provided $7,240 in scholarships to two students in Summer 2024.*

**5. Boardman Black Hills Scholarship**
An endowed fund providing scholarships for geology majors attending field camp at the Wheaton College Field Station.

*2024-2025 highlights: Provided $15,000 in scholarships to three students in Summer 2024.*

**6. Richard D. House Geological Endowed Fund**
An endowed fund providing financial aid for geology majors to take classes at the Wheaton College Field Station and funds for geology field trips.

*2024-2025 highlights: Provided $20,000 in scholarships to four students in Summer 2024.*

## SUPPORT FOR STUDENT RESEARCH, PROFESSIONAL DEVELOPMENT, AND ALUMNI ENGAGEMENT

**7. Jeffrey Greenberg and James Clark Endowed Research Fund**
An endowed fund promoting faculty-student research for undergraduate geology or environmental science majors.

*2024-2025 highlights: Paid conference expenses for one student to present research at the 2024 Goldschmidt Conference in Chicago and provided financial support for two students conducting research during the summer and academic year.*

**8. Moshier Endowment Fund**
An endowed fund providing funds to promote the visibility of the geology program on campus and support alumni engagement with students.

*Funds will be available for the first time in the 2025-2026 school year.*



***We thank all the recent donors to these funds, which provide tangible and substantial assistance and encouragement to our students.***

WHEATON COLLEGE
*For Christ & His Kingdom*

**DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCE**

501 College Avenue
Wheaton, IL 60187



Geology and Environmental Science students seeking to support creation in any way possible.

We relish the time we can gather and worship together as a department.

Students measuring impact craters of meteors in Earth History and Stratigraphy Lab.


Deep Sea Dawn Wright (GEO '83) featured in Scientific Discovery!