

# Congratulations!

## 2016 AIPG Student Scholarship Winners!

The AIPG Executive Committee is pleased to announce the awardees for the 2016 Student Scholarships. AIPG has awarded fourteen scholarships this year. The AIPG William J. Siok Graduate Scholarship went to **Philipp Tesch**, Texas A&M University. The undergraduate recipients are **Julie Driebergen**, Southern Illinois University; **Melissa Luna**, Central Connecticut State University; **Kristina Butler**, University of Alaska, Anchorage; **Sean Czarnecki**, Angelo State University, Texas; **Katelyn Brower**, Everett Community College, Washington; **Emilie Bowman**, University of Texas; **Anna Stanczyk**, University of Alaska, Anchorage; **Aaron Ashley**, University of West Georgia; **Nam Pham**, University of Tulsa, Oklahoma; **Wesley Weisberg**, Missouri State University; **Anna Schuh**, University of Arizona, sponsored by the AIPG Arizona Section; **Brett Flessner**, Michigan State University, sponsored by the AIPG Michigan Section, and **Casey Saup**, Ohio State University, sponsored by the AIPG Ohio Section. Part of the scholarship application is to submit an essay titled, 'Why I want to be a Geologist.' Below are the essays submitted by the scholarship winners.

*The scholarships are made possible by the support of the Foundation of the American Institute of Professional Geologists and the AIPG members' voluntary contributions.*

### Philipp Tesch, SA-6287

Ever since I was a child, I was fascinated with dinosaurs, rocks, planets, the universe, and digging holes. At age 7, I learned the Latin names of dinosaurs, my parents read astronomy books to me and I was busy getting my clothes dirty while digging through sand on the beach or the soil in my backyard. My interest in the natural world was broad and I decided to become an astronaut. The curiosity and fascination never ceased, but over the years it became clear that being an astronaut is not the regular 8-5 job that the 7 year old me imagined.



After graduating high school, I was at the point where I seriously started to outline where I wanted my career to go. Essentially, I looked up all university majors that were offered and asked myself the following three questions: 1. What are my interests? At this point languages and archeology in addition to natural sciences. 2. Where/what are my strengths? Natural sciences and languages. 3. What career path offers exciting job opportunities and could I see myself taking this path and still be happy with it in 30 years? This one clearly went to the natural sciences. Looking at the specific class descriptions and job examples, it became obvious very fast that geology was the way to go for me.

I was always fascinated by the idea of integrating and recombining multidisciplinary knowledge in a way no one did before, tackling issues from a new perspective to come up with a solution to scientific questions. Now, I am finally in a position to do exactly this. I am a fourth-year PhD student at Texas A&M University, working in the intersection of classic field-based carbonate sedimentology, well log interpretation and 3D seismic interpretation.

The term geologist is really not a specific job description in the light of our education. In my view, geologists are the Swiss army knife of science - with a background in mathematics, physics, chemistry, engineering, outdoor skills and a four-dimensional (3D space plus time) approach to deciphering the rock record. Geologists are the crime scene investigators of our planet, looking at subtle clues of past events, applying a multitude of analytical methods and an understanding of processes and their expression in the rock record to deduce what happened millions or billions of years ago.

With the interdisciplinary nature of geology comes the need and responsibility to communicate clearly, not only to peers, but also to experts from other sciences and non-scientists. My undergrad sed/strat professor really understood how to teach in a way that is exciting and informative, in a way that even complex concepts could be understood by a non-expert. And while this skill may sound trivial to some, its implications cannot be underestimated. It was this particular professor who inspired me to do an internship as a mudlogger in Texas (by the time I did my undergrad in Germany). Now I am working on my dissertation with focus on the effect of tectonics, climate and sea level variations on the evolution of carbonate clinoform systems throughout the Phanerozoic.

This just shows how clear communication and incredible teaching skills formed my dream of leaving Europe to pursue my dream of getting a PhD and work experience in the US. In the bigger picture, this skill can (and should) be applied to communicate science within the scientific community and to the general public. Geologists are in a position of huge societal, economic, environmental and geopolitical responsibility. If we don't communicate clearly, we are doing society a disservice.

I want to be a geologist because I want to keep exploring, learn new things, be on the cutting edge of science and technology, work with amazing data and communicate this fascination to other people. I want to inspire the next generation of geoscientists. And maybe (eventually) to fulfill my dream of being in space. Because, as it turns out, there was only one

single person to walk the moon who was not an airforce pilot. It was geologist Harrison Schmitt with Apollo 17 in 1972 who walked the moon and did what every geologist would have loved to do. He threw his rock hammer on the moon.

## Julie Driebergen, SA-7559

### Why I Want to be a Geologist: A Love Story

I saw him from across the room. I remember the excitement of our first dates in natural history museums and petrified forests. I thought about my shrine to him on my shelf, glittering to vibrant to cryptic nuggets of a world long before I was even born. He's much older than I am but I don't care; I longed to find out what's beyond his exterior. I stepped towards him, anticipation for the decision I was about to make. I outstretched my arms, about to embrace what would be my everything, my forever. I held him in my arms, my future. Then I handed the bookstore cashier my credit card and bought him, my first geology textbook.



I actually came to SIU seeking a degree in zoology with a geology minor, but when I took my first geology class (Earth Through Time), I fell in love. I don't know how it didn't occur to me how perfect of a match we were, geology and me. I spent alternative weekends between the Field Museum of Natural History in Chicago and the Brookfield Zoo. I would spend most of my time dragging my parents through the dinosaur exhibit, knowing how to pronounce the names of dinosaurs and other fossils that other non-nerdy little kids wouldn't be able to attempt (there's a special place in my heart for parasaurolophous and pachycephalosaurus). I can't help but wonder if that recrystallized apatite longed for my presence on weekends that I was at the zoo or that they would become such a huge part of me.

My parents saw the first Jurassic Park while I was in the womb, engraining the roar of a T-rex into my soul before I even saw the remains of what may have produced that sound. My parents say they had never seen such a well-behaved child when they would take me to museum exhibits (wanting every souvenir in the gift shops was another story). I became obsessed with dinosaurs after seeing the fossils and watching the Land Before Time. I watched Jurassic Park when I was quite young; my parents asked me how I felt about the lawyer meeting his end, making sure they hadn't ruined their child's psyche by showing a PG-13 movie to a four year old. I apparently just shrugged and said that the dinosaur had to eat. I collect(ed) rocks and dinosaur figurines everywhere I went (and currently go). I was always a science kid, watching Bill Nye and the Discovery Channel. I also went through a volcano stage as a little kid; I was probably too young to have seen Dante's Peak at the time but it was truly mesmerizing how the earth produced such powerful forces of nature. At some point my focus switched to extant animals. Geology becoming the one that got away. My dad always thought I would be an excellent paleontologist, but supported my dream of shoveling animal feces as a zookeeper. When I told him I was going to double major with geology, his reaction wasn't a surprised one

but rather an "it's about time" one. Don't get me wrong, I still adore animals, hence my double major.

In fact, my fascination with ancient creatures and my future life career of being a paleontologist is homage to the ancestors of the animals to which I would have been in servitude. Learning and figuring out from what an animal descended is fascinating, and the ones we awe over today wouldn't be awe-able had mutations had not occurred and they had not evolved. Evolution is fascinating. How geological processes preserved the carcasses of animals is fascinating. The fact that a super volcano exists in my country that could send the earth into a very cold climate and devastate a good chunk of the continent is fascinating. Based on my interests, it makes sense that geology is mon amour. But our love story didn't start until I was 19.

I knew paleontology was a possibility, there's no doubt I would have taken an opportunity to work with fossils in high school, but animals were my main endeavor. I thought the geology minor would satisfy my craving for rocks. I was wrong. It came naturally to me. It left me wanting more. It was the class I looked forward to the most. After a single class, I declared my double major. Geology won my heart; reunited for good. I wanted to know more about Earth's processes. I wanted to know what made up every rock I saw. Now I consider myself more of a geologist than a zoologist. I wear my flannel and rock hammer proudly. I decorated my jeep in Jurassic Park décor (despite all of the incorrectness of the movies, there's nothing like seeing what you love come to life on the big screen and on your car). There's no doubt I'm a geologist. There's no doubt I'll be one always.

However, I have an ulterior motive. I like to dress nice to class; I can look like a "girly-girl" at times. I've been told in my male dominated classes that I don't look like a geologist (like I would wear a dress while scaling a rock face to look at the varying grain sizes and depositional environments?). I want those boys to answer to me, as their boss, and my future PhD in geology. Women are a minority (although the population is growing, I'm lucky if there's even five of us in one of my classes). I'm going to break the stereotype, and use my love to make way for the future of the field. I want to be a geologist for all the girls in the past who were told they couldn't be one. One day I want an even split of female and male geologists.

I'm not plotting to try to skew the gender ratio curve, though. I've always wanted to do something with my life that made me happy. I was going to be happy interacting with animals for up to \$20,000 a year. My dream job has never been about the money. Sure geologists make more, but what I want to gain is more knowledge and contribute more knowledge about prehistoric life to the masses. I want to discover a creature no one has seen before. I want to nickname it "Julie" or maybe even after my cat, and have people gaze at it in wonder, never thinking about the person who discovered it but loving what I found. I want to casually listen in on the conversations people have about it, and smile knowing that I unearthed something that caused a connection between people sharing information. Maybe a little girl or boy will look at it and feel inspired to become a paleontologist herself or himself. Maybe Jurassic World 5 will consult me on the accuracy of its dinosaurs. Maybe I can convince them to just call it Mesozoic World since that would be more accurate. Maybe my fossil won't be famous and I'll spend my days content, dirty, and sweaty in a tent in a field helping an actually famous geologist discover something and having a giant pile of rocks to take home for my shrine (as

long as it was OK to take them, of course). Maybe I'll sit in a university office, grading papers and lecturing, and helping students find their true passions and explore their love for geology, like the professors at SIU have done for me. I can't and won't be selfish with my love.

The heart wants what it wants. Geology chose me and I fell for him hard. Fossils are my life now. Happiness will be defined in the dictionary by a picture of this girl with a pick in her hand and a Brunton compass on her waist. That's why I want to be a geologist: for love, for happiness, to inspire, and to play with fossils for the rest of my life. Paleontology has always been in my soul.

## Melissa Luna, SA-6422

As a child, I have always wondered how the Earth came to be the dynamic planet that it is today. After countless visits to the Philippines, I was exposed to the effects of the Samar Earthquake as well as the aftermath of the Mount Pinatubo eruption, which gave rise to my love for geology. As I came to learn over the years, our society revolves around nature. We are constantly in demand for water, energy, and other resources that all depend on geology. By studying the true nature of our planet through both my academics and my travels, I have made it my goal to make a difference by inspiring others to join me in making our planet a more sustainable environment for generations to come.



As a student, I have been intrigued by how the local geology of an area affects the lifestyle of a region. Until today, people have been affected by the forces of nature, which are all dependent on where they live. By understanding the local bedrock, tectonic behavior, and even the nature of fluvial systems, one can take advantage of what nature has to offer and develop both a productive and sustainable lifestyle. Given what I have learned about the natural features around the world, I want to educate others so that they can take advantage of the geological tools that they have at hand. Until my junior year of college, I was solely exposed to studying geology and the society through textbooks. Fortunately, in the winter of 2015, I was blessed with the opportunity to travel to a country where I was able to see at first-hand how geology shapes society.

During the winter semester of 2015, I was given the opportunity to study abroad in Taiwan through the Center of Integrative Geosciences at the University of Connecticut. In this course, we studied how various geohazards affect major cities and villages within the country. As Taiwan is one of the most tectonically active countries in the world, we learned about how skyscrapers had to be stabilized in such a way to prevent severe damage from frequent earthquakes. Also, we learned the various practices that the Taiwanese government put forth to decrease the negative effects of pollution and increase the quality of the air given the vast amount of coal-fired factories that are operating in the region. By spending a month in a country where it is absolutely necessary to understand geology in order to survive, I have made it my goal raise awareness of the importance of protecting the environment to promote both safety and sustainability in our society.

I want to become a geologist because I want to motivate society to protect our planet. In order to do so, my goal is to become an environmental consultant, so that I can learn about the techniques and theories that are used to analyze and manage the effects of air, land, and water contamination. By understanding these techniques, I hope to someday teach others to carry out simple acts to prevent further damage to the environment. As I have learned over the years, it is necessary to understand the geological features of an area in order to survive. By educating people on what the environment has to offer, I hope to elicit the value of the planet that we live on and encourage others to join me in taking a step towards a sustainable future.

## Kristina Butler, SA-7010

*"I make my vocation my vacation"* - economic geologist Joe Kurtak. Joe gave a presentation called "My life as a geologist," to our geology club a few weeks ago. He has dedicated his career to economic geology in Alaska. Having recently retired, he ended his talk by saying, "I could never be so lucky again." Joe is just one of the countless geologists I have encountered who cannot rave enough about the rewards of choosing a career in geology. As he reminisced on the incredible places he has traveled for research, the people he has worked with, and the rocks he has studied, I felt so fortunate that I found geology. A career in geology means I get to spend my life doing something I am passionate about. It means that working hard now will allow me to travel for research, collaborate with brilliant scientists, and some day develop a research program that provides student with the same experience I have had. I think about Joe's talk frequently as I prepare my graduate school applications and develop my career plan.



Geology was a natural choice for me: traveling, working outdoors, making discoveries, collaboration with brilliant minds, and the integration of many scientific disciplines – these have always been career criteria for me. My parents were English teachers and my family lived all over the world while I was growing up. My upbringing gave me a love for travel, meeting new people, and introduced me to many geologic wonders across the globe. The more I learn about geology the more questions I have, the more I want to travel to new places and spend time with rocks I haven't encountered before. All geologists seem to share this trait, and I have been so humbled by the willingness of many professional geologists to take me under their wing (and often into the field!). Through my undergraduate studies, I have discovered that my research interest lies in sedimentology and stratigraphy. Specifically, I enjoy field-based projects and unraveling how landscapes have changed through time. I feel honored every day that I get to spend my time learning about geology and excited for all the knowledge that awaits me. I am confident that geology will be a challenging and fulfilling vocation. Years from now, when I retire from a lifelong career in geology, I know I will be able to say, "I could never be so lucky again."

## Sean Czarnecki, SA-7532

We're headed out there. We always have been. Out over the next horizon, out over the sea, out of the atmosphere and to the moon. Now the next out there is really out there, out of Earth's orbit. I read an article today about a new fuel-less propulsion technology being developed that could make solar system exploration economically feasible. It's happening. Within my lifetime, I'm confident some brave soul will step foot on Mars.



But I feel that in order for humanity to spread to other planetary bodies, we must have the best available knowledge of every aspect of the worlds we visit BEFORE we visit them. The local, regional, and indeed planetary geology of a planet is probably the most important area of knowledge for an astronaut stepping foot on another planet. NASA has plans to send humans to Mars in the next few decades and I want to be a part of the important research into the surface features of Mars so that these future astronauts know exactly what to expect when they step foot on Mars. But this knowledge is not valuable just for extraterrestrial exploration, but also to give geologists a perspective on Earth systems we have never had before. The morphologies and terrains studied on another planet such as Mars could give us new insights on the structures of the Earth itself.

Participating in this type of research would fulfill a lifelong dream of mine, to have a job studying astronomical objects. My favorite aspect of astronomy was always planets. The possibilities of extraterrestrial life, the extreme surface conditions on Venus, the great variety of Jupiter's and Saturn's moons; these were the things I always loved to learn about. I think that sending humans to these distant shores will only refocus people here on how precious our perfect planet is, and how important it is that we respect and protect our planet so that it doesn't become a hostile environment like the one those first explorers will have to face, out there.

## Katelyn Brower, SA-7588

Without reservation, I want to be a geologist. Ever since I can remember I've been interested in the natural sciences, and as a homeschool student I had the freedom and good fortune to delve into any subjects that captured my interest; much of my science time was spent outdoors in a hands-on environment, on wooded acreage that was, and still is, my backyard. My favorite place is, and has always been, outside investigating everything in the natural world. So, when I started community college in the running start program, after much soul searching and deliberation that seemed to lead to nowhere specific, I took an organic approach to discover a focus of study by beginning to take various earth science classes while filling my repertoire of fundamental requirements. Much to my surprise, in my second year, I took my first geology class as



part of a learning community and everything became clear. I have since been on a firm course and engaged in my education. I am working hard and am an active learner, with a true desire to learn everything I possibly can.

My enthusiasm for geology motivates me to challenge myself and look for more ways to enhance my knowledge. Difficult courses I would have otherwise been frustrated with, I consider to be the foundation for successive classes and beyond to my ultimate goal, as it should be. I will have completed a comprehensive list of pre-requisites at Everett Community College, inclusive of calculus, chemistry, engineering physics and geology series courses upon graduation in preparation for my transfer to university in the fall, all while enhancing my GPA. I also completed a GIS course recently with Western Washington University through our local Everett University Center while continuing to attend the community college. My intent is to support my geology degree, and gain marketable skills to obtain a geology-related internship or position in a research project during summers, and overall hands on experience in the world of geological work so that I can be better prepared for my career.

Likewise, I actively surround myself with like-minded individuals in the geoscience community; casually, academically and professionally. My involvement in clubs and professional organizations allow me to collaborate, learn, network, and converse about geology, mineralogy and the like, making for an enriched experience. I love to glean knowledge from those experienced in the field; they have so much to share. As a steward of the earth and in my leadership role as president of the Math, Engineering, Science, Student's Association (MESSA club), I organized a volunteer event with our local Adopt-a-Stream Foundation, where we participated in a native planting along a creek bank. Aside from feeling good about a job well done, I was pleased to see the organization incorporate education into their program. Because of this, I recently reached out to several families in the homeschool community, for which I still have a connection with through my younger sibling, to encourage their participation in one of their events. My goal is to pay it forward; to share this learning experience and the importance of conservation and environmental consciousness with younger students, and ultimately share my enthusiasm for the natural sciences by including them through hands-on exposure. I am happy to say these families have responded positively and I am in coordination with the Adopt-a-Stream Foundation to organize an event this spring.

Geology is part of who I am, it fits my personality and lifestyle. I live in the Pilchuck Valley near the foothill of Mt. Pilchuck in the Cascade Mountain Range of the Pacific Northwest. The Mountain Loop Highway, by its historical name, leads me home; it also takes me directly into the heart of the Mt. Baker-Snoqualmie National Forest where I have spent many hours and years hiking. I originally hiked with my family as a child in this history rich environment, for which I have fond memories of. As much as I am content repeating those trails, in most recent years, my hiking experiences are more challenging, and have greater educational significance. I still hike with my family for enjoyment and recreation, as this is my solace, but now I am able to discover, interpret and share my knowledge of geology with them, while getting in a little rockhounding, too.

My career choice goes beyond interest; it is my passion and encompasses everything I enjoy in life. Every experience reaffirms my decision into the intriguing world of geology. I am

fascinated by the history of the earth and I find wonder in the things it has to teach us about the past, present and future. Geology is a subject I can get excited about every day, and it satisfies my curiosity, much like that of how I felt back in the day in my own backyard as a homeschooler.

It is with great anticipation that I advance my education to the university level. I am excited to begin a comprehensive geology program, where I will be learning side by side with others who share my passion for geology. Much of my educational experience thus far has placed me in a position of the unique, differentiating me from the sea of engineers that question, “You need physics to study rocks?” It would seem that my colleagues perceive geology, as a mathless, physics-less and scienceless field, for which I scoff at the insinuation. They soon discover I don’t just stand around gazing at rocks.

Honestly, I can’t wait to get into the field and apply what I learn in the classroom to real applications. I am steadfast and confident in my decision to be a geologist. I look forward to serving my beautiful home and community in the Pacific Northwest as an Environmental Geologist, protecting our natural resources.

Thank you AIPG, for supporting education and for the encouragement you are providing future geologists like me.

## Emilie Bowman, SA-6120

I abhorred geology as a child. That is to be expected, however, if your geologist father makes you go mountain climbing for fun (when all I wanted to do was write). I grew up in Scotland, the birthplace of modern geology, so tall mountains and metamorphic rocks were not hard to come by, nor were father-led geological field trips. The rebellious child I was, I quickly learned to ignore conversations focused on turbidite formation or the progradation of the shoreline. When we moved to Houston, Texas, however, this was no longer a problem. There are few geological beauties around Houston; one must drive hundreds of miles for topography. But I didn’t care – I wanted to be a creative writer. On a drive to Kansas City, Missouri during my senior year of high school, my family and I took a detour to Mt. Magazine, the tallest point in Arkansas. On the top of the mountain, my father explained how synclines formed the mountain ridges and anticlines occupied the adjacent valleys. To my surprise, I found what my dad was saying intensely interesting. Thus, I decided to check geology on all of my college applications. I have absolutely no regrets.



Geology, in my opinion, is the most artistic science. The inside of most field notebooks I’ve seen look like Frederic Edwin Church landscapes. What attracts me, however, are the similarities between geology and creative writing. As a geologist, I am able to contribute to a story that is 4.56 billion years long. As a member of the Undergraduate Honors Research Program, I get to write the story of a magma’s ascent to the surface to form one of the world’s largest porphyry copper/gold deposits. By conducting research on magmatic xenoliths and by interpreting plagioclase zonation patterns, I will be able to tell the story of the magma’s ascent. Did the magma assimilate any wall rock components on its way to the surface? Or was it recharged by hotter, more mafic magma? The beauty of geology

is that most of Earth’s history has manifested itself in some way – not only in the lavas that spew out of volcanoes, but also in the folds that deform the Earth’s crust, in the faults that cut different rock formations, and in the chemistry of resistant zircons that hang around for millions to billions of years. As a geologist, I get to devote my life to writing, and in many cases, rewriting Earth’s history.

My experience after checking geology on my college applications has been profound. I have developed a passion for geology intense enough to cause a desire to become a research professor. Now, I would never space out during a geology-centric conversation with my father. In fact, I look forward to them whenever I visit home. I would do anything for the chance to go back to Scotland and hike the highlands.

## Anna Stanczyk, SA-6099

When you hear someone describe their professional role as “helping others,” you likely picture a nurse, a humanitarian aid, or perhaps a psychologist. This phrase is not typically assigned to those in the field of earth sciences. Yet this short formulation embodies a significant piece of my motivation for becoming a geologist. In our current Anthropocene epoch of widespread human habitation, natural hazards quickly unravel into natural disasters which devastate communities and lives. I aim to contribute to the reduction of these negative impacts by becoming an expert in landslide characterization and risk assessment.



This specific purpose blossomed following my decision to produce an undergraduate thesis. One of my first steps in conducting research on landslides was to read the Geotechnical Extreme Events Reconnaissance (GEER) Report regarding the 2014 Oso landslide<sup>1</sup>. The document is as equally fascinating as it is gut wrenching. One simply cannot believe that a neighborhood was allowed to exist at the foot of such a historically active scarp. The catastrophic slide was never an “if,” it was only a matter of “when.” As this reality resonated within me, I realized that my calling as a geologist is to prevent disasters from stealing lives. I recognize that this work will likely come with additional heartache and frustration, but I believe the difficulty of my life experiences has prepared me for that possibility. It is also this risk of anguish which provides motivation to produce accurate, thorough work in the realm of geohazards.

While landslides may be only one of many geohazards that pose a threat to modern civilization, I am of the opinion that they are underrepresented in our national assessment of natural threats. At present, the United States has no national or state guidelines of risk due to natural landslides despite the fact that such strategies are established in other developed countries including Australia and Japan. Also, if the United States still carries in promoting mass wasting valuations, envisage the devastation that occurs in under-developed

<sup>1</sup> Keaton, Jeffrey, et al. *The 22 March 2014 Oso Landslide, Snohomish County, Washington*. Rep. no. GEER-036. National Science Foundation’s Geotechnical Extreme Events Reconnaissance, 22 July 2014. Web. 15 Jan. 2016.

countries that lack even primary building regulations. Thus, this niche provides the perfect fit for my career goals by allowing me to bridge my passion for geology to public policy and therefore to the protection of human lives. For these reasons, when asked why I want to become a geologist, the answer may not be expected. The potential to make a tangible difference in the lives of others draws me to this specific field within the geosciences.

## Aaron Ashley, SA-7467

Starting in college, I could only imagine science as separate fields. But when only one area is taught in each class, who wouldn't? Biology grew on my curiosity exclusively in Biology class, physics attracted my mathematical side solely in Physics class, and chemistry bonded to my intrigue only in Chemistry class. The segregation left little room for intermingling. I've always enjoyed a



bit of everything, which was frustrating when I had to pick one for a career. But, after three semesters, I finally discovered the answer in Geology 1121. What I found was a world of connections. Biology survived to help in relative dating and rock correlation through fossils and paleontology. Physics shed light on areas of hydrogeology, engineering, and structural geology. And chemistry? My reaction to its common application in geology was of joy. Geology is clearly not as separate as the others appeared to be. I've relished that interdisciplinary trait from the beginning, and I knew I wanted to do more with geology.

As I progressed through my courses, I enjoyed all of my classes, but especially those in geochemistry, petrology, structure, and engineering geology. I strove to get more experience in those areas, taking on teacher's assistant (TA) positions in similar classes, where I helped the professors teach new students. In fact, I managed to take on two upper level TA positions last fall in Optical Mineralogy and in Field Methods. What had been a learning process now became a teaching one, one which I found surprisingly enjoyable. What had been interesting and new to learn became exciting to share. It still wasn't enough, though; I needed to do more. So I took on two research projects. For the first, my advisor, Dr. Chowns, and I have been analyzing oolitic ironstones with a scanning electron microscope to better understand their clay-mineralogy. Their strange formation has provided quite the challenge to decipher for researchers, given that there's no modern analogue. Many days have been spent with a furrowed brow, as I spoke with, well really mostly listened to, Dr. Chowns on the subject. For the second project, my other advisor, Dr. Berg, and I have started investigating a very curious suite of metagabbroic bodies in Central Georgia. I still feel the kink in my neck from that field day, as my head switched from petrologist to field geologist and back again as two excited and intrigued professors discussed the possibilities. Two vastly different projects, but both are surprisingly complex challenges, even for the professors. I can't help but think of the satisfaction of determining the answers. But I need to learn more to be able to explore geology's complexities, as even the experts have trouble. I know I need to continue into graduate school, and keep furrowing my brow in thought, as I take the steps to becoming a geologist.

Rocks. That's what a geologist mainly looks at, right? That's what the world seems to think. But it's so much more than that. I feel that I can go anywhere with those rocks, into petrology, geochemistry, structure, engineering, and more. They hold secrets directly beneficial to society. The rocks hold resources we need, whether it's silicon for computer chips, iron for steel, petroleum for cars, or even the radioactive material for our nuclear reactors. Physicists can't take all the credit; someone needs to find their most important ingredient. Geologists can help fuel the world's growth and development by studying the rocks. By studying geology, I can help partake in that, and power us to a better society. Geologists can also save the world. By learning Earth and her processes, geologists can better determine and predict potentially harmful problems. Studies into events like debris flows, earthquakes, water contamination, and others are studied in geology every day. Even coral reef declines are connected to geology, as paleontology ties past and present together from the rocks and present ecology. These studies give us a way to better repair environments we've hurt, and require a special connection only geology provides. By mixing biology, physics, and chemistry, and by looking at the rocks, whether it's through structural, geochemical, or paleontological lenses, geologists can work towards a better future. This is why I want to be a geologist.

## Nam Pham, SA-7498

I am a boy who is curious about everything. I always asked my parents many questions about why natural phenomenon happens such as where rain comes from, why the sea water is salty, why some mountains are higher than the others. I tried to get answers for these questions by reading more books, watching television such as Discovery channel, or asking people around. As time progresses,



I can answer more and more questions. I know the Earth is not round like my soccer ball; evaporation of water in oceans, lakes, rivers and condensation of clouds cause rain. Although geoscience was nothing in my head when I was young, this curiosity was the first step for my interests in nature.

My high school was a good studying environment for me to approach closer to science. I was in a math-focused class and my school has the best experiment facilities among many high schools in my home town. Not all of high school in my country, Vietnam, can have enough and good lab rooms. I was excited when having lab class. I was always a person doing the experiments in my group. The experiments were some easy stuffs in chemistry, physics, and biology. In my class, I was surrounded my many amazing and talented people. We studied a lot of subjects but I especially prefer to study math, physics, and chemistry. I joined in my competitions and challenged myself during my high school years. I had several awards in math competition such as the second prize in VungTau's Mathematic Olympiad. I also loved studying electricity and waves in physics; doing experiments with circuits; studying about molecules, chemical reactions. My high school years were the best time for me to get to know what science is and to get a solid base in some general science courses.

The most important turning point in my life to decide to be a geophysicist was when I got a four-year scholarship from PetroVietnam to study Geophysics at the University of Tulsa. PetroVietnam is the largest oil company in Vietnam; and they chose people from thousands of high school students to study in the United States in order to create an important working generation in the future. My father also works for PetroVietnam and he told me a lot about what it is like in the oil industry. My father's boss is a geophysicist and he also told me who the geophysicists are. I started to have a big view about petroleum geophysicists but at this point, I cannot imagine that I would become a geophysicist in the future. PetroVietnam chose Geophysics as my major in the United States. This was the time when geophysics and I first met. I went to the University of Tulsa and took "Intro to Geoscience" class as my first major class. We heard a lot of professors in the Geoscience department talking about their interested fields such as Structural Geology, Earthquakes, Geochemistry, Environment, and Geophysics. I was interested in the presentations of two Geophysics professors, especially when they taught about the relationship between Geophysics, Math, and Physics. Because my base is a general-science student, I felt excited when hearing about wave equation, magnetic and gravity methods. This was when I decided to go into Geophysics. Even though I am just a sophomore, I took many Geology and Geophysics courses. I am taking Well-logging and Applied Geophysics now and these things are really intriguing to me. I also have a research project about using 3D seismic well log data to create a scientific output data of Teapot Dome in Wyoming.

I always believe that jobs choose people, and not people choose jobs and it is correct in my situation. My ambition in Petroleum Geophysics seems to start late but it is not a problem. There are many decisions in my life but until now, the decision of accepting PetroVietnam scholarship and study to become a Petroleum Geophysicist is the best decision. Becoming a good Petroleum Geophysicist will be a goal I will achieve in the future.

## Wesley Weisberg, SA-6921

My father, who has always been fascinated by the amazing perplexities of our Earth, sparked my passion for geology at a young age. In my youth I had the heart of a geologist. I would gather rocks for my rock collection and attempt to unearth dinosaur bones at the local playground. At eighteen, my adventurous spirit led me to joined the United States Navy where I traveled all over the world as a Naval Aircrewman aboard the P-3 Orion aircraft. My mission was to conduct oceanographic acoustic analysis of submarines and aerial surveillance using advanced imaging systems. I thoroughly enjoyed my time in service and my job, but I felt my life was leading me in a different direction. I served the Navy for 8 years when I realized acoustic warfare was not my passion and that I wanted to pursue a career that I loved.



In the spring of 2012 I decided to leave the Navy, a decision that changed my life. At that time, I was still unsure of what career path I should choose.

"What do I want to do when I grow up?" I asked myself.

My skills as an acoustic analyst, I thought, could not transfer to a civilian job and I felt stuck. That's when I decided to scan through every taxable career available in the Bureau of Labor Statistics *Occupational Outlook Handbook* and noted jobs that seemed appealing. After researching professions, I narrowed down my list to engineering, the sciences (particularly Earth sciences), and historian. In retrospect, I am grateful I did not choose engineering, physics II circuits answered that question, and finding work as a historian seem very narrow. It wasn't until I explored positions offered in the geosciences that I grasped the many career opportunities and pathways available to aspiring geologists. It occurred to me that my training from the Navy could cross over too. As an acoustic specialist, I would collect my data in the field, analyze, and report my findings; exactly what a scientist does. Secondly, I was excited that this was a path I had always dreamed of following but for some reason thought unattainable. This gave me inspiration and hope that there was life after the military.

There were other motivations for my deciding to pursue a career outside of the military. First I want to say, the military is an excellent career but some service members can be close-minded about the prospect of moving on from the armed forces before the standard "twenty-years-service." Particular individuals I worked with believed there was no life outside of the military. They tried to discourage people who wanted to move on to a different career outside the service. A few of my superiors, some of my peers, and even family members have said to me that I would most likely fail if I left the Navy. My mother-in-law even told me "geology is a dead science and that we already know everything we need to know about the Earth." This kind of uninformed negativism sparked additional motivation within myself to achieve my dreams, prove them wrong, and share the amazing opportunities available within the geosciences.

Today, I am living my dream. I have worked hard to achieve my goals including; acceptance to a very competitive internship, developed relationships with individuals in industry through the GSA/ExxonMobil Bighorn Basin Field award, presented my research at various professional meetings, and took initiative at my university as president of our AAPG chapter. My successes have paved a bright future for my family and me in the geosciences and are a testament to my enjoyment for the field that I am in. The steadfast support from my wife and daughter has been my foundation, she is my rock and I could not do it with out her. I still cannot believe that someday I will be getting paid to do what I love. I am a firm believer if you do what you love you never work a day in your life.

## Anna Schuh, SA-7590

Curiosity killed the Cat –  
but not the Geologist!

I want to become a geologist because I am curious. I am curious for the unknown and undiscovered. The travel bug bit me at a young age and I have been happily infected ever since. However, I do not just want to see the world, I want to understand it.



I am excited to learn about something that is far bigger than humans – bigger than humanity itself; something that has been going on for billions of years – a time range hardly fathomable. What fascinates me the most is the idea that geologic processes do not just pertain to our planet, but that other planets' geology can be inferred from mineralogical data, such as provided by the Mars Rover – Curiosity!

During my freshman year at the University of Arizona, I almost switched my major. I had chosen geology because I grew up with it – both my parents are geologists. But did I really know that this was what I wanted to do for the rest of my life? I met great individuals, hungry for knowledge and beaming with excitement. I did not share their enthusiasm. What I was missing was my niche.

I found it in mineralogy, specifically planetary mineralogy. After taking mineralogy – the same semester I was already in the process of switching my major to linguistics – I started working in the University of Arizona's Mineralogy and Crystallography laboratory. This is where I was first exposed to the Nasa Mars Project. Fascinated and excited, I realized this was my true passion. My curiosity was awoken.

Curiosity can be found in many places and the possible scope of curiosity is endless. Curiosity not only leads us to travel to different countries, but truly from the smallest particles of our own body to the outermost edges of the cosmos. Curiosity is the force against inertia. With it, we dive into literature, travel through history, and experience art, math, and science. Awoken from disinterest and apathy, curiosity is what motivates us to follow our dreams and pursue our goals. It is not curiosity that will kill you, but its absence.

## Brett Flessner, SA-7507

### The Slow Moving Process that Is Geology

Ask me 10 years ago what geology was and ten year old me would have most likely described the clear smooth crystals my brothers and I once spent summer vacations to the beach collecting. We would search for hours, and compare our hauls at the end like miniature prospectors, fighting over the smoothest, or shiniest specimens. Little did I know at the time what I was dutifully collecting was Quartz, the most common mineral in the world. That knowledge would probably have diminished my enthusiasm at least a bit, with the realization that these gemstones (priceless jewels to me at the time) were just about as easy to find as any of the other stones laying on the beach. While I certainly was interested in the cool-looking minerals I collected at the time, my interest in geology didn't really extend past filling a bottle or two with my favorite rocks, and forgetting about them once the summer concluded and the camping trip came to an end.

Ask me 5 years ago what geology was and I would have answered that geology was just one of those stupid classes in high school that we would never use again in 'real-life.' At that point in my life, my future plans were to have a positive impact on the world. I was going to be a doctor, a brain surgeon. I



was going to be a big deal. For me, and just as it is for others, geology wasn't even on the radar. Who wants to look at rocks all day anyway? I'd been to the Pictured Rocks in the Upper Peninsula of Michigan. "Sure they look nice," I remember thinking, as we toured the Lakeshore by pontoon, "but they are just Rocks! They aren't going anywhere, what's the point?" I didn't realize at that time, but the point of looking at rocks would become clear to me one day, no matter how long it took.

The summer after I graduated high school I (astoundingly) decided to study geology on a whim, more due to the fact that I had no idea what I wanted to be, than anything else. Had someone told younger me that I would be that nerd that admits to "liking rocks," I would have laughed and denied. When I would be asked what my major was for my first few years at college I would preface with "It's geology, but I don't actually like rocks that much, I just wanted to be able to go outside sometimes."

As I sat there, and spent my days looking at the infamous rocks, something grew on me. Not only did I amazingly come to like looking at the rocks, to the point where I now spend countless hours a week looking at assorted lavas from Ethiopia for various research projects, but I also began to realize that perhaps I COULD have an impact on the world in geology. At least locally, I saw that geologists do exist, and that the work they do not only lets us understand our world better (in terms of my professors), but also help to preserve our environment, and protect people.

Ask me today what geology is, and I would still not have a perfect answer. I was afforded the great opportunity to begin work at an environmental remediation firm in my area this past summer. This experience has truly revealed to me the impact geologists have in the world, and specifically my world. Up to this point in my fledgling career as a geologist I have already been involved in remediating the groundwater at multiple sites in areas very near my hometown. Without this fleet of professional geologists and their ability to analyze and take action in the environment we know and use, the environment itself would be in graver danger than it already is. If you asked me now, I would say being a geologist extends beyond the cool rocks we get to look at, and that it is the opportunity to better our communities in unseen ways, and is incalculably important, the field of geology, no matter how long it took me to come to that realization.

## Casey Saup, SA-4945

Although I have always been a naturally curious person, I was sometimes discouraged from pursuing a higher education due to my then-undiagnosed learning disability—attention deficit disorder. Fortunately, my father, who has the same learning disability, helped me greatly by providing me with the individual scholastic attention I needed and gave me constant encouragement when it came to my unique learning interests, despite the fact that the vast majority of my family never went to college. It was through this nurturing that I was able to discover a love of science and frequent trips to the Orton Hall Geology Museum at The Ohio State University fostered a great interest in geology.



This interest in geology quickly blossomed into a passion and an ever-expanding rock and mineral collection. As I grew older, I began to realize that geology was a viable career option for me, and when I enrolled at The Ohio State University, I declared my major in geological sciences. One of my favorite things about geological sciences that I discovered in my undergraduate career is that understanding geological systems allows for the incorporation of both history and science, and in order to fully comprehend geologic concepts you have to fit these two seemingly unrelated professions together to complete a puzzle. The various courses I took as an undergraduate at OSU also introduced me to the idea that geology is a hard science that can help solve real-world issues, but it doesn't come with the constraints that a lot of other fields have; it allows you to travel and work in the great outdoors. Through encouragement from my undergraduate advisor, I sought out an undergraduate research project, which opened my eyes to the various career paths within the earth sciences.

My 3-year stint as an undergraduate researcher in a stable isotope biogeochemistry lab gave me an appreciation for two things; 1) that solving geological problems often involves other disciplines, and solving problems in other disciplines often requires geological concepts, and 2) the most amazing part of research is being able to teach and reach out to others with my own results and firsthand knowledge. The interdisciplinary possibilities in geology fascinate me and drew me in to the point where I wanted to pursue a Ph.D. in the young and growing field of geomicrobiology. With my degree, I hope to work on issues and solve problems that will allow me to help people—particularly as a geologist in academia or at a federal agency as a researcher studying either biogeochemical cycling or bioremediation. In addition to having long-term goals as a researcher, I also want to be able to teach others. One of the most fulfilling things I have been able to do in my time as both an undergraduate student and a graduate student has been teaching in both a university classroom setting and in a volunteer setting. I love being able to get other people excited about science and the world around them, and geology has something for everyone. Although I feel that I will be able to greatly contribute to the field of geological sciences, and I find it enormously enjoyable and fulfilling, the main reasons that I want to be a geologist are to be able to help and inspire curiosity in others.



Katie Bower showing off her scholarship certificate.



Casey Saup and friends.



AIPG-MO Section President Adam J. "Joey" Rosenfelder, CPG-11632 (left); Wesley Weisberg, SA-6961 (right).



Nam Pham and Dr. Peter Michael, Department Chairperson of Geosciences, University of Tulsa's College of Engineering and Natural Sciences.



Rick Smith, CPG-9794, Arizona section, presenting scholarship to Anna Schuh.