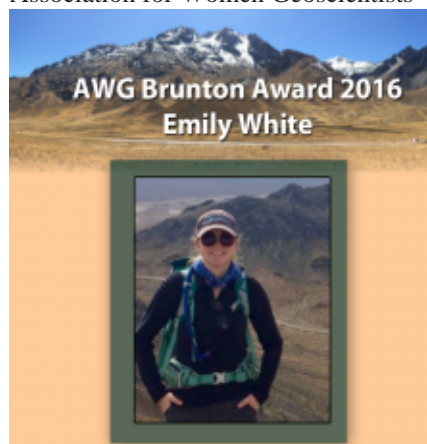


## AWG Awards 2016 Brunton Award! #Geoscience #WomenInSTEM

Association for Women Geoscientists



The Association for Women Geoscientists announced the 2016 winner of the "Brunton Award" in its quarterly newsletter GAEA. This year, it went to Emily White, PhD. candidate at the University of Idaho in their Tectonics and Basin Analysis Group. The AWG Brunton Award promotes the future of field mapping and data acquisition for the upcoming generation of women geoscientists. The award will go to a female geoscience student at the senior level or in her early graduate studies who has been a summer intern, excelled at field camp, or performed field data collection that leads to a senior or graduate thesis. Read Emily's statement below.

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*I am currently in the first year of my Ph.D. studies within the Tectonics and Basin Analysis Research Group in the Department of Geological Sciences at the University of Idaho (UI). My graduate research, advised by Dr. Elizabeth Cassel, is focused on constraining the timing and magnitude of surface uplift in the Central Andes. I use an approach that couples hydrogen isotope compositions ( $\delta D$ ) from hydrated volcanic glass with single crystal sanidine  $^{40}\text{Ar}/^{39}\text{Ar}$  geochronology, both sampled from ignimbrite deposits across southern Peru, to quantify the paleoelevation of the Central Andes over the past 40 Myr. During my next few field seasons, I plan to map Eocene-Miocene sedimentary rocks in relation to basement terranes and conduct fluvial and lacustrine stratigraphy to independently reconstruct drainage divides and local paleorelief. By combining all of these datasets, I aim to ultimately produce a stepwise development of the uplift history and evolving paleotopography during Central Andean orogenesis. My motivation to pursue this field-intensive project at UI stems from an array of prior field experiences that I was fortunate to participate in during my undergraduate training.*

*As an undergraduate at Sonoma State University (SSU), I was immersed in an array of field geology experiences through my coursework, field assistantships, and summer field camp. While working towards my B.S. in geology, I completed seven field geology classes, all of which fueled my enthusiasm for field work. My interest in multiple disciplines of geology and passion for teaching motivated me to serve as a teaching assistant for many different field and laboratory geology courses including Regional Field Geology, Igneous and Metamorphic Petrology, Structural Geology, and a Senior Field Course. The knowledge and experience I gained from my geology courses and as a TA was imperative to my success as I worked as a volunteer field assistant for a graduate student from the University of Idaho during the summers of 2014 and 2015. As a field assistant, I used geologic and topographic maps to identify field locations, took measurements of sedimentary structures, aided in lithological identification, and recorded observations during the completion of stratigraphic sections at various locations in northeastern Nevada.*

*My interest in multiple disciplines of geology motivated me to serve as a teaching assistant for six different field and laboratory geology courses and complete two undergraduate research projects at SSU. For my first independent research project, I completed a synthetic provenance study that characterized fluvial sediment of the Cordilleran foreland derived from tributaries of the Uinta Mountains, WY with Dr. Michael Smith (now Northern Arizona University). For this study, I examined the size and composition of modern-day sediments, collected from streams draining the Uinta Uplift, to provide a basis for interpreting the erodibility and sediment flux of ancient drainage networks. Point counting of loose grains and thin sections revealed sediment compositions that reflect significant variations in the weathering and durability of basement lithologies within Uinta catchments. Through this project, I became fascinated with the geology of the Cordillera and decided I wanted to expand my study area by pursuing research within the Paleogene hinterland of eastern Nevada.*

*As a senior, I used detrital heavy mineral analysis to reconstruct the fluvial drainage network and differentiate between Eocene sediment sources in the North American Cordilleran hinterland under the co-advisement of Dr. Owen Anfinson and Dr. Elizabeth Cassel. For this project, I processed and analyzed samples I had helped collect over the prior two summers. The purpose of this study was to clarify uncertainties in existing provenance data from U-Pb geochronology, (U-Th)/He thermochronology, and field counts of clast lithologies. To conduct heavy mineral analyses, I first developed procedures for acid washing, petrographic and stereomicroscopic identification, point counting, and mineral identification through combined SEM, EDS, and cathodoluminescence (CL) imaging. This study verified that there was predominant upper-crustal recycling of multi-cycle sedimentary basement rocks and widespread hydrothermal mineralization in the hinterland during the Eocene. I was honored to receive the Outstanding Student Award from the Association of Women Geoscientists – San Francisco Bay Area Chapter as a result of my involvement in the geology department at SSU.*

*To further my field training and test my abilities, I chose to enroll in the rigorous geology field camp through Idaho State University (ISU). This physically and mentally demanding field course required me to complete a wide variety of independent field mapping projects and reports. Over the course of this camp, I completed seven full geologic reports and many focused assignments. Geologic reports consisted of a geologic map (completed during one-three days of independent field mapping), a map explanation, cross section(s), stereonet(s), and a written report on the geologic history of each field area. The field camp was structured so that a different ISU professor, with expertise corresponding to a particular geology discipline, led the instruction and grading of projects each week. As a result of this course structure, I had the opportunity to complete mapping-based projects related to a wide variety of geologic disciplines, including sedimentology, igneous and metamorphic petrology, geomorphology, and structural geology.*

*This introduced me to fields of geology I was previously unfamiliar with, such as geomorphology, but I quickly became captivated by the beautiful mountains of Idaho as we hiked through numerous field areas to map moraines and alluvial features along an active fault scarp and countless other geologic features. This field camp was very competitive and demanded that I work efficiently and cohesively with other students to complete a wide variety of projects. This experience was highly-rewarding and served as a true synthesis of my undergraduate coursework.*

*Following field camp, I chose to attend the University of Idaho to complete my graduate studies under the advisement of Dr. Elizabeth Cassel. During the summer of 2016, I spent five weeks collecting ignimbrite samples across the Western Cordillera and Altiplano in southern Peru. I plan to complete two more six-week field seasons in southern Peru where I will collect additional samples while conducting geologic mapping and measuring stratigraphic sections.*

*This upcoming field work will give me the opportunity to share my passion for field studies with undergraduate field assistants who will accompany me for the duration of my field season. I am also privileged to be the teaching assistant for a geology field methods class, which introduces undergraduate geology majors to an array of field techniques. I am extremely thankful for AWG for granting me the amazing support and resources I need to strongly develop my graduate research and ultimately thrive as an educator and geoscientist.*

## Tags:

- geotimes, member society, award
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