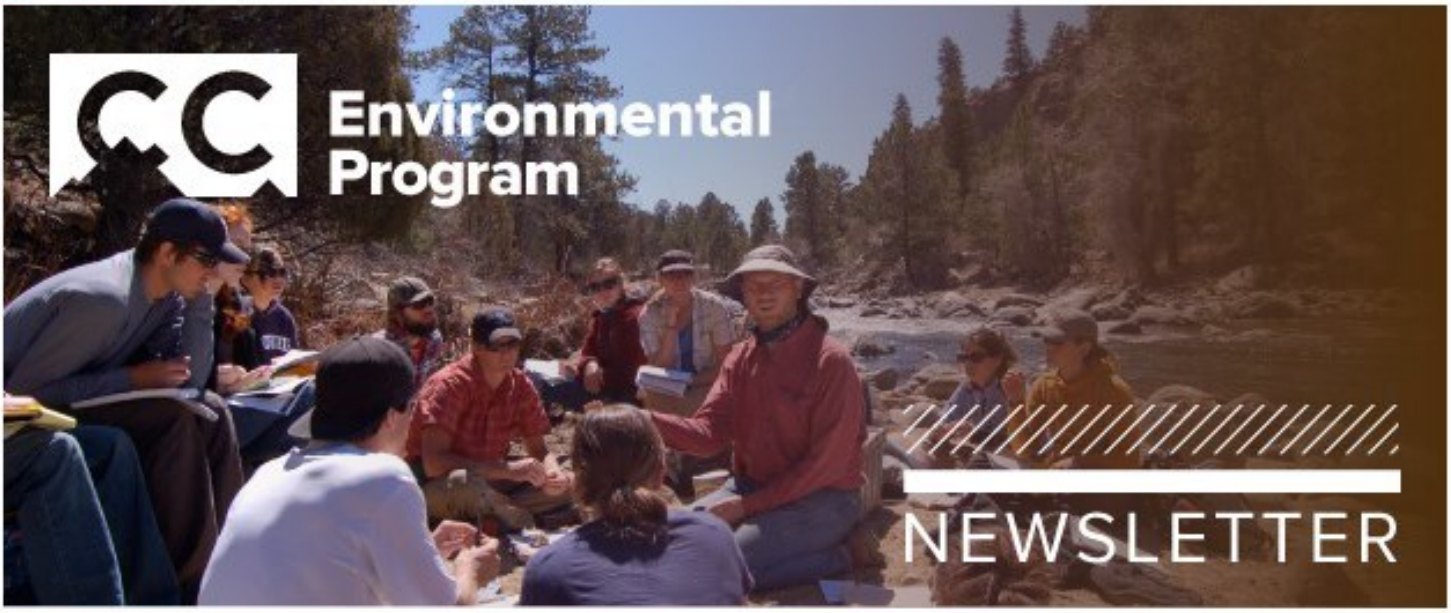

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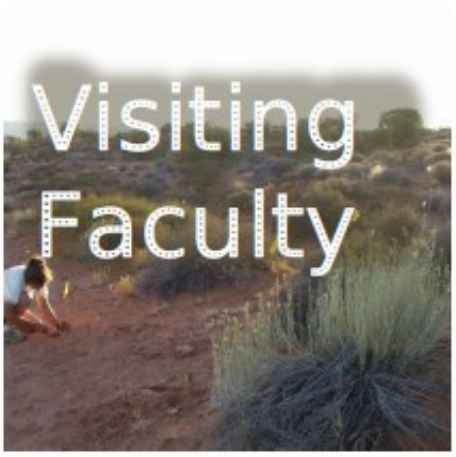
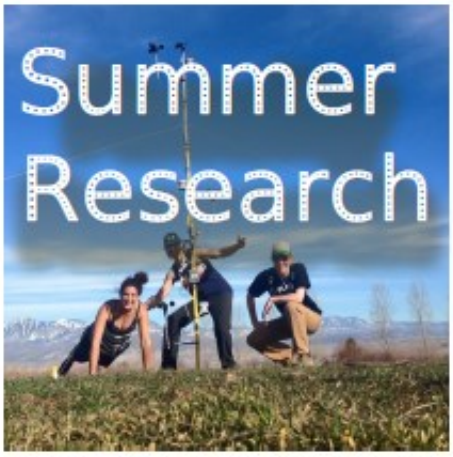
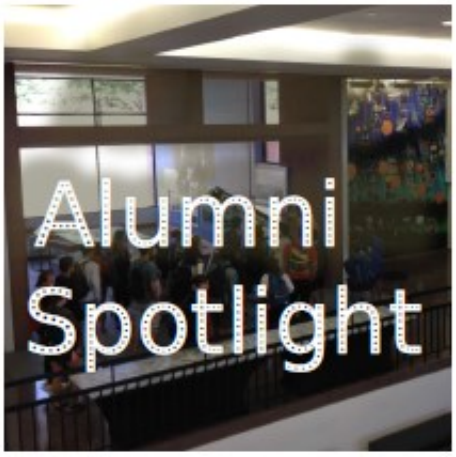
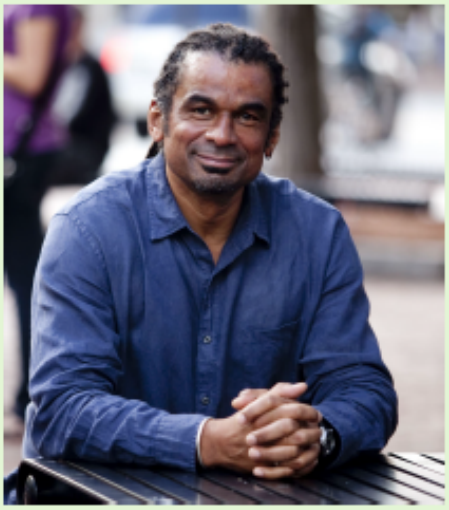






2017 Linnemann Lecture: Julian Agyeman

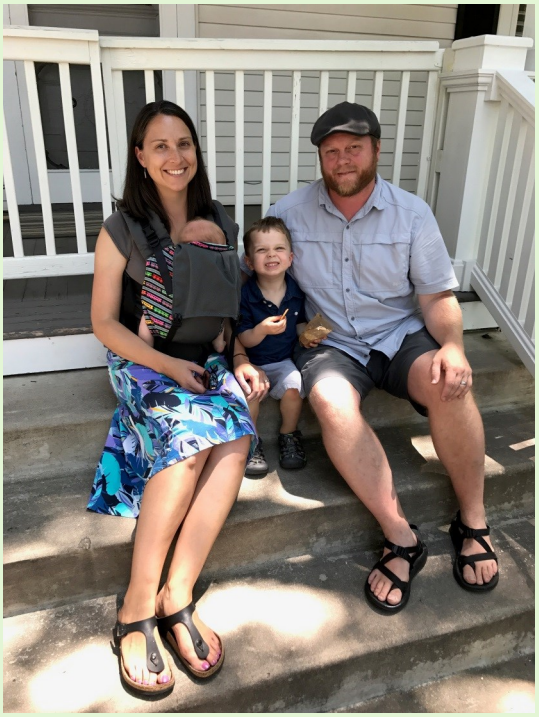


The Timothy C. Linnemann Lecture on the Environment was es-tablished in memory of Timothy Linnemann, a Biology student at CC (Class of '91), who died tragically in a car accident during the summer before his senior year. His family created the Linnemann lecture series "in memory of Tim's lifelong interest in the environment and his love of Colorado College." Each year, the Environmental Program brings a speaker to campus during Earth week and hosts a dinner with all of our faculty and senior majors. A committee of majors in the graduating class choose the speaker and help organize the event. This year, Asheton Gilbertson and Emily Cain are the commitee members, and they picked Julian Agyeman, Professor of Urban and Environmental Policy and Planning at Tufts University and originator of the concept of 'just sustainabilities', the full integration of social justice and sustainability.

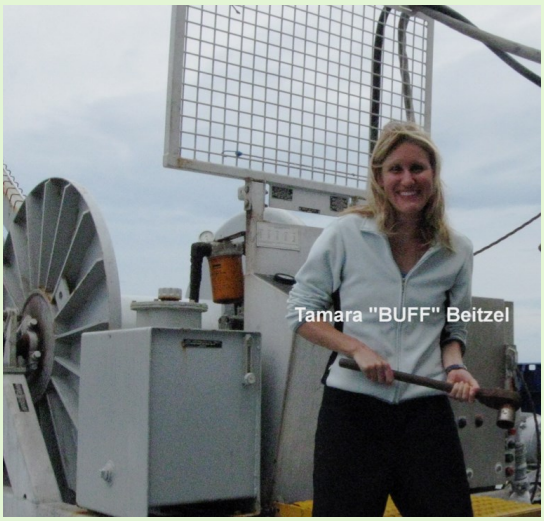
Welcoming Visiting Professors:

Tyler Cornelius and Tamara Barriquand

Dr. Tyler Cornelius is a cultural and environmental historian of the 19th and 20th century American West, who works on environmental issues. He earned his PhD at the University of Michigan in American Culture in 2010. Tyler moved to Western Washington University before starting to teach courses at CC three years ago, ranging from Environmental History to Food Systems and Sustainability. "My work cuts across disciplines in a way that fits well with the Block Plan in general, and EV in particular," he explained. His classes about food systems, for example, address both ecological problems and the social and cultural responses to associated changes, in the past and the present. "We go into the field, and see how it is very difficult to understand the environmental issues facing Colorado Springs without knowing the social and political contexts from which they arise." According to Tyler, the best part of teaching undergraduates at Colorado College is getting to know them as interesting and diverse people. On the block Professors get a chance to spend time with their students, to really get to know their histories and personalities, and see elements of their lives that a teacher might not see when lecturing just a few hours a week. "Here at CC we spend long hours together on the bus, on projects out in the field, in shared meals and conversations. Getting to know the students personally motivates me to be a better teacher, and it makes the challenges of our schedule worth the effort." He strongly appreciates being at an institution that values teaching as much as research -- "Also, Colorado has good beer." Tyler is most excited to teach the senior capstone class. "How analytically ambitious can you be with undergraduates at the end of their time at CC? We are about to find out."

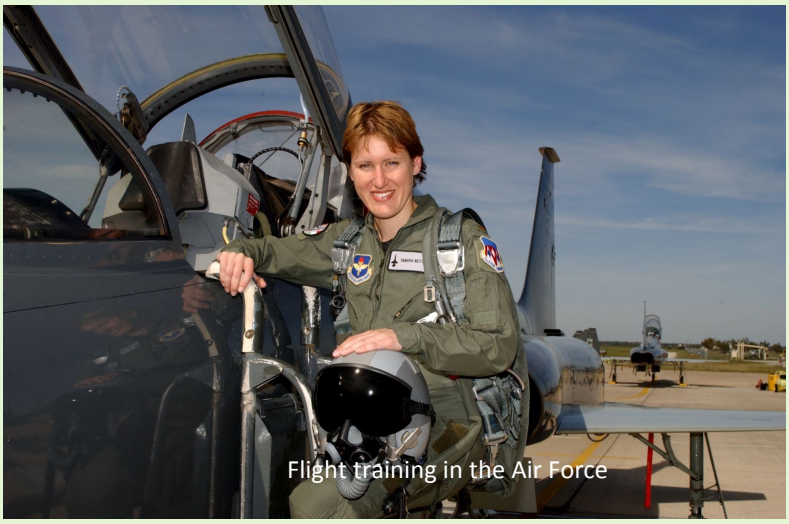


Tyler Cornelius (right) with wife Lynn Gratz, and children: Oscar (to be CC graduate2036') and Alma (2039')



Tamara Barriquand graduated from Colorado College in 2002 as "top graduating Environmental Science major," having double majored in Environmental Chemistry and Physics. She spent the following summer receiving her pilots license before moving to Port au Prince to teach high school math and science at the American School of

Haiti. After one year, she was awarded a fellowship at the Scripps Institute of Oceanography, where she later returned to receive a masters in Oceanography in 2007. After 911, she decided to enlist in the Air Force, becoming the tenth woman to pilot a B52 plane. A major motor vehicle accident left her with a temporarily disabled status after three and a half years in the Air Force, so Tamara decided to move to France to perfect her French. This certainly payed off as she ended up receiving a PhD at the Pierre Marie Curie, University of Paris 6 in Oceanography at the School of Environmental Science.


Flight training in the Air Force

Her first experience teaching at the undergraduate level was during her time as a PhD student at the Ecole Normale Superieure. She went on to teach at the American University of Paris, and loved seeing that light go off when students understand something. One of her most memorable experiences was “when a student approached me and said: ‘you are the reason I want to pursue Oceanography in graduate school’.” Tamara returned to CC because she really wants to be a liberal arts professor. She loves being able to look back on her time as a student here - her previous professors now act as her mentors – and is excited about “seeing how CC has changed in a positive way.” When asked what she might bring to the EV Program, Tamara argued: “it’s important to have a physical scientist” as part of the faculty in the Environmental Program. She noted that Val Veirs, who was the founding director of the Environmental Program at CC, is a physicist and one of her favorite previous professors. Tamara is most excited about

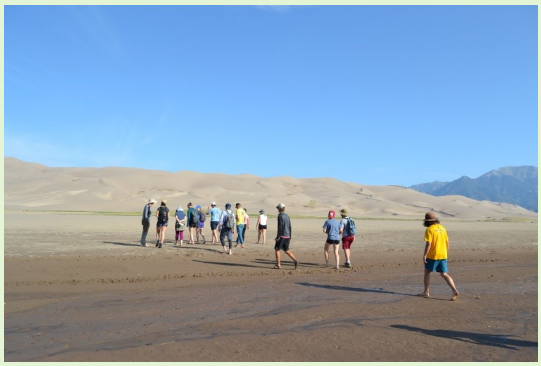
1st Linnemann class ever!

Congratulations to Marion Hourdequin!

Last year, faculty were asked to send in their nominations for the 2018 Linnemann speaker, and for the chance to be selected to teach the first ever Linnemann class. Associate Professor of Philosophy Marion Hourdequin has invited environmental justice advocate Julian Agyeman. Awarded additional funds by the Linnemann family, she is able to bring in speakers and lecturers for her Block 2 Environmental Ethics class.

The course is a study of values underlying human relations to the natural environment; conflicts between values, preservation, conservation, and exploitation of natural resources, and problems in developing and applying a consistent land ethic. Guest speakers and field trips provide additional insight and perspective into the nature-society dichotomy and the ethical values we apply to environmental and social issues.

1st Semester EV Program Courses



Block 1:
EV128 Intro to Global Climate Change
EV315 Atmosphere-Biosphere Interactions
EV274 Env. Policy & Politics
EV 320 Adv. Topics: Oceanography

Block 2:
EV211 Human Impacts on Biogeochemical Cycles
EV271 Environmental Policy
EV281 Environmental Ethics EV128 Intro to Global Climate Change

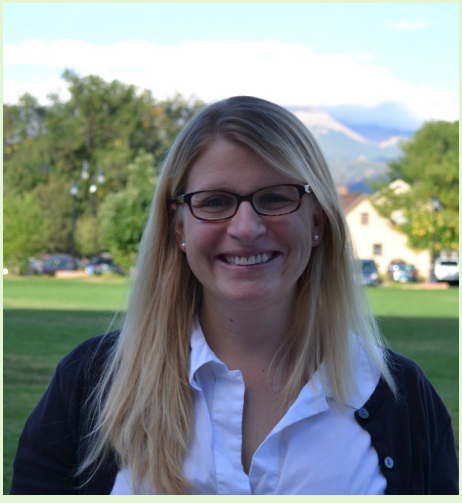
Block 3:
EV212 Energy
EV141 Sustainable Development

Block 4:
EV321 Environmental Management
EV128 Intro to Global Climate Change

Assistant Professor Rebecca Barnes part of NSF grant to fight Sexual Harassment

Rebecca Barnes is one of six recipients of a four year, $1.1 million ADVANCE grant from the National Science Foundation that aims to increase the participation and advancement of women in fields of science, technology, engineering and mathematics (STEM). The project, “From the Classroom to the Field: Improving the Workplace in the Geosciences,” includes a team of earth and space scientists; STEM education experts; and leaders of geoscience societies. A primary goal of the project is to improve work climate conditions and increase gender equity in the geosciences by developing bystander intervention workshops that enable scientists in positions of authority not only to recognize sexual harassment, but also to respond appropriately to prevent and even eliminate the behavior within their workplaces.

“Our hope is that by developing these training modules we can start to change a culture that creates unfriendly and even unsafe work environments for women and people of color. Not only is the status quo unfair, but research has shown that a more diverse workforce is better at solving problems.”



Danny Rodriguez '18 gets Meteorological

This summer, Danny worked with Professor Emily Fischer at Colorado State University (CSU) for the Earth Systems Modeling and Education Institute (ESMEI) REU (Research Experience for Undergraduates) program on a dataset collected during spring and summer of 2015 at the Boulder Atmospheric Observatory (BAO) in Erie, Colorado. Danny's research focused on three oxygenated volatile organic compounds (OVOCs): acetone, acetaldehyde and methyl ethyl ketone (MEK). The team compared the OVOCs they measured to other VOCs, meteorological conditions, previous studies, and computer models to investigate the sources of these OVOCs. The ESMEI REU program is interested in this research because OVOCs account for a quarter of the OH reactivity in the atmosphere along the Front Range, largely contributing to the air quality in Colorado. Danny plans to continue this research for my senior thesis this spring. "I've always been pretty into meteorology and atmospheric science so I wanted to combine that interest with a scientific field," Danny explained. The composition of the atmosphere affects every single one of us every second we are alive, which makes it crucial to understand as much about the dynamics and reactions that affect our air. As climate changes, we will need to know how anthropogenic emissions of chemicals affect that composition. "Not to sound too cliché but climate research is one big puzzle. In Sherlock Holmes style, you are presented with a mystery of this chemical and now you must find out the important facts about it. Where did it come from? When did it form? What path did it take to this final chemical? Are there intermediates? And the plot thickens. I get most excited about working through this detective work. While I may not be solving crimes, this research can lead to policy changes that can improve the air we breathe."

Delaney Tight '18: Nitrogen Cycling in Tidal Freshwater Zones

This summer, Delaney spent three weeks at Ohio State University learning how to use the computer programming system called Matlab, in order to input a math model that applies to nitrogen cycling in tidal freshwater zones on the coast of Delaware. She then travelled to North Carolina and Virginia, scouting out rivers to further their studies on other tidal freshwater

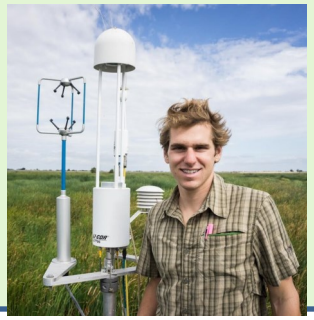
rivers. "I was hoping to better understand how we can use mathematical modeling to understand and represent natural systems in various environments. I wanted to see how we can manipulate variables and solve equations, which can only be done using a computer program."

Delaney independently designed her major called Environmental Math, for which it was "a bit difficult to find cohesive courses for at CC". During her research over the summer, she was able to take a complex concept like nitrogen cycling and make it understandable using mathematical tools. "I have always loved using math to explain science and other subjects and this research offered a perfect way to apply my interdisciplinary major to an issue in our environment today." Delaney loves how climate research applies subjects like physics and chemistry to our natural world in order to solve complex solutions pertaining to our environment and our society. Research in this field is able to not only solve environmental problems using hard

On Thursday, September 21, EV alumni participated in the first of three CC Alumni Climate Forums. This first event, held in San Francisco, brought together CC alumni, parents, spouses and friends; for a roundtable discussion among professionals working on climate change and renewable energy. The four presenters in the panel were Matt Lewis '93, founder and principal at Story/Strategy, Sarah Jo Manson '06, from Silicon Valley Clean Energy (SVCE), John Mi ’07 (EV- Science) of SunPower Corporation and Kyle Hemes ’11 (EV Science), now a PhD student at the University of California Berkeley.

Spearheaded by Professor of Economics Mark Smith, these Alumni Climate Forums are aimed at creating an alumni network focused on providing valuable contacts for alumni working in this space, identifying opportunities for current students, and showcasing CC’s




strength in this field. California, the state with the most comprehensive climate program in the country was the obvious place to start. Feature forums will be held in New York City on February 1 and Washington, D.C. on April 5. There are plans for Denver and Boston in 2018-19, and other cities where there is a critical mass of alumni.

Let us know about you! You can participate in two ways. First, you can join CC's new professional networking platform – Tiger Link and join its first group, Climate Change Professionals. LinkedIn says we have 300+ alumni working in this field – let's get them all on. Second, you can contact Professor Mark Smith at msmith@ColoradoCollege.edu and let him know you want to participate. And once you get on Tiger Link, you can see the good work being done by CC alums to combat global climate change.

Fiona Haslett '15: Sustainability Education

Fiona graduated from CC in 2015 with an Environmental Science major. During her senior year she collaborated with Howard Drossman and Barbara Whitten to build upon work she did over her four years at CC to examine the role of sustainability education in Higher Education. "Sustainability can't exist in a silo," Fiona believes, "the core values of sustainability need to be collectively held and taught across all disciplines." For two years, she taught in the Maine Coast Semester at Chewonki, a semester school for juniors in high school. As the sustainability teacher at Chewonki, Fiona taught an interdisciplinary course called Environmental Issues. Topics of this course included a variety of interdisciplinary topics such as climate change, dam removal, and genetically modified organisms. Her favorite unit was investigating the fisheries industry in the Gulf of Maine. Using the triple bottom line frame work (economic, social and environmental) she worked with her students to better understand the numerous perspectives that exist around each topic. She also taught a course called Renewable Energy Solutions that provided hands-on

learning opportunities around retrofitting homes, understanding the benefits of solar power and realizing the carbon impact of the Internet cloud. Additionally, she acted as an adviser for student Human Ecology capstone projects.

Having been co-chair of the Outdoor Recreation Club while at Colorado College, she was well prepared to create opportunities of transformative growth for students in the outdoors. At Chewonki, she helped facilitate the outdoor leadership program, wilderness trips and mentored four students. She explained: “In a lot of ways Chewonki brought to life so many lessons I had learned while at CC." Fiona is now working in Admissions for Overland, an organization offering a youth summer program that focuses on teamwork and leadership in the outdoors. She explained the most rewarding part of her work both at Chewonki and Overland is building relationships with students and creating opportunities for them to recognize in themselves a newfound sense of self and confidence.

Reconnecting with Kelsey Elwood'12

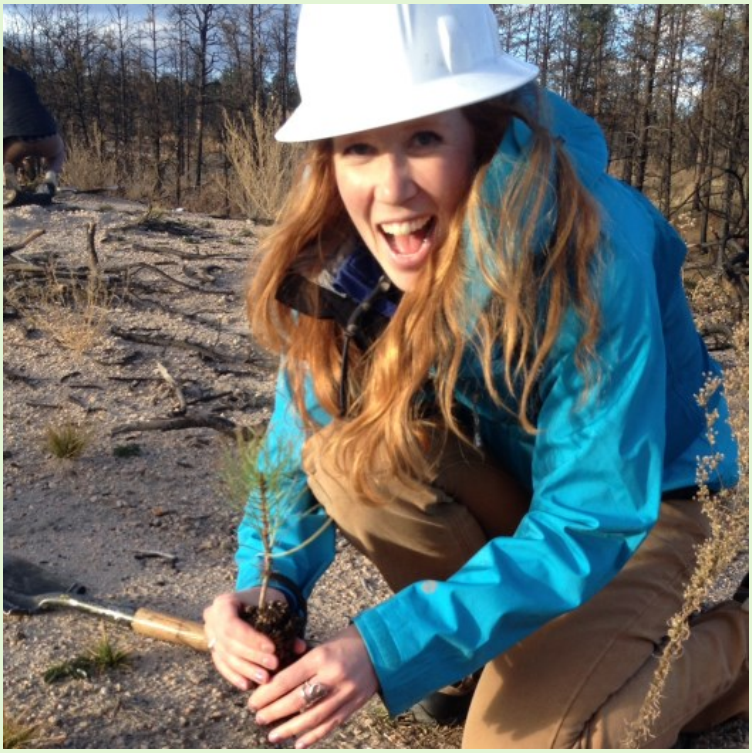
What was your trajectory after CC?

After Colorado College, I spent two years in Aspen, CO. My first winter, I worked as a ski instructor for Aspen Skiing Company and as a front desk assistant at a local hotel. I was working almost 60 hours per week, but still found time to ski almost every day! Because I had a deep interest in environmental issues, I connected with a local non-profit, the Aspen Center for Environmental Studies (ACES). I was fortunate to be hired by ACES as a summer naturalist in 2013. I spent that summer learning about and exploring the West Elk mountains, guiding hikes, and teaching people about the natural landscape of Aspen. I became a handler for an injured Great Horned Owl that lived at the center, which meant that the owl would perch on my gloved arm as I introduced him to visitors and fed him whole mice. During this time I lived at Toklat, an historic cabin in the ghost town of Ashcroft in the Castle Creek Valley. I loved learning - and becoming part of - the history of such an interesting place. I worked for ACES for 2 summers and 1 winter. In the fall and spring seasons, I volunteered for the Denver Museum of Nature and Science at field sites in Utah and New Mexico, excavating dinosaur fossils alongside their paleontology team. In 2014, I returned to CC to become the EV Paraprof, where I stayed for the next two years. Now I am a second year PhD student in the Ecology and Evolutionary Biology Department at the University of Colorado, Boulder. I study alpine plant communities and their relationship with larger ecosystem processes.

What made you come back as Paraprof?

I knew that my time in Aspen was temporary and that I likely wanted to return to academia eventually. The opportunity to be paraprof felt like a valuable next step for me. While my experience as paraprof was not as wonderful as my time as a student, it provided me with the opportunity to learn more about academia from a non-student perspective. I am particularly thankful that we welcomed new female faculty to the EV department during my time as a paraprof. Their influence helped prepare me for graduate school.

What made you decide to enter directly into a PhD program? What has been your favorite part so far? What are some challenges you face?

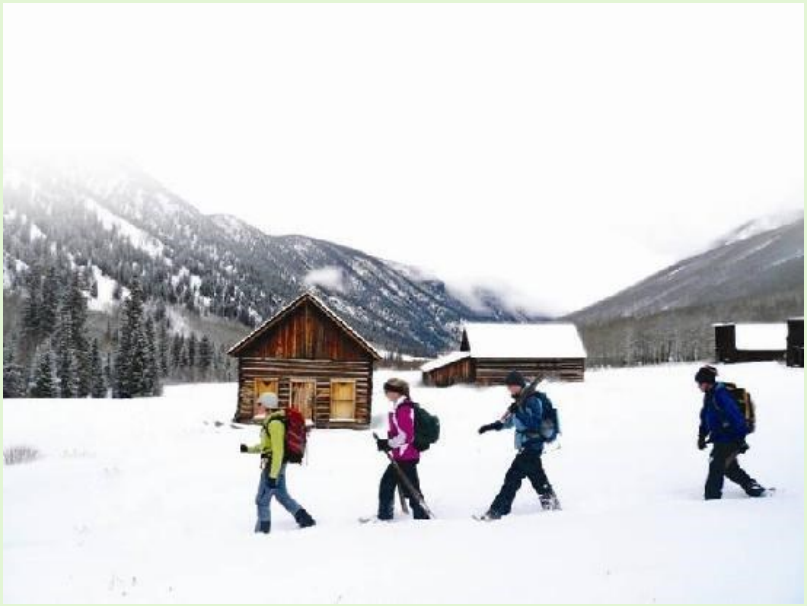


I am a total nerd and love being a graduate student. I entered directly into a PhD program because I felt that I was ready to commit to a long-term science track. In the years since I graduated from CC, I had explored new interests, gained experiences, and considered alternative career paths. In the end, my non-academic experiences gave me confidence that I wanted to return to school to study science. Most of my fellow graduate students also took time away from academia and I think that the diversity of our experiences helps my colleagues and me to better understand the implications of our work beyond academia. Being a graduate student is incredibly challenging. I work long hours for relatively little pay. Work is never finished, as there is always another project looming on your to-do list. It is difficult to balance the numerous responsibilities of graduate work, let alone to balance a personal life. But I am also having so much fun! I like learning and thinking creatively about new science questions and projects. I like that I get to work with my hands, even using power tools to build equipment I engineered for my field work. I like that I spent almost every day of the summer hiking in the alpine and learning about the plants and hydrology of the system. And I like the friendships that I've made with my fellow graduate students. Overall, I feel privileged to be studying science as a graduate student and I am thankful that I found a PhD program that is supportive and helps me grow as a scientist. How has your education in the EV program at CC informed your postgrad work? My undergraduate experience at CC was exceptional. After I graduated, I learned that very few students at other institutions have the quality of experience that the EV program provided. The opportunities for field trips and hands-on experiences is unparalleled. Personally, my undergraduate education gave me a wide breadth of knowledge that I think is critical for influential environmental work. My research on treeline with Miro Kummel in 2011-2012 taught me how fun and exciting research can be, which is unquestionably a major reason that I am a graduate student today.

In what ways has your perspective changed from working at the Aspen Center for Environmental Science?

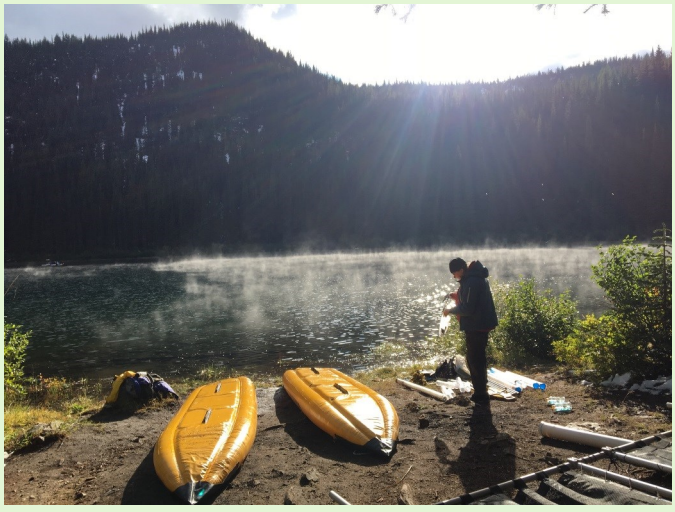
My time as a naturalist guide for ACES was highly influential in my development as a scientist, both as a thinker and communicator. Learning so much about the natural history of the Aspen area helped me understand the interconnectedness of ecosystems in a new way. Though we discussed ecosystem dynamics when I was an undergrad at CC, my time

at ACES allowed me to deeply invest in a single region and learn about how the geology, biology, climate, and human history all combined to shape the world around me. Walking through the forest and knowing the names, medicinal properties, or other unique characteristics of the blooming flowers made the world feel so much more colorful and exciting. I developed a strong sense of place that I hope to carry with me throughout my life. I particularly valued sharing that sense of place with visitors to the community and teaching people about the natural environment. I think it is critical that science feels accessible to non-scientists in our society and I had a lot of fun practicing how to communicate science in a truthful and entertaining way. I am a better scientist today because of how my time as a naturalist shaped my views on natural history and communication. What is the focus of your research? Implications? Future plans? My research focuses on how alpine plants respond to environmental change. Specifically, I am using time-lapse cameras to track greenness and extract important phenological dates such as the start of the season, peak greenness, and the start of senescence. Starting next summer, I will manipulate soil moisture to measure how different plant communities respond to drought stress. The purpose of my work is to explore how warmer, drier summers impact plant communities and to improve strategies for the use of remote sensing of alpine landscapes.

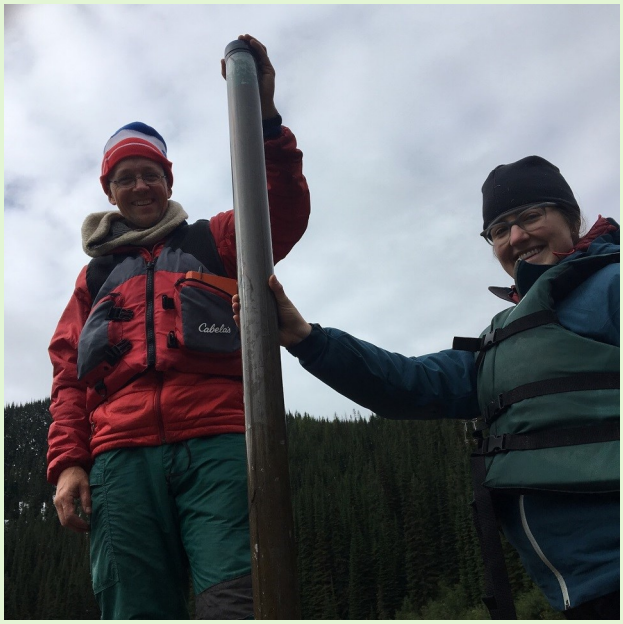


Meredith Parish '15: Paleoclimate and Paleofire

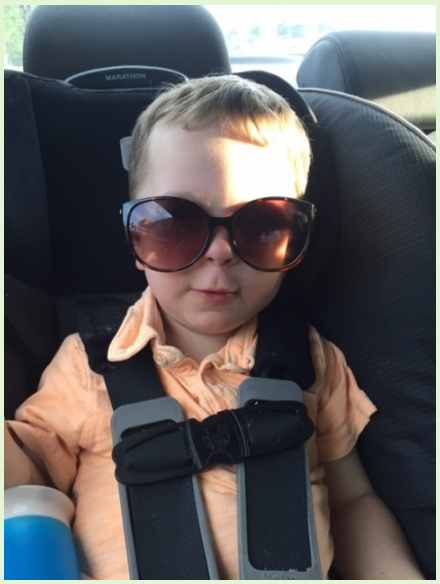
After spending a summer as a research intern with Professor Miro Kummel studying the microclimates at the Pikes Peak treeline, Meredith Parish knew she wanted to pursue environmental science research further. Following graduation in May 2016, she hiked the Camino De Santiago in Spain (thanks to a Keller Family Venture Grant), and then campaigned with NextGen Climate in North Carolina before the 2016 presidential election. This past summer, she worked as a research assistant for Professor Christopher Galik at North Carolina State University, studying greenhouse gas mitigation in the forestry and agriculture. Thanks to Professor Rebecca Barnes, she was alerted to an NSF-funded project spear-headed by her colleagues from a



research network, studying paleoclimate and paleofire in the Rocky Mountains over the past 2,500 years.



The project offers a fully-funded MS position at the University of Wyoming, which is where Meredith is now. This past August, she started an MSc. in Geology with Professor Bryan Shuman, a Colorado College alum, researching lake-level reconstructions as a proxy for past moisture and drought in the Northern Rockies over the past millennia. She is currently involved in processing lake sediment cores she collected at Silver Lake near St. Regis, Montana together with Professor Shuman's lab and Professor Philip Higuera's lab from the University of Montana (including Kyra Wolf!).



Starring Oscar Cornelius 2039'

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