



# ENVIRONMENTAL STUDIES PROGRAM

CENTRAL WASHINGTON UNIVERSITY

2018–2019 NEWSLETTER

## FROM OUR PROGRAM DIRECTORS

*Dear Friends and Alumni,*

*Happy 2019 from the faculty and staff of Central Washington University's Environmental Studies program. We created this newsletter to keep you connected to CWU and our program. We hope it will also inspire you to keep in touch with us and each other.*

*Environmental Studies has three directors this year: Carey Gazis (fall interim director), Anne Johansen (winter interim director), and Pam McMullin-Messier (returning in spring to the director position). We're working together to keep the program moving forward. One big change starting fall 2019 is a new general education program with themes — called pathways — that students can focus on as they meet their gen ed*

*requirements. One pathway we expect to be involved in focuses on sustainability. There are also some topical freshman seminar courses, and we are excited to offer new classes such as "Humans versus the Environment," "Biodiversity or Bust," and "Building Green Communities." Our new sustainability certificate, beginning in 2019, will involve hands-on work to make CWU a greener campus.*

*Other big news for the program is our new secretary, Danielle Palmer. We share her with the Integrated Energy Management program and feel lucky to have her. She is working on improving advising coordination, outreach and recruiting materials, and the web page. She started an alumni page with updates on our grads — please send her a note and a picture if you can.*

*Environmental Studies now has an office in the new science building (still called Science II, but we're hoping that will change). It is Room 111A and is where you can find Danielle. Please stop by and visit if you're in the neighborhood.*

*We wish you and your family a wonderful year ahead.*

*Carey Gazis, Anne Johansen, and Pam McMullin-Messier*

## ■ ROY BETZ

I graduated with a BS in environmental science with a specialization in chemistry. I am an environmental scientist for Naval Facilities Engineering Command Northwest (NAVFAC NW). My work focuses on the Navy complying with federal, state, and local laws. The great thing about my job is if there is another field I am interested in I can tag along and help with other projects. Some of the various fields we have are storm water, wastewater, pollution prevention, and air emissions.

## alumni stories

*TOP PHOTO: Professor Clay Arango, PhD, leads a field trip where students measure plant diversity in two different habitats of the shrub steppe ecosystem.*





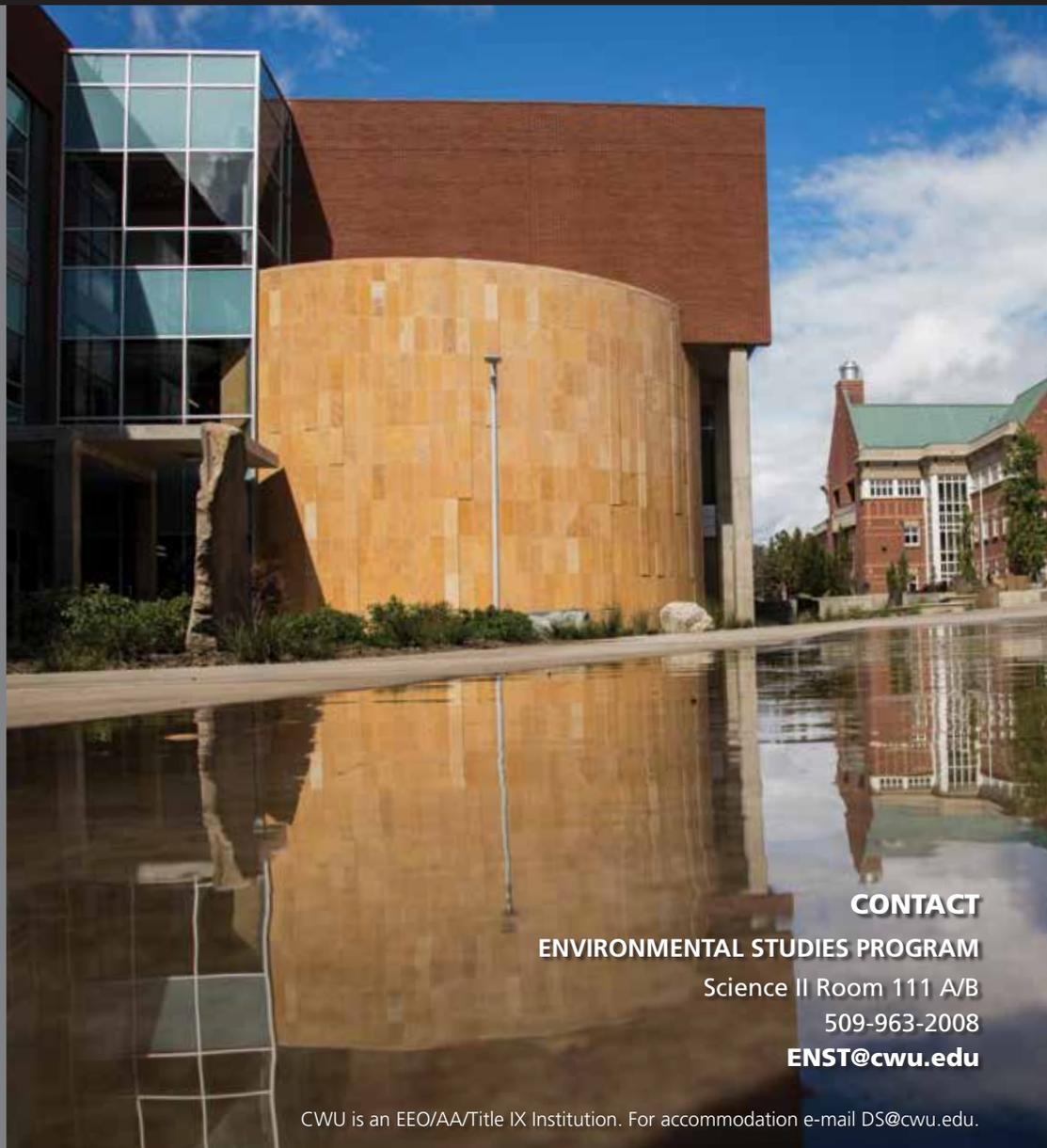
## U.S. Forest Service Summer Internship

Recent geography grad Kyle Navarro, who minored in environmental studies, and Angus Brookes, an environmental sciences major specializing in environmental geography, completed summer internships with the U.S. Forest

Service. They are pictured here with Dawn Fouts of the Cle Elum Ranger District. For internship opportunities with the U.S. Forest Service, contact Jennifer Lipton at [Jennifer.Lipton@cwu.edu](mailto:Jennifer.Lipton@cwu.edu).

### ■ KRISTINA KING-GIBSON

I graduated in June 2017 with my BS in environmental science with a specialization in chemistry. I also minored in math and chemistry. I work as an environmental specialist for the Washington State Department of Agriculture Dairy Nutrient Management Program as the eastern region inspector. I inspect over 100 dairies and CAFO (concentrated animal feeding operation) permitted facilities in eastern Washington to ensure compliance with state and federal water quality standards.



### CONTACT

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## Wild Horse Renewable Energy Center Tour



In October, Holly English, PhD, took students to tour the Wild Horse Renewable Energy Center 16 miles east of Ellensburg. Students got to see the facility's solar array, wind turbines, generators, and gearbox. The facility has

149 wind turbines that can generate up to 273 megawatts of electricity. The facility's solar array can generate up to 502 kilowatts of electricity. For more information visit [pse.com/pages/facilities/wild-horse](http://pse.com/pages/facilities/wild-horse).

### Welcome to our new Secretary Senior

Danielle Palmer joined the Environmental Studies program staff as a secretary senior after her family moved here from Little Elm, Texas. Palmer has a BA in sociology from Jacksonville University and has been working in education for over 11 years. She is excited to join the program and is working to increase its visibility on campus and provide valuable resources to students. Her office is in Science II, Room 111A. You can also reach her at [Danielle.Palmer@cwu.edu](mailto:Danielle.Palmer@cwu.edu).



### ■ ALEXA MAINE

After graduating in 2010 with a specialization in environmental biology I continued at Central for a master's in natural resource management, graduating in 2012. My thesis identified a new population of native freshwater mussel in the Yakima River basin and increased regional knowledge of host fish usage by that mussel species. I later published the results in the journal *Northwest Science* in 2016. In 2013 I was hired by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) as a fisheries research biologist on the Pacific lamprey and freshwater mussel projects. I designed, built, and now manage a freshwater recirculating aquaculture laboratory dedicated to research on early life stages of both lamprey and mussels, and started the first and only freshwater mussel propagation program in the western United States. I have mentored dozens of undergraduate students in my laboratory, and work closely with regional governmental agencies on issues related to population declines in Pacific lamprey and native freshwater mussels. In 2018 I entered University of Idaho's environmental science PhD program, utilizing and continuing my research with CTUIR.



## Assessing CWU's sustainability performance

Susan Kasapri is leading the Sustainability Council in its efforts to complete the **AASHE** (Advancement of Sustainability in Higher Education) **STARS** (Sustainability Tracking Assessment and Rating System) by May 1, 2019.

STARS is a system that institutions of higher education use to assess their sustainability performance. Completing the STARS assessment this academic year will give CWU a sustainability baseline from which it can improve in the future.

## Working Toward a More Sustainable Campus



Susan Kasapri and Danielle Palmer organized a Sustainability Cafe in November with 60 students, staff, faculty, and administrators in attendance. There were nine pre-identified projects originating from last year's cafes and from the Sustainability Council. The projects were prioritized by what could be successfully achieved this year with available resources. By the end of the café, groups were formed to tackle each project:

- 1. Earth Day Event** (Wendi Hembree)
- 2. Education: Infusing Sustainability into Campus Tours and Recruitment** (Andres Moreno Benito)
- 3. Food and Dining: Reduction in Food Waste** (Joseph Pearson)
- 4. Grounds/Dining: Permaculture Project at Wildcat Neighborhood Farm** (Kate Doughty)

- 5. Grounds: Water Use Reduction at Brooklane** (Shane Scott, Blair McNeillie)
- 6. Sustainable Investments** (Toni Sipic)
- 7. Transportation: Bike to School/ Work Day** (Bradley Gasawski).
- 8. Waste Management: Waste Reduction in Residence Halls** (Joe Bach/Environmental Club)
- 9. Waste Management: Paper Management in Bathrooms** (Shane Scott and Jake/Jacob)

Join us for the next Sustainability Café, 3–4:30 p.m. Jan. 23 in SURC 137. Anyone interested in sustainability efforts on campus may attend. For more information contact Danielle Palmer at [Danielle.Palmer@cwu.edu](mailto:Danielle.Palmer@cwu.edu).



**Clay Arango**, PhD, has spent the past several years collaborating with colleagues to study how western spruce budworms influence the movement of energy and nutrients from forest canopies to headwater stream ecosystems in the Central Cascades. He has recently begun a new line of research to understand how stream nutrient ratios change as a result of irrigation water delivery, and how those changes influence the use of organic carbon in stream food webs.



**Lisa Ely**, PhD, is conducting field investigations of earthquakes and tsunamis in Chile, along with CWU geological sciences professor Bre MacInnes, PhD, and colleagues from Chile and U.S. universities. The objectives are to integrate early historic records and geologic evidence of past earthquakes, such as tsunami sand deposition and land-level changes, into tsunami models. One historical record is that of Charles Darwin, who witnessed and described the severe earthquake and tsunami of February 20, 1835 that devastated the coast of central Chile while he was on the Beagle voyage. Seven

CWU students traveled to Chile on this research project, including Trent Adams who put together a video recap of his field experience: [geology.cwu.edu/dept/outthere/ely/chile\\_summer2018/](http://geology.cwu.edu/dept/outthere/ely/chile_summer2018/).



**Kristina Ernest**, PhD, continues her longterm research on ecological connectivity of wildlife species along Interstate 90. She investigates habitat use, species composition, relative abundance, and movement patterns of small mammals such as pikas, shrews, deer mice, voles, and chipmunks as a way to test the effectiveness of wildlife crossing structures being built into I-90 just east of Snoqualmie Pass.



**Carey Gazis**, PhD, took a sabbatical last year to work on research related to carbon storage in soils. Carbon sequestration in soils is a promising partial solution to the problem of increasing carbon dioxide in the atmosphere. Many soils the world over have been depleted of their natural carbon content by practices that remove topsoil or promote carbon decomposition. She is working with students to try to measure various aspects of the carbon cycle in farm soils in Thorp as well as other soils in the Kittitas basin. Gazis also studies groundwater and will be working with groundwater managers in the Yakima River basin to study potential sites for groundwater storage.



**Bob Hickey**, PhD, continues to spend time hiding out on the second floor of Dean Hall, between his office and the Geographic Information Systems lab. His teaching and research focus on GIS and remote sensing applications in environmental science and resource management. He's working on a paper on directional slope calculations and another paper on tidal inundation modeling. In an attempt to combine work and play, Hickey is starting to build a story map showcasing what's left after he converts a lot of wood into sawdust. Learn more at [onlinegeographer.com](http://onlinegeographer.com).

### ■ AMANDA WILLIAMS

I graduated in June 2018 with a specialization in geography. Funny enough, I didn't go to Central for an education degree but I found myself working in the Tri-Cities as a high school earth science teacher, and will soon be taking over teaching AP environmental science. Teaching kids to be mindful of the earth and teaching them things in high school that I discovered in college, will hopefully prepare more environmentally conscious adults in the world.

## alumni stories

# Did You Know?

The **Environmental Studies major** offers five specializations:

- Environmental Biology
- Environmental Chemistry
- Environmental Geography
- Environmental Geology
- Environmental Policy



## ■ MALISSA EDWARDS

After I graduated, I applied for hundreds of open positions that I became qualified for with my new degree. It took some time, but I have just accepted a position with the Washington State Office of the Insurance Commissioner as an administrative assistant 2 for the Policy and Legislative Affairs Division. My experience working as a student and my policy specialization from the Environmental Studies program prepared me to start on my dream career path.

## alumni stories

# Did You Know?

Science II has a rooftop weather and air quality monitoring station that provides useful, real-time air quality data during wildfire season. Learn more at [geology.cwu.edu/airquality/](http://geology.cwu.edu/airquality/).



**Anna Johansen**, PhD, focuses her teaching and research on environmental and analytical chemistry, with particular focus on air and water quality in the context of climate change and human health. Current and past research and community engaged projects include acid precipitation at Mt. Rainier, effects of soot on the environment and human health, air quality in Ellensburg, iron in marine aerosols, and wine faults, and geographic authentication. Students are an integral part of every part of this work, which provides hands-on training in the field, benchtop laboratory experiments, analytical procedures, data analysis, and oral and written dissemination. Johansen's lab is comprised of a diverse group of students from chemistry and environmental studies who regularly land positions at state agencies, analytical laboratories, and graduate schools.



**Susan Kaspari**, PhD, is continuing to investigate how black carbon, dust, and organics deposited on snow and ice melt darken snow and glacier surfaces and accelerate melt. She recently presented some of her research at the American Geophysical Union conference in Washington, D.C. Also during the trip, she visited staff from the offices of Senator Maria Cantwell and Congresswoman Cathy McMorris Rodgers to discuss the importance of funding science and her research about how post wildfire environments have accelerated snowmelt. Kaspari will teach a Campus Sustainability class in the spring. The course is designed for students to work on projects to improve campus sustainability. Susan is also serving as chair of the CWU Sustainability Council and working to get the university to hire a sustainability coordinator.



**Karl Lillquist**, PhD, continues to focus his research on landforms and soils on Central Washington's Columbia Plateau and the eastern Cascades. On the Columbia Plateau, he is working with undergraduates to map and date ice age lakes that formed as the Cordilleran Icesheet receded. He and students are also working with farmers to better understand soil moisture and soil organic matter on conventional tillage, no-till, and conservation reserve lands in this semi-arid area. In the eastern Cascades, he is working with undergraduate and graduate students mapping rock glaciers and protalus features in an effort to better understand permafrost patterns in a warming world.



**Jennifer Lipton**, PhD, is co-director of the cultural and environmental resource management graduate program. If you are thinking of going to grad school, get in touch with her. Lipton has been working with stakeholders such as the U.S. Forest Service, Tapash Sustainable Forest Collaborative, Mountain to Sound Greenway, The Nature Conservancy, and Washington Department of Fish and Wildlife to obtain volunteered geographic information from the public about how they use and recreate on public lands in central Washington. The project involves paid undergraduate internships with the Forest Service to create and disseminate a web-based participatory mapping survey. Watch for a link to comment on how you value your public lands.



**Pamela McMullin-Messier**, PhD, is on sabbatical and back into researching population and environmental social movements. She is examining what has motivated and inspired activists to become involved in their causes. Her methodology incorporates a content analysis of perceptions about population change and impact on the environment and examines the various contexts and social controversies which influence discussions surrounding climate change and migration policies. Themes uncovered include grief and mourning for the environment, sadness and anger for loss in

their social worlds or exclusionary politics, and fear for the future with generations yet to come. While rationales differ among various groups, there is hope that we can re-examine the commonalities of our emotional motivations and make connections to resolve our differences.



**Mike Pease**, PhD, is an associate professor in the Department of Geography and the director of the Public Policy bachelor of science program. His research interests include water resources management, with particular focus on water allocations in the semi-arid American West, and environmental law with specific interest in the Endangered Species Act, and interstate water equity. Pease's recent work evaluated the implications of the recent U.S. Supreme Court decision requiring replacement of barrier culverts across Washington State on the re-establishment of salmon populations.



**Megan Walsh**, PhD, is a biogeographer and paleoecologist interested in the late Quaternary environments of western North America and Central America, specifically the role of fire on the landscape. She is the director of the Paleocology Lab (Geography Department) and uses high-resolution macroscopic charcoal and pollen analysis to reconstruct changes in wildfire activity and vegetation. Her recent publications look at the role of climatic variability and human use of fire in facilitating ecosystem change in the Pacific Northwest and the implications of these changes for

forest management. She mostly works with sediment cores, and has research projects in the Washington Cascades, Mt. Rainier National Park, the Wallowa Mountains, and southern Belize. Many of her CWU courses incorporate this research, including *Forest Environments and Pyrogeography*.



**Stefanie Wickstrom**, PhD, has taught at CWU since 2000. She creates courses for the Environmental Studies program, the Department of Political Science, the Department of World Languages and Cultures, American Indian Studies, and Latino and Latin American Studies. She studies and writes about experiences of native peoples of the Americas responding to destructive development initiatives. She is working on a project that examines the role of grass in the conquest of the Columbia Plateau region in Washington.

*Additional Environmental Studies faculty include:*

**Elvin Delgado**, PhD; **Holly English**, **Anthony Gabriel**, PhD, and **Toni Sipic**, PhD.

### ■ ANNA HOOD

I am working for Snohomish County Surface Water Management in the resource monitoring group studying trends in environmental health of water resources. The work is especially gratifying due to the high level of responsibility taken for all waters within our jurisdiction, regardless of origin, knowing that the rivers and streams flowing through our county have a huge impact on the overall health of Puget Sound. I will soon be applying to graduate conservation programs and working toward a doctorate degree.

## alumni stories

### KEEP IN TOUCH

We love hearing what our **alumni** are up to. Please send career and education updates and a picture for inclusion on our alumni web page and a subsequent issue of the Environmental Studies newsletter. Email updates and questions to Danielle Palmer at [Danielle.Palmer@cwu.edu](mailto:Danielle.Palmer@cwu.edu).

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