

2023-2024



University Awards for Research, Scholarship & Creative Activity

Early-Career Faculty

Julian Fulton, Ph.D.

Associate Professor of Environmental Studies

Senior Faculty

Ronald Coleman, Ph.D.

Professor of Biological Sciences

Award Ceremony & Lecture

October 2, 2024 • 4pm

University Union, Pacific Suite II & III

Program

Welcome

Dr. Nikolaos Lazaridis, Professor of History and
Chair of the Research and Creative Activity
Subcommittee

Dr. Lisa Hammersley Associate Vice President,
Offices of Research, Innovation, and
Economic Development (Interim)

Presentation of Award Recipient for Early-Career Faculty

Ajay Singh, Associate Professor, Environmental
Studies

Early-Career Faculty Award Lecture

*Trash Talking: How Participatory Science is Cleaning
Up Our Environment and Centering Expertise*

Dr. Julian Fulton, Associate Professor of
Environmental Studies

Presentation of Award Recipient for Senior Faculty

Shannon Datwyler, Dean, College of Natural
Sciences and Mathematics (interim)

Senior Faculty Award Lecture

Underwater Treasures

Dr. Ronald Coleman, Professor of Biological
Sciences

This event is co-hosted by the Faculty Senate Research and Creative Activity (RCA) Subcommittee
and the Offices of Research, Innovation, and Economic Development.

For more information about this award program,
please visit csus.edu/research

Award History*

University Award for Research, Scholarship & Creative Activity for Early-Career Faculty

This award was established in 1989 and is given each year to recognize a colleague in the first ten years of their faculty appointment who has made significant contributions to his or her discipline through scholarly activity, research and publication, or creative and artistic endeavors.

2023-2024

Julian Fulton

Environmental Studies

2022-2023

Nicole Fox

Criminal Justice

2021-2022

Jun Dai

Computer Science

Kimberly Mulligan

Biological Sciences

2020-2021

Rodolfo Barniol Duran Physics &
Astronomy

2019-2020

Arturo Baiocchi

Social Work

2018-2019

Sharon Furtak

Psychology

University Award for Research, Scholarship & Creative Activity for Senior Faculty

This award was established in 1961 and is given annually to a faculty member who, over many years, has made significant contributions of a discipline through scholarly, activity research, publication and creative and artistic endeavors.

2023-2024

Ronald Coleman

Biological Sciences

2022-2023

Katherine McReynolds

Chemistry

2020-2021

Hakan Ozcelik

Management & Organizations

2019-2020

Mona Siegel

History

2018-2019

Barbara Carle

World Languages & Literatures

2017-2018

Maureen Smith

Kinesiology and Health Science

2016-2017

Jamie Kneitel

Biological Science

*The full list of award recipients can be found online at csus.edu/research

Julian Fulton, Ph.D.

Associate Professor of Environmental Studies

Trash Talk: How Participatory Science Is Cleaning Up Our Environment and Decentering Expertise



Abstract

Dr. Julian Fulton invites you in this lecture to explore the intersection of community engagement and environmental science through his recent work on trash. Central to Dr. Fulton's current scholarship is the development and implementation of *participatory science* methodologies. These approaches empower community members, students, and local organizations to actively contribute to scientific research as well as environmental monitoring and governance. Dr. Fulton will discuss his collaborations to create curriculum and user-friendly tools, such as mobile apps, to enable non-expert participants to collect and report data on trash accumulation in their communities. This data not only contributes to better understanding of the uneven distribution of litter but also informs local mitigation strategies and environmental policies.

Unmanaged trash or litter is a ubiquitous environmental pollutant that impacts non-human species and humans alike. However, among humans, it disproportionately affects underserved and minoritized communities across the globe, including right here in Sacramento. Trash impacts water quality, for example through degradation of plastics into microplastics that now circulate the water cycle, and community health as recreational, chemical and psychosocial hazards. Trash management policy and mitigation technology have received increasing attention among scientists in government and academia. Still, service projects like the recent Great American River Cleanup provide ample opportunity to engage communities impacted by trash with the science and solution-forming processes.

The lecture will highlight recent work on campus, in the Sacramento region and now in the Bay Area that exemplifies this participatory science approach. Attendees will learn about university and high school students engaging in environmental monitoring, contributing valuable data while gaining critical skills to embody the next generation of environmental leaders. Dr. Fulton will explain how these projects serve a dual purpose: advancing scientific understanding while providing educational opportunities and uplifting environmental stewardship among younger generations.

Furthermore, Dr. Fulton will address the broader implications of participatory science in environmental science. He will demonstrate how lessons learned from community-based trash monitoring inform our understanding of other critical environmental issues, including biodiversity conservation and climate change adaptation. The presentation will touch upon Dr. Fulton's previous work on water footprints and the energy-water-climate nexus, illustrating the interconnectedness of environmental challenges and the importance of community engagement and data democracy in addressing these complex issues.

Ultimately, Dr. Fulton wishes to convey a story of scholarship that was truly "made at Sac State"; in co-evolution with his students' passions, his teaching and service opportunities, our shared campus imperatives and his interdisciplinary collaborations with incredible faculty and staff. He hopes that the lecture will spark discussion, new ideas and future collaborations.

Biography

Dr. Julian Fulton is an Associate Professor in the Environmental Studies Department, where he has been a faculty member since 2016. Dr. Fulton earned his Ph.D. in Energy and Resources from UC Berkeley in 2015, following a MSc degree in Civil and Environmental Engineering and a BA degree in International Development Studies from the same institution. This multidisciplinary education has shaped his unique approach to environmental challenges, blending technical expertise with a deep understanding of social and policy dimensions.

As a researcher, Dr. Fulton has made significant contributions to the field of water resources management and policy, particularly its engagement with diverse stakeholder communities. His work on water footprints in California's context has been influential in shaping policy and public discussions around sustainable water use. He has authored numerous peer-reviewed articles, book chapters, and reports on topics ranging from the water footprint of California's energy system to the use of machine learning in citizen science.

Dr. Fulton's research has been supported by various awards and fellowships, including seed grants from ORIED and CSU-Water that resulted in grants totaling over \$1.2 million from the U.S. Environmental Protection Agency, which have funded student research positions and community partnerships. His work often involves interdisciplinary collaborations and the development of innovative tools for environmental assessment and decision-making.

Dr. Fulton's expertise is widely recognized, leading to invitations to speak at international conferences, workshops, and policy forums. He has presented his work at venues ranging from the American Geophysical Union to the Pacific Council on International Policy. As a peer reviewer for numerous prestigious journals, including *Nature Climate Change* and *Environmental Science and Technology*, he plays an active role in maintaining the high standards of environmental research.

In the classroom, Dr. Fulton is known for developing and teaching courses that center inclusivity while bridging theoretical concepts with practical applications. His courses, such as "California Water and Society" and "Energy, Society and the Environment," engage students in experiential learning and challenge them to incorporate diverse, critical perspectives to their career training. He has innovated his courses with Wikipedia curriculum and Authentic Learning Experiences with Sac State's SIRIUS program. He was a McNair Scholars Program mentor and is dedicated to mentoring his students through research projects and senior theses as our alums transition to positions in environmental leadership.

Beyond academia, Dr. Fulton maintains strong ties to our regional environmental policy community. He serves on several committees and advisory boards, including the California Trash Monitoring Workgroup and the California Statewide Plastics Monitoring Technical Advisory Committee. He also serves as a Scientific Advisor for ClimateCheck, a startup focused on assessing climate change risk for potential homebuyers. These roles allow him to translate his research into actionable policy recommendations and practical applications in addressing environmental challenges.

In his spare time, Dr. Fulton can typically be found being called "papa" by his two boys as they and his wife explore the outdoors and often enjoy picking up trash wherever they go, *literally*!

Ronald Coleman, Ph.D.

Professor of Biological Sciences
Underwater Treasures



Abstract

My field of study can be broadly defined as **evolutionary ecology**, i.e., why organisms do the things that they do. There are tentacles that reach out from the core of evolutionary ecology into diverse related fields. At the center of my research is understanding the **evolution of parental investment in fishes**. Why do some parents provide care for their offspring, while others do not? How much investment should a parent provide, whether that be in the form of allocating resources to the eggs, or providing subsequent parental care such as guarding or feeding the offspring?

To understand these questions, I delve deeply into exactly how evolution by natural selection works. My research involves theoretical modeling of parental investment, using life-history, game theory and computer simulation, as well as manipulative experiments in both the field and laboratory, predominantly using cichlid fishes. The cichlid fishes are a large family of freshwater fishes, found in the New World tropics, as well as Africa, constituting nearly 2000 species, that provide tremendous opportunity to investigate biodiversity, including diverse solutions to the problems posed by parental care (all cichlids provide parental care in one of many forms). Unlike many fishes, cichlids can be studied in both the laboratory and in the field. Fieldwork ensures that I understand the true context of how they live, while the lab allows careful manipulation and experimental control. I have made over 30 research trips to the rainforests of Costa Rica, along with other trips to Brazil, Mexico and Nicaragua. At Sac State, I maintain the Evolutionary Ecology of Fishes Laboratory, in Humboldt Hall, which contains about 170 fish tanks. I encourage everyone to visit.

The lab is also home to the many undergraduate and graduate students that I work with. I currently have 12 Masters students and 10 undergraduates which makes for a busy, vibrant environment. I have worked with over 180 research students over the years. Their curiosity and enthusiasm keep me young.

I have published extensively in the core area of my interests. Intriguing questions have drawn me into research in related areas, e.g., fish migration, both on a global scale and locally, breeding habitat, morphometric variation in salmon, surfperches, and cichlids, and the evolution of sex in general. I have also had several students work on frogs, bats, snakes, turtles and lichens. My extensive work with cichlids allowed me to edit a volume on current cichlid research. The fact that I have worked in Costa Rica since 1989 has made me an expert on the fishes of that country and how they interact with rainforest environments. I am currently writing a book chapter on the fishes of northeastern Costa Rica. This time in the field and in my laboratory (I still clean fish tanks most every day) is critical for reminding me that ultimately it is my fascination for nature that makes my work so enjoyable to me and to my students.

Biography

Ron was born in Ottawa, Ontario, Canada (1962) and has three brothers, all born within five years of each other. As a kid, he played a lot of hockey and in the summers enjoyed going to the cottage and fishing with his grandfather. It was only “fishing” in name, because they seldom caught anything, but that wasn’t the point.

In middle school, the family moved to Toronto where he started high school but then moved out west and finished high school in West Vancouver, British Columbia. At heart, he considers himself from “BC” because of its intense natural beauty and the proximity to nature. He enrolled in Zoology at the University of British Columbia and worked during the summers and weekends as a Guide at the Vancouver Public Aquarium, explaining exhibits to visitors. The guiding experience gave him valuable experience in public speaking. He was inspired by the incredible diversity of fishes but never really thought about studying fishes because he never learned to swim (and still can’t)!

After finishing his Bachelors, he did a Master’s degree at Simon Fraser University, in Burnaby B.C., with Dr. Mart Gross, studying bluegill sunfish parental care in the lakes of eastern Ontario. Just after he finished the Masters, the whole lab moved to the University of Toronto and Ron did his PhD. there, studying biparental care in convict cichlid fishes in the lab. A brief trip to the tropical rainforest of Costa Rica in 1989 forever changed his life and he has worked there ever since. After finishing the PhD, he was awarded a NATO Postdoc to go anywhere in the world and he chose University of California at Berkeley where he studied under Professor George Barlow, a true gentleman and scholar. He stayed at Berkeley until just before he started at Sac State in 2001.

Since starting at Sac State, he has taught over 25 different courses in the areas of Evolution, Ecology, Fishes, etc. at the graduate, undergraduate, major and GE levels. He truly enjoys teaching, but his greatest joy is working with graduate and undergraduate researchers of which he has had many. He has graduated 31 thesis-based Masters students and worked with over 150 undergraduate researchers. He is proud of each and every one of them and tries to keep in contact with them as they advance through their lives and careers. Three are now professors, one is a Dean, and many others have their PhD, Masters or other credentials, including Medical Doctors, Physician Assistants, Veterinarians, Pharmacists, teachers, etc. Many of them work for local, state and federal agencies.

Ron lives in the South Land Park Hills area in a nice little very fine house with his wonderful wife Kristi, three cats in the yard, many fishes and tons of plants.



Thank you to the 2023-24 Research and Creative Activity Subcommittee for their work in selecting these two outstanding recipients

- **Sadaf Ashtari**, College of Business (Chair)
- **Mei Shen**, Teaching Credentials, College of Education
- **Vacant**, College of Arts & Letters
- **Susanna Curry**, Division of Social Work, College of Health and Human Services
- **Samantha McClellan**, University Library
- **Rohollah Moghadam**, Electrical Engineering, College of Engineering and Computer Science
- **Santosh Kandel**, Mathematics & Statistics, College of Natural Sciences & Mathematics
- **Clara Scarry**, Anthropology, College of Socials Sciences & Interdisciplinary Studies
- **Elaine Xu**, Audiology, Health & Human Services, At-Large Member
- **Vacant**, Senate - FPC Committee, FPC Member



SACRAMENTO STATE

California State University, Sacramento
6000 J Street
Sacramento, CA 95819
csus.edu/research