

Liz Goehring is an ecologist, science educator, and citizen science trainer. She has over twenty years experience developing K-12 science curricula that feature current research programs (e.g., monarch ecology, deep-sea ecosystems) and citizen science (e.g., MonarchWatch, Project BudBurst, JourneyNorth, GLOBE). Her own research focused on monarch ecology and understanding environmental factors triggering reproductive diapause. As an ecologist and educator, she specializes in bringing science to life in the classroom, and has taught middle school through college students, as well as in-service and pre-service teachers. Liz currently works with the Cottonwood Institute, leads an active sustainability team in her Denver neighborhood, and conducts trainings for the Monarch Larva Monitoring Project along the Front Range.

Megan Mueller is a Senior Conservation Biologist with Rocky Mountain Wild (RMW), and the co-director of the Front Range Pika Project, a citizen science initiative that engages the public in field research on the effects of climate change on American pika. She has a B.A. in biology from the University of Colorado and an M.S. in Environmental Studies at the University of Montana. Megan has ten years of experience leading Rocky Mountain Wild's wildlife conservation and citizen science programs. Prior to joining the staff of Rocky Mountain Wild, Megan worked for the U.S. Forest Service Rocky Mountain Research Station and drafted a feasibility study for river otter restoration for the New Mexico Department of Game and Fish. Megan is a Doris Duke Conservation Fellow.

Tim Seastedt is a professor in the Department of Ecology and Evolutionary Biology at the University of Colorado Boulder. His research includes plants, soils, and animals found in the alpine areas and grasslands of the Colorado Front Range. An ecosystem ecologist, he studies how environmental factors such as climate change and introduced plant species interact to affect natural areas. His work on controlling the invasive plant, diffuse knapweed, won him a Boulder Pacesetter Award for work on the Environment in 2005. He was among the scientists acknowledged for contributions to the Intergovernmental Panel on Climate Change that received the Nobel Peace Prize in 2007. He is the faculty sponsor of the CU Student Association, Society for Ecological Restoration. He currently serves on the board of directors for Wildlands Restoration Volunteers and as an occasional volunteer crew leader for some of their restoration activities.

2:30 Closing remarks: Dr. Sandra Laursen, Senior Research Associate and Co-Director Ethnography & Evaluation Research, University of Colorado Boulder

Finding the Science in Citizen Science: Front Range Environments

Saturday, March 18th, 9 - 2:30
Boulder County Nature Association
Annual Ecosymposium
Free and Open to the Public

University of Colorado
Sustainability, Energy and Environment Complex (SEEC)
4001 Discovery Drive, Boulder, CO 80303

Details at <http://bcna.org>

Please bring a reusable plate, cup and utensils for the complimentary lunch.

Donations will be accepted for the Boulder County Nature Association's Research Grants program.

Many thanks to the sponsors who made this symposium possible: Boulder County Nature Association; Boulder County Audubon Society; Boulder County Parks and Open Space; City of Boulder Open Space and Mountain Parks; and the University of Colorado Albert A. Bartlett Science Communication Center, the Department of Ecology and Evolutionary Biology, and the Environmental Studies Program.



8:30 Coffee, name tags, and greeting

9:00 Welcome from BCNA President Sue Cass

9:10- 10:00 Dr. Waleed Abdalati: Citizens and Science - The Power of Personal Perspective

Having dedicated most of my career to the understanding of Earth through space-based observations, I learned the importance of the global perspective in understanding the world in which we live. Citizen science provides a different kind of perspective – one that is up close and personal – that not only provides critical information about the world around us and our interactions with it, but also connects people to science and data in a very meaningful way. This engagement and enthusiasm benefits the participants, science, and society as a whole. That is the power of the personal perspective.

Waleed Abdalati, Ph.D., is director of the Cooperative Institute for Research in Environmental Sciences (CIRES) and professor of geography at the University of Colorado Boulder. His research makes use of satellite and airborne remote sensing, combined with in-situ observations and computer models, to understand how and why the Earth's ice cover is changing, and what those changes mean for life on Earth. To study how ice sheets and high-latitude glaciers contribute to sea level rise, he has helped to develop NASA's Ice Cloud and Land Elevation Satellites (ICESat, ICESat-II) and worked on cryospheric applications of other satellites and aircraft instruments. Abdalati worked as a NASA scientist for 12 years before joining CIRES and served as NASA's Chief Scientist in 2011-12. He will host a four-part TV series on citizen science, "The Crowd and the Cloud," coming to public television in spring 2017 (<http://crowdandcloud.org>).

10:00-10:15 Break

10:15-11:05 Chris Wood: eBird and the Elephant's Child

You can learn a lot from a Rudyard Kipling poem. But it may surprise you that the foundation for one of the largest citizen science projects in the world, eBird, focuses on those same six honest serving-men that served so well—their names are What and Where and When and How and Why and Who. This presentation will explore how these six simple questions have engaged more than a quarter million people around the world to contribute their observations — observations that help them become better birders, that are used to engage others in the world of birds. These data are used by researchers across an array of disciplines from ecology to evolution, computer science to statistics and have played a significant role in the emerging field of computational sustainability. But as data quantity increases, what happens with data quality? Is there a tradeoff? How do you analyze 400 million records? We explore these issues and techniques that enable researchers to understand birds at a broad array of spatial and temporal scales, and see how birds connect hemispheres, ecosystems, and communities. Finally, we'll explore how these data are being used to affect conservation on a local, regional and global scale. It all begins with birdwatchers, spending time in the field, identifying and counting birds, and their "satiated curiosity."

Chris Wood is the Assistant Director of Information Science at the Cornell Lab of Ornithology where he leads a variety of projects including eBird, Birds of North America and Neotropical Birds. He is widely recognized as a leading authority on bird identification and distribution and has written and consulted on various books, popular literature and scientific literature on birds. These activities are all built around Chris's primary interest – developing ways to connect birders with researchers and the conservation community to better understand and conserve birds and their ecosystems. Chris grew up in Morrison, Colorado, and lived for two years in Nirwot, and looks forward to returning to Boulder County.

11:35-12:05 Spotlight on local citizen science projects

Steve Jones, a long-time environmental leader in Boulder County, Sue Cass, the president of BCNA and a POSAC board member, and Michelle Durant, Wildlife Biologist and Volunteer Programs Coordinator for Boulder County Parks and Open Space, will highlight some of the many citizen science projects designed to study local systems.

11:35-12:05 Lightning talks about table displays

12:05-1:15 Procedures for lunch and visiting tables and posters. Lunch.

1:15-2:30 Afternoon session: Maximizing the value of local citizen science projects for participants, scientists, designers, sponsors, and community

Moderator: Dr. Greg Newman

Dr. Greg Newman is founder and director of CitSci.org – a global online citizen science platform supporting hundreds of projects and curating over a half a million scientific observations submitted by citizen scientists. He is also research scientist at the Natural Resource Ecology Laboratory at Colorado State University and can be found identifying native plants throughout the Colorado Front Range as an avid naturalist. He is chair of the Citizen Science Association board of directors and advocates for open science and citizen science in the work in which he is engaged. His research focuses on studying the phenomenon of citizen science and crowdsourcing and his research interests include researching and co-creating citizen science support platforms and evaluating the effectiveness of citizen science platforms in improving community socio-ecological resilience.

Panelists:

Michelle Durant is a Wildlife Biologist and Volunteer Programs Coordinator for Boulder County Parks and Open Space. Michelle has worked for Boulder County for 8 years, and her primary interests involve understanding patterns in species distribution and abundance, habitat fragmentation, and leveraging technology to better understand ecosystems. She is charged with keeping track of the status and location of many species on open space, so she is most frequently asked questions that start with "when will it..." followed by "where will it...". She is able to answer these questions due to her own extensive field work efforts, and her coordination of a variety of volunteer monitoring programs, many in partnership with Boulder County Nature Association. She received her B.S. in Wildlife Biology from Colorado State University in 2002 and a Certificate of Geospatial Information Systems in 2011.