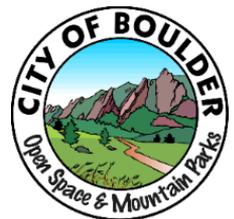


2019 Front Range Open Space Research Symposium

Friday, April 19th, 2019
8:30 a.m. - 4:30 p.m.

Lakewood Cultural Center
470 S. Allison Pkwy., Lakewood, CO 80226



AGENDA

8:30-9:00am	Registration (coffee, tea, and breakfast goodies)
9:00-9:15am	Welcome talk and announcements
9:15-9:20am	Speaker introductions
	James Dwyer , EDM International, Inc.
9:20-9:40am	<i>Three-dimensional viewshed-based assessment of potential disturbance to raptor nesting by rock climbing at Cathedral Spires, Highlander Crag, and Ralston Buttes (JCOS)</i>
	Kristofor Voss , Regis University
9:40-10:00am	<i>The necessity of high-quality habitat when you're living on the edge: a case study of the Hudsonian Emerald (BCPOS)</i>
	Janet Chu , Boulder County Research Naturalist Volunteer
10:00-10:20am	<i>Inventory of butterfly populations within communities in certain Boulder County open spaces (BCPOS)</i>
10:20-10:35am	Break
10:35-10:40am	Speaker introductions
	Rebecca Hufft , Denver Botanic Gardens
10:40-11:00am	<i>Assessment and monitoring of riparian conditions and stream health along Deer Creek (JCOS)</i>
	Audrey Boag , Independent Consulting Naturalist
11:00-11:20am	<i>Floristic inventory of a relictual habitat in Jefferson County (JCOS)</i>
	Derek Sebastian , Bayer Shannon Clark , CSU Steve Sauer , BCPOS
11:20-11:40am	<i>Long-term invasive winter annual grass control facilitates ecosystem, pollinator, and wildlife habitat restoration (JCOS/BCPOS)</i>
11:40am-1:00pm	LUNCH (on your own)

AGENDA (cont.)

1:00-1:05pm	Speaker introductions
	Camille Stevens-Rumann , CSU
1:05-1:25pm	<i>Forest vulnerability to disturbances and climate change (OSMP/BCPOS)</i>
	Paul Millhouser , Rocky Mountain Wild
1:25-1:45pm	<i>Habitat fragmentation analysis of Boulder County (BCPOS)</i>
	Deb Hummel , Lefthand Watershed Oversight Group
1:45-2:05pm	<i>Monitoring to determine effectiveness of post-flood restoration on the Left Hand Creek, Boulder County, Colorado (OSMP)</i>
2:05 -2:20pm	Break
2:20-2:25pm	Speaker introductions
	Jesse Gray , CSU
2:25-2:45pm	<i>Sensitivity of grass species with contrasting growth patterns to late-season water limitation and additions in a semi-arid grassland (OSMP)</i>
	Julie Larson , University of Colorado, Boulder
2:45-3:05pm	<i>What's in store? Using plant functional traits to understand changing vegetation and the role of underlying seedbanks (OSMP)</i>
	David Atekpazin Young , Only One, Inc.
3:05-3:25pm	<i>An assessment of the archeological, geographical, and oral and written historical findings regarding the presence of the Apache in Boulder, Colorado (OSMP)</i>
3:25-3:40pm	Closing remarks and evaluations
3:40-4:30pm	Networking session

PRESENTER BIOS AND ABSTRACTS

Dr. James Dwyer is an FAA-certificated commercial Unmanned Aircraft Systems (UAS) pilot, a Certified Wildlife Biologist, and an environmental scientist at EDM International, Inc. Dr. Dwyer specializes in UAS operations, raptor banding and research, and avian electrocution and collision risk assessments and mitigation for electric utilities throughout North America. He has published over 70 peer-reviewed scientific articles, served as an Associate Editor or peer-reviewer for over 70 more, and regularly volunteers his time as a Committee Chair for the Raptor Research Foundation.

Kris Voss is a freshwater ecologist who focuses on understanding the effects of human activities on the structure and function of freshwater ecosystems. After receiving a BS in Chemistry from Texas A&M University and an MS in Environmental Engineering from National University, he obtained a PhD from Duke University in Environmental Science with a focus on stream ecology and statistics. He uses aquatic macroinvertebrates, small organisms that spend most of their lives in freshwater ecosystems, as focal organisms to understand how freshwater organisms are threatened by land cover change and other human activities. In addition to wrangling critters in streams, Dr. Voss's work also involves developing and critiquing quantitative tools that ecosystem managers use to protect freshwater systems.

Janet Chu is co-author of the soon-to-be-published "Butterflies of the Colorado Front Range - A Photographic Guide to 100 Species" Second Edition, with Stephen Jones. She has conducted butterfly inventories on Boulder County Open Space properties for 15 years, following retirement from teaching high school Biology. Since 1983 she has organized the annual Fourth of July Butterfly Count at the Cal-Wood Education Center near Jamestown.

Dr. Rebecca Hufft is the Associate Director of Applied Conservation at Denver Botanic Gardens. She has been at the Gardens since 2011. Prior to coming to the Gardens, she received her PhD from the University of California Santa Cruz, was a postdoctoral researcher at Colorado State University, and was a scientist at the National Ecological Observatory Network.

Audrey Boag is a consulting naturalist with a background in engineering and an appreciation for careful research. Audrey has participated in a number of floristic and avian surveys in Jefferson and El Paso counties, and works as a personal interpretive guide for families seeking to learn about the plants and animals around them.

Dr. Derek Sebastian is the Bayer Vegetation Management Area Sales Manager for Colorado, Wyoming, and Montana. **Dr. Shannon Clark** recently completed her PhD with Dr. Scott Nissen at CSU. **Steve Sauer** is the Weed Control Supervisor with Boulder County Parks and Open Space.

Camille Stevens-Rumann is an assistant professor of fire ecology at Colorado State University. Her research primarily focuses on post-disturbance ecosystem recovery. She became interested in fire ecology after being a wildland fire fighter and now enjoys learning about these ecosystems after fires. She has worked in multiple areas of the US and worldwide with research in Washington, Idaho, Montana, Arizona, South Dakota, Spain, and of course Colorado.

Paul Millhouser is a landscape ecologist and GIS specialist for Rocky Mountain Wild, a Denver-based nonprofit focused on the conservation of federal lands in the Rockies. He expects to complete his Masters of Geographic Information Systems at Penn State this summer; his thesis considers the possible effects of habitat fragmentation and connectivity loss on elk populations in the Colorado Rockies. He has also worked on projects outside the U.S. using satellite imagery to document human encroachment on protected areas and habitat degradation due to climate change.

Deb Hummel is project coordinator for Lefthand Watershed Oversight Group (LWOG). She received her MS in Fisheries Biology and Management and a BS in Biology. Before joining LWOG, Deb worked on fish and wildlife habitat restoration and mitigation projects for listed species in Colorado and Oregon. Most recently, Deb researched fish use of habitat enhancement features in central New York. She has always loved recreating outside and learning about natural systems. As Project Coordinator, Deb coordinates various aspects of watershed science and stewardship projects from data collection and weed management to community engagement and education. Deb is passionate about watershed restoration efforts and working with the residential, recreational, and ecological communities of Left Hand Creek.

Jesse Gray is a Colorado State Ph.D. candidate from Salt Lake City, Utah, where he received his bachelor's in Biology, with an emphasis in organismal and environmental biology. He uses experimental approaches to study mechanisms resulting in plant species codominance in grassland ecosystems, and how such relationships may affect community assembly and ecosystem function using the model tallgrass species *Andropogon gerardii* and *Sorghastrum nutans*. Jesse is further interested in the effects that environmental factors such as warming,

drought, and increased variability in rainfall patterns will have on these mechanisms, and thus whether the stability of codominant relationships may be vulnerable to climate change.

Julie E. Larson is a doctoral student at the University of Colorado, Boulder Department of Ecology and Evolutionary Biology who has partnered with City of Boulder Open Space to investigate how local plant communities change over time and space. She is particularly interested in how seedbanks and plant recruitment play a role in community change (or stability). By understanding the mechanisms underlying species' and community responses to the environment, she hopes to help local agencies better prepare and manage for the future.

Mr. David Atekpatzin Young (Genízaro Apache) is an independent researcher, consultant, writer, artist, and musician. He has worked in radio, television and theatre. Mr. Young has done extensive research on the Indigenous peoples of Tehuayo, Indetah and Aztlán and their present-day descendants. He has also studied the relationship of ancient and contemporary Nahua religious practices. As a consultant, Mr. Young has provided program design, evaluation and training locally and nationally for 35 years. He has worked as an educator, prevention specialist, psychotherapist, mediator and traditional healer serving diverse populations. Mr. Young has had the distinguished honor of presenting workshops and trainings at local, national and international conferences. He has worked as a consultant to the Office of Minority Health, Bureau of Indian Affairs, U.S. Department of Agriculture, Center for Disease Control, National American Red Cross, Colorado Department of Public Health and Environment, University of Colorado Health Sciences Center, and Denver Public Health. He has lectured nationally (Yale University, University of Colorado, University of Washington, Metro State University, Colorado State University and Denver University) and internationally (Spain, Mexico, Canada, Puerto Rico and Belgium). Mr. Young is the recipient of the Martin Luther King, Jr. Scholarship award, a three-time recipient of the White Rose Scholarship Award and the Alexander Foundation Award. He also received the Cesar Chavez Peace and Justice Leadership Award and the Cesar Chavez Leadership Award for his contributions to the community.



Each year, Jeffco Open Space, City of Boulder Open Space and Mountain Parks, and Boulder County Parks and Open Space fund small research projects that help inform land management decisions and inspire coordination, collaboration, and partnership among scientists and the community. Grants are awarded to individuals or groups to conduct applied studies on our open spaces.

Additional information is available at the links below:

Jeffco Open Space Small Research Grants Program:

<https://www.jeffco.us/3384/Small-Research-Grants-Program>

City of Boulder Open Space and Mountain Parks Funded Research Program:

<https://bouldercolorado.gov/osmp/funded-research-program>

Boulder County Parks and Open Space Small Grants Program:

<https://www.bouldercounty.org/open-space/education/research/>

Thank you to our researchers, staff, and community members for supporting open space research!