BOULDER CLIMATE CHANGE WORKSHOP
At the National Center for Atmospheric Research
sponsored by
NOAA CLIMATE STEWARDS PROGRAM with the
UCAR CENTER FOR SCIENCE EDUCATION

WORKSHOP ORGANIZERS

Bruce Moravchik, NOAA, Climate Stewards (CSEP) Coordinator
Bruce Moravchik is an education specialist in NOAA’s National Ocean Service (NOS). He coordinates NOAA Climate Stewards, a national program to provide formal and informal educators with sustained professional development in climate and related sciences, and use collaborative online tools so they can help build a climate-literate public that is actively engaged in climate stewardship. He is also a primary developer of the NOS Education Web site, which conveys NOAA’s research, technology, and activities. He has worked with scientists and educators across NOAA to develop original content and problem-based learning initiatives. Prior to working at NOAA, Bruce established and ran a marine and environmental studies program at a high school in Rhode Island, working with teachers and students on coastal ecology, aquaculture, and habitat restoration. He has taught oceanography on board the tall ship Westward in the Caribbean for the Sea Education Association; studied the behavioral ecology of lobster and crab populations in Rhode Island and Maine; and conducted research in coral reef ecology in the Red Sea.

Teri Eastburn, UCAR Center for Science Education
Teri Eastburn is the digital learning technology manager, an instructional designer, and the lead of a new effort called UCARConnect. With the goal of increasing the connections between UCAR and its varied audiences, UCARConnect includes video, webinars, and educational resources and activities on science-relevant topics. For 14 years, she managed UCAR’s School and Public Programs, and was responsible for communicating climate change to many of NCAR’s 15,000 annual tour and field trip visitors. She ran her own multimedia company, taught formally in San Diego, CA and Boulder, CO. Currently, she is one of NOAA Climate Stewards’ peer advisors and enjoys helping participants foster engagement in formal and informal climate change-related action projects. Her background is in developmental and cognitive psychology, education, and multimedia design, with her MS thesis on communicating climate change.

Hilarie Davis, Technology for Learning Consortium
Dr. Hilarie Davis, President of TLC Inc. focuses on intensive, research-based evaluations of interactive materials, courses and learning environments. She has evaluated long-term projects in the use of technology, online environments, reading interventions, NASA-based materials with high needs students, Earth systems science for post-graduate educators, and environmental health for high school students. Hilarie specializes in collaborative evaluation that establishes feedback loops and examines the effects of interventions over time and in different contexts. She uses video as well as advanced qualitative and quantitative tools to provide insight into the nature and extent of effects. She has designed digital portfolios for after-school programs, literacy development, school change, and online courses. She has conducted professional evaluations for projects funded by NSF, NIEHS, NASA, NOAA, and USDOE, as well as universities and school systems. As a former middle school teacher, department head, and Director of Curriculum, Hilarie brings a strong practical background to understanding the context for educational change. Hilarie has worked with large national projects, such as the Earth System Education Alliance (IGES), the Science Mission Directorate forums (NASA), the Digital Learning Network (NASA K-12), and virtual environments such as INSPIRE (NASA), and PBLU (Buck Institute of Education). Dr. Davis received her Ed.D. from the University of Rochester in 1984 and their distinguished alumni award in 1986. She attended the State University of New York, receiving her B.A. in Philosophy in 1974, MS in Reading Education in 1976, CAS in Educational Administration in 1984. She has published on literacy, educational technology, curriculum design, evaluation, and teacher training methodology.
Brad Davey, Technology for Learning Consortium, Evaluation

Dr. Bradford Davey has developed expertise in online learning and environments through his own research on Communities of Practice for NASA Education and Public Outreach personnel, a five-year extensive evaluation of student learning in NASA’s INSPIRE online learning community, and adult learner e-portfolio design and implementation in Earth Systems Science. Currently, Brad is developing a full spectrum online learning program for principals as part of a project for RI State Department of Education with the New York Leadership Academy. Over the last decade, Brad has worked as an external evaluator on other NSF funded projects including IT Through Community-Based Natural Resources, NSF ITEST, University of Kentucky, Marsh Access, Meadowlands Environmental Center, IGES Earth Systems Science, Senior Environmental Education, Meadowlands Environmental Center, NSF Informal Education, and Targeted Investigations in Environmental Science, NSF among others. Brad specializes in data collection from electronic sources (web metrics, electronic surveys, value creation stories, virtual interviews) and has developed unique data collection techniques yielding powerful insight into participant experiences. While Brad’s experience is extensive, he continues to stay current through memberships in AERA, NSTA, ASCD, iNACOL, and USDLA while acting as a reviewer and contributor for the Journal of Online Learning and Teaching (JOTL).

SPEED DATING - BRAINS ON FIRE

Organizers have planned a “Speed Dating” opportunity between participants, climate scientists, and UCAR/NCAR and NOAA educators the morning of Thursday, June 25. Here is your opportunity to find out about the work of climate scientists, their challenges, your questions, as well as share your own experiences with climate change content, education, and/or communication. We encourage you to think about questions you have generally and/or specifically involving climate science or related topics such as climate communication, education, and even the participants’ views in regard to the role of science and scientists in the climate conundrum in which we find ourselves. And it need not be you asking all the questions. Hopefully, the scientists will be equally interested in what you are doing in your roles as educators, communicators, or simply citizens around climate change. Above all, make a few friends, learn something new, have fun, and enjoy of the opportunity.

Table One: MARIKA HOLLAND, Sea Ice, Polar Science, Modeling
Table Two: JOANIE KLEYPAS, Marine Ecosystems, Coral Reefs, Ocean Acidification
Table Three: JOHN FASULLO, Climate Change Variability, Modeling, Earth’s Energy Balance
Table Four: MELISSA BUKAVSKY, Climate Uncertainty, Regional modeling simulations & projections
Table Four: DANICA LOMBARDOZZI, Ozone impacts on the carbon and water cycles
Table Five: DAVID SCHNEIDER, Antarctica, Modeling, Paleoclimate
Table Five: LAURA LANDRUM, Impacts of an Ice Free Arctic, Sea Ice
Table Six: PETER LAWRENCE, Climate impacts and variability on the natural and built environment
Table Six: NAN ROSEN BLOOM, Paleo-climate
Table Seven: GREG HOLLAND, Regional Impacts, Hurricanes
Table Eight: AMY STEVEMER, Meteorologist, The COMET Program
Table Eight: RANDY RUSSELL, Educator, UCAR Center for Science Education
Table Nine: JULIE MALMBERG, Educator, The GLOBE Program
Table Nine: HILARY PEDDICORD, Educator, NOAA Educational Resources
UCAR AND NCAR WELCOMES

James (Jim) Hurrell, NCAR Director

Jim Hurrell is currently the Director of NCAR and is a Senior Scientist in the Climate and Global Dynamics Division (CGD). Jim formerly held positions as the director of the NCAR Earth System Laboratory, Chief Scientist of Community Climate Projects in CGD, and the Director of CGD. Jim’s research has centered on modeling studies and diagnostic analyses to better understand climate, climate variability and climate change. He has authored more than 85 peer-reviewed journal articles and book chapters and has given more than 130 professional invited and keynote talks. He is a Highly Cited Researcher, a Fellow of the American Geophysical Union, the American Meteorological Society, and the Royal Meteorological Society. Jim is the recipient of the AMS's prestigious Clarence Leroy Meisinger Award. Jim currently serves on the AMS Council as well as numerous other national and international scientific committees.

John Ristvey, Director, UCAR Center for Science Education (UCAR SciEd)

John Ristvey serves as the Director of the UCAR Center for Science Education and has done so for nearly two years. A Pennsylvanian with a background in biology, John taught in middle and high schools for a decade in Pennsylvania and Texas before joining Denver-based McREL International, a nonprofit that conducts research on learning technologies. He served as director of McREL’s Center for Learning Innovation and, before that, as a consultant for their education and public outreach team for fifteen years. Among his many projects, John led a three-year U.S. Department of Education project called “Cosmic Chemistry” – a two-week intensive summer program that employed science from NASA’s Genesis mission as a motivator to get high school students interested and prepared to take chemistry. But it was NCAR’s hefty pool of scientific and technical expertise at hand that lured John to UCAR. The ability to work directly with scientists in educational pursuits was a huge attractor as well as the caliber of science that surrounds him daily.

PRESENTERS

Greg Holland, Regional Climate Prediction Program Chair, NCAR

Greg Holland is Chair of the Regional Climate Prediction Program at the National Center for Atmospheric Research (NCAR) in Boulder, CO. He was previously Director of NCAR’s Earth System Laboratory. His current scientific research is focused on regional climate prediction, hurricanes and applications of extreme value theory. His career has included forecasting, teaching, research, and community service, including serving on a number of committees and review boards for NOAA, the National Academies and NASA, and chairing the Tropical Meteorological Program of WMO. He is also a Fellow of the American Meteorological Society and the Australian Meteorological and Oceanographic Society, and is a member of the WMO Expert Committee on Hurricanes and Climate Change. His publications have included major contributions to six textbooks and forecast manuals, together with over 100 peer-reviewed research papers. He served as lead author for the U.S. Climate Change Science Program report Weather and Climate Extremes in a Changing Climate. Outside of Science, Greg’s an avid bird watcher and photographer. He and another colleague also have their own vineyard and wine label, Trandari, in Australia.

Tim Scheitlin, NCAR Software Engineer, Visualization Laboratory

Tim is a software engineer at NCAR who creates striking computer visualizations of severe weather, climate change, wildfires, ocean temperatures, and other geoscience phenomena. With a degree in computer science from Iowa State, Tim has worked for Cray Research and Hewlett-Packard, but he’s been at NCAR working with graphics and visualizations for over 25 years. Tim is excited to explore new visualization technologies currently under development, particularly as techniques are unveiled that allow users to interact with data. He especially enjoys working in a research setting, especially at a place like NCAR with many talented and world-renowned scientists.
Lisa Gardiner, Formal Education Mgr., UCAR SciEd
Lisa Gardiner, Ph.D. M.F.A., leads K-12 curriculum development and teacher professional development at the UCAR Center for Science Education. Lisa is originally from Massachusetts and has lived in Colorado for 15 years. She holds a Doctorate in Geology from the University of Georgia where she studied carbonate stratigraphy and the fossil clams and snails that lived in Caribbean coral reefs about 120,000 years ago amidst sea level and climate change. Lisa also holds an M.F.A. in Creative Nonfiction Writing from Goucher College where she wrote about environmental science. She has worked in diverse education settings from universities to nature centers and farms.

Susan Sullivan, Director, CIRES Education & Outreach
Dr. Sullivan directs the Education and Outreach program of the Cooperative Institute for Research in Environmental Sciences (CIRES). CIRES focus areas include teacher professional development, developing broader impacts from geoscience research, project evaluation, and climate education. As past president of the National Association of Geoscience Teachers (NAGT), Dr. Sullivan is advancing support for the implementation of the Next Generation Science Standards in Earth and Space Science. She is Co-Investigator for the Climate Literacy and Energy Awareness Network collection of peer-reviewed climate and energy learning resources for middle through college level students. The CIRES EO group offers opportunities for learning about water resources, most recently through the “Water in the Western United States” online course on the Coursera platform.

Alexander MacDonald, NOAA, AMS President
Dr. Alexander “Sandy” MacDonald is Chief Science Advisor for NOAA’s Office of Oceanic and Atmospheric Research, and Director of the Earth System Research Laboratory (ESRL) in Boulder, Colorado. He currently also serves as the American Meteorological Society (AMS) president for 2015. He earned Bachelor of Science degrees in Mathematics and Physics from Montana State, before joining the U.S. Air Force as an officer, serving from 1967 to 1971. After the service, Dr. MacDonald earned both his Master of Science degree and Ph.D. in Meteorology from the University of Utah. He began his career with NOAA’s National Weather Service’s Western Region in 1973. His work in the White House with Vice President Al Gore to start GLOBE, an educational web-based program involving classrooms worldwide in atmospheric sciences, earned him the Distinguished Presidential Rank Award in 1998. In the new century, Dr. MacDonald also invented Science on a Sphere, which is installed in over 100 museums around the world.

Hilary Peddicord, NOAA Science on a Sphere, NOAA Education
Hilary Peddicord is a science educator for the National Oceanic and Atmospheric Administration. Her work supports the Science On a Sphere (SOS) program, which uses a massive globe and projection system to explain storms, climate change, and other atmospheric patterns installed in museums around the world. She runs professional development activities for science teachers, coordinates outreach activities for thousands of local students, and leads a group of SOS museum educators across the U.S. She is currently working on releasing a version of SOS for the classroom called SOS Explorer.
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
NOAA is a government agency under the US Department of Commerce based in Silver Springs, MD. Its employees are located throughout the US in various NOAA departments that focus on the oceans and the atmosphere including the National Weather Service, the National Ocean Service, and the National Satellite, Data, and Information Service among others. Its “fundamental” activities are fivefold: monitoring and observing Earth systems with instruments and data collection networks; understanding and describing Earth systems through research and analysis of that data; assessing and predicting the changes of these systems over time; engaging, advising, and informing the public and partner organizations with important information; and managing resources for the betterment of society, economy, and environment. Find out more at: www.noaa.gov

NATIONAL RENEWABLE ENERGY LABORATORY (NREL)
NREL’s 327-acre campus in Golden, Colorado, houses many research laboratories and the lab’s administrative office. With a commitment to sustainable operations, the main campus boasts several LEED-platinum rated buildings, along with multiple on-site renewable energy installations. Among its national centers are: the National Bioenergy Center, the National Center for Photovoltaics, and the National Wind Technology Center. It also houses 13 energy related programs and three collaborative research programs. Find out more at: www.nrel.gov

NATIONAL ICE CORE LABORATORY, US GEOLOGICAL SURVEY (USGS)
The National Ice Core Laboratory (NICL) is a National Science Foundation (NSF) facility for storing, curating, and studying meteoric ice cores recovered from the glaciated regions of the world. The ice cores are recovered and studied for a variety of scientific investigations, most of which focus on the reconstruction of past climate states of the Earth. By investigating past climate fluctuations, scientists hope to be able to understand the mechanisms by which climate change is accomplished, and in so doing, they hope to develop predictive capabilities for future climate change. Find out more at: www.icecores.org

NCAR WYOMING SUPERCOMPUTING CENTER
The NCAR-Wyoming Supercomputing Center (NWSC) provides advanced computing services to scientists studying a broad range of disciplines, including weather, climate, oceanography, air pollution, space weather, computational science, energy production, and carbon sequestration. It also houses a landmark data storage and archival facility that will hold, among other scientific data, unique historical climate records. Yellowstone is the name given to its supercomputer reaching calculation speeds over 1.5 petaflops per second (1,500 trillion bytes). It is the result of a partnership between UCAR, the State of Wyoming, the University of Wyoming, Cheyenne LEADS, Wyoming Business Council, and Cheyenne Light, Fuel & Power Company. The NWSC is operated by the National Center for Atmospheric Research (NCAR) under the sponsorship of the National Science Foundation. Find out more at: http://nwsc.ucar.edu
WORKSHOP PARTICIPANTS

JENI SYNDER ALCAKOVIC - MINNESOTA
It is Dr. Jeni Synder Alcakovic's honor to be part of the team at Capitol Hill Gifted and Talented Magnet School in St. Paul, MN. Over the past two decades she has been fortunate to teach students in many places including urban Philadelphia, suburban Chicago, Central & South America and the Middle East. She holds a Master's Degree in Teaching and Educational Leadership from the University of Pennsylvania, and earned a PhD in Organizational Leadership, Policy and Development at the University of Minnesota. Her dissertation topic was Wellness Policy Localization in Urban Public Schools.

CATHERINE BARNES - COLORADO
Catherine Barnes is an educator of informal STEM education, marketer and ergonomics consultant. She earned her BA in marketing from Miami University in Ohio, her MBA in international marketing and MA in educational psychology from the University of Colorado in Boulder, and her elementary education degree from the Friends School Teacher Education Program. Catherine was the director of sales and marketing for Micro Analysis and Design and oversaw product marketing for educational training for Sun Microsystems. For the past five years she has been a part-time teacher in the Boulder Valley School District while simultaneously working for the Applied Ergonomics Group supporting various research projects for custumers such as the FAA, Boeing, and the National Mining Association.

RAY BENSON - ALASKA
Ray Benson grew up in the Bighorns of Wyoming and received his degree from the University of Wyoming. His primary interests include music and science, both of which are a major part of his life story. He's married to an Alaskan structural engineer who also is a Wyoming grad. He has five children, and teaches math, science, art, and music in Bush, Alaska.

CHARLES CAMBRIDGE - COLORADO
Dr. Cambridge is a professional practicing archaeologist and has served as an adjunct faculty in several institutions of higher learning. He received his PhD, from the University of Colorado (CU) and is an enrolled member of the Navaho Tribe. He conceptualized the Solar Hogan in the 1960s. In 1989, he and Dennis Holloway, Architect, received international recognition for their experiments in appropriate technology and traditional architectural designs through the “Colorado Solar Hogan Project.” For twenty-plus years, he has led teams of American and International volunteers to help traditional native people with physical and traditional chores in the west, Hawaii, Canada and Belize, and has conducted research on the impact of aides on Native American tribes. He was a founding member of the Association of Mutant Anthropologists and Engineers Without Borders.

KRISTIN DEAN - COLORADO
Kristen Dean currently works at the Colorado State University Environmental Learning Center as an educational Program Coordinator. She received a B.S. in Biology from CSU in May 2011, and has worked in the field of environmental education ever since. Her role at the Environmental Learning Center includes working with undergraduate student staff on the planning and execution of programs, coordinating programs and partnerships, ensuring program quality, and doing a bit of teaching. In her free time, Kristen loves to explore the mountains near Fort Collins, CO.
HOWARD DIMMICK - COLORADO
I taught Earth and Life Science at Stoneham High School in MA for 38 years. After retirement, I have spent the past ten years as the Editor of the Massachusetts Marine Educators quarterly journal, Flotsam and Jetsam. I have also been a NASA Solar System Ambassador and last summer I participated in a program at Monterey Bay Aquarium Research Institute in California where we worked on writing curriculum activities in marine science for use in public school classes.

KARINA DOYLE - COLORADO
I have been teaching high school Social Studies for 16 years. I’ve taught for 8 years in the classroom and 8 years to online high school students, in addition to writing online course content for online students in the Boulder Valley School District in Boulder, Colorado. My specific interest in climate change is how to address the issues as they relate to the Social Studies -- Economics, Government, Geography, Psychology, and History. My efforts are not only to teach the students in my classroom, but to teach other teachers how to incorporate climate change lessons into their Social Studies classrooms.

DAVID FALICK - MASSACHUSETTS
David is a professor of American English at Montgomery College in Rockville, Maryland where he is an ESL teacher with a great life-long interest in protecting the environment. He teaches climate change in his reading and ESL classes and is active in environmental issues. This past March he went with the Sierra Club to Annapolis to lobby for a moratorium on hydraulic fracturing. It passed and Maryland now has a two-year moratorium. He is also involved in environmental protection in other ways and in other issues.

KELLY GALLO - UTAH
Kelly Gallo is a new addition to the Hogle Zoo Education Department as a Public Programs Coordinator in Salt Lake City, UT. With a degree in Elementary Education, Kelly has taught Environmental Education and STEM in charter schools in Utah for 10 years. Prior to that she acted as an Environmental Education Specialist for Pennsylvania Department of Conservation and Natural Resources, Bureau of State Parks.

LINDA SCHOEN GIDDINGS - NEW MEXICO
Linda Schoen Giddings received her Ed.D. in Educational Leadership from Hofstra University, her MA and MS from Adelphi and Hebrew University, and her BS in biology from City College of New York. She has lived in NY most of her life, but moved to South Carolina in 1998 and to Santa Fe, NM in 2013. During her years teaching, she has been an assistant principal, science specialist and teacher mentor. She serves on the Board of Directors for the Council of State Science Supervisors, and is active in NSTA and ASCD. She is active in many community organizations and activities and has 3 children and 3 grandchildren in the Denver area.

STEVE HANFORD - COLORADO
Steve grew up in Colorado and while he has had the opportunity to travel some, Colorado will always be home to him. His enjoyment of the outdoors is what draws him to Colorado and it is what peaks his interest in climate. Playing and working in Colorado you understand how important the snow pack is to the area. Steve is currently a science teacher at Platte Canyon High School. This was his first year teaching high school after 6 years teaching middle school science.
KRISTINA JOBE - COLORADO
Kristy Jobe is originally from Tennessee, but Colorado has been her home for the past five years. With a B.S. in Biology, she spent seven years as an environmental educator. She worked at Land Between The Lakes in western Kentucky, National Wild Turkey Federation's Winchester Museum in South Carolina, and Cal-Wood Education Center in Colorado as well. Kristy completed the Friends School Teacher Preparation Program in 2013. During the program, she spent the year co-teaching alongside the 5th and 6th grade teachers at Alexander Dawson School. She currently teaches at Flagstaff Academy where she spent the last two years teaching kindergarten. This next year she will be joining the 4th grade team. In her free time, she enjoys cooking, being outdoors hiking, and kickboxing.

MAGGIE KANE - COLORADO
Maggie Kane has been interested in the arctic and climate science since the early ’80s, performing geologic field work in Alaska, on Baffin Island and in Svalbard. Selected as a PolarTREC teacher in 2006, Maggie was able to “bring the arctic back” to her 7th grade students at Mile High Middle School and the community of Prescott, AZ. Maggie has presented her work at American Geophysical Union, Geologic Society of America, the Arctic Workshop, and the Canadian Circumpolar Institute. Currently the Academic Dean at Lake County High School in Leadville, CO, she continues her passionate work to connect her teachers with researchers to bring high level science to students.

STEVE LANE - MASSACHUSETTS
Stephen Lane teaches high school economics and history at Concord-Carlisle High School in Concord, MA. In addition, he co-created and co-taught (with fellow participant Jeff Yuhas) a seminar on the economics, policy, and science of climate change, with a focus on pathways to meaningful action. This seminar has been taught in a variety of ways: as an independent study for a handful of students, as a special seminar involving students from four area high schools, and as a distance collaboration using social media with students from a high school in New Jersey. Mr. Lane and Mr. Yuhas, along with several of their high school students, presented their approach to teaching about climate change at the annual AMS meeting. In addition, the seminar spawned a one-semester project in which students interviewed actors in various sectors with important influence on the climate change debate: Congressional staffers, non-profit activists, financial analysts, and energy industry executives.

KO A LAVEY - CALIFORNIA
Koa recently moved to San Diego to be closer to family and teach science. Prior to moving to San Diego, he was working on a masters in Natural Resources (using remote sensing to determine relation between fog and streamflow in old growth Redwood Forest, which he hopes to defend this August), earning a teaching credential, doing geographic information sciences for Redwood National Park and developing a plan to change dam releases to help salmon runs. He loves trail running, composting, cooking, tinkering, exploring and learning about people and Earth.

DAVID MCGILL - MINNESOTA
David McGill teaches grade school science in St. Paul Minnesota at Capitol Hill Gifted and Talented Magnet School. (The kids not the teachers.) He is interested in the history of science and has traveled once to Egypt and once to Greece researching Eratosthenes’ measurement of the earth’s circumference and the Antikythera mechanism respectively. This summer he will be traveling to Greenland and the high Arctic to walk the ice cap and observe the effects of warming. In his spare time, David plays trumpet in the Blue Waters Brass Ensemble and the Canon Choir of Brass.
BECKY MENLOVE - UTAH
Becky Menlove is Associate Director for the Visitor Experience at the Natural History Museum of Utah in Salt Lake City where she oversaw development, design and construction of ten permanent exhibits and indoor and outdoor public spaces at the Rio Tinto Center, which opened in November 2011. Overarching themes in the Museum include ecology, evolution, biodiversity, and energy flow, all with a distinctly Utah focus. Richly immersive spaces, intra- and intergenerational hands-on experiences, extensive interpretation of the Museum’s collections, and accessible science and humanities content are hallmarks of the permanent exhibits. In her current position, Menlove oversees the exhibits, public programs, and school programs departments. Formerly a professional weaver, Becky first joined the NHMU staff as textile lab supervisor from 1984 to 1992, and has been involved in museum work since then. She has worked as a curatorial assistant at the University of Wyoming Art Museum, interned at the Whitney Gallery of Western Art, and was a member of the curatorial team responsible for reinstallation of the Plains Indian Museum in Cody, Wyoming. In 2000, she returned to the Natural History Museum of Utah to oversee exhibit development.

BRIDGET MOLLOY - COLORADO
Bridget Molloy directs and teaches the HS science program at La Academia for the Denver Inner City Parish, and is a NOAA Climate Stewards Advisor. She is a graduate from Boston University’s MA Teaching program for Science Education, during which she earned a graduate certificate in Global Ecology Education and completed an internship with the New England Aquarium in curriculum development on ocean acidification and coral symbiosis. Bridget received her BA in both molecular biology and evolutionary biology from the University of Colorado. Her work focuses on the relationship between the health of our environment and human health through the lens of climate change and botanical medicine. She is the founder of Bridget’s Botanicals, LLC. A global traveler, this summer Bridget’s next exploration will be to the Amazon to further study biodiversity and the effects of climate change.

MARGARET MOONEY - WISCONSIN
Margaret Mooney is the Education and Public Outreach lead at the Cooperative Institute for Meteorological Satellite Studies (CIMSS) in Madison Wisconsin. As a former National Weather Service meteorologist, Margaret leverages her early career experience with a recent degree in public policy to promote weather and climate education as avenues towards stewardship and sustainability. She is active in several education communities, including NOAA Climate Stewards, NASA Initiatives in Climate Education, the GOES-R Education Proving Ground, the UW Science Alliance, the Earth Science Information Partners (ESIP), and the Wisconsin Initiative for Climate Change Impacts (WICCI).

BARBARA NELSON - COLORADO
Barbara is a volunteer naturalist for the City of Boulder Open Space and Mountain Parks (OSMP) and a vision therapist. For OSMP, she works with students in the classroom and on the trails. Topics covered include conservation, plants, insects, animals and the relationships between them. For 29 years she taught math and science. She lives in Boulder, Colorado not far from NOAA and NCAR.
HILARY PEDDICORD - COLORADO
Find information about Hilary under "Presenters."

LAURA RARIG - WASHINGTON
National Board Certified Teacher with seven years experience teaching middle school science. Bachelors in Biology and Masters in Biology education from Washington State University. I teach in the community where I grew up, sandwiched between the Olympic mountains and Mt. Rainer. I have previously worked as an international education consultant for non-profit organizations, as a barista, as a rock climbing instructor, and as a molecular plant physiologist. I am passionate about students developing problem-solving skills, and enjoy every year of teaching.

CHRISTINE SCHMITZ - UTAH
Chris Schmitz became the Education Curator at Utah's Hogle Zoo in March of 2006. She is responsible for directing, coordinating and implementing the educational activities at the Zoo including the exhibit signage and interpretation, volunteer program, eco-explorer program, internship program and the on-and off-site education classes and programming. She is a NOAA Climate Steward, Utah Master Naturalist, NAI Certified Interpretive Guide and a Polar Bears International Ambassador. She holds a Master's Degree in Curriculum and Instruction from Portland State University and Bachelor’s Degrees in Biology and in British American Literature from Scripps College.

ERIN SHEA-BOWER - COLORADO
Erin teaches 5th grade in Boulder where she has lived for more than half a decade. She is a published author, having written over 600 educational and parenting articles, as well as poetry. She was recently awarded the honor of being nominated twice for the Presidential Award for Excellence in Teaching Science and Mathematics. Presently she is completing a Master's from CU in Educational Equity and Cultural Diversity.

SANNA THOMAS - CALIFORNIA
A native of Louisiana and transplant to New Jersey and the Bay area, Sanna has worked almost 50 years in education, youth development, and community service. She holds a B.A in Government and French from Smith College, an MPA from Harvard's Kennedy School of Government, and an Ed.D from the Harvard Graduate School of Education. She was extensively involved in the New York City Outward Bound Center, the first urban-based Outward Bound program in the nation. Her educational programs inspired the development of Outward Bound's Expeditionary Learning school reform model. Sanna consequently served on the national design team that created a framework for the establishment of Expeditionary Learning schools nation-wide. Once based in the Bay area, she led the Autodesk Foundation's professional development programs and national conference for teachers on project-based learning. She is and has been involved in many climate change education related efforts including the Climate Reality Project begun by former Vice President Al Gore. She is also supporting the collaborative curriculum design work of former colleagues at New York City Outward Bound Schools that positions climate change as the over-arching theme and organizing focus for multi-disciplinary curricula and, at the same time, incorporates the core values and practices of Outward Bound and Expeditionary Learning.
CARLIE TROTT - COLORADO
Carlie D. Trott, M.S. is a doctoral candidate in Applied Social Psychology at Colorado State University. Her research examines issues of equality, social justice, and social change, with a focus on gender and the environment. Over the past five years, she has taught small and large, laboratory and lecture courses at CSU, including Psychology of Gender and Research Methods in Social Psychology. She currently works at CSU’s STEM Center as a research and evaluation assistant, while developing her dissertation project on youth participation in climate action. She is presently a NOAA Climate Steward.

KATE MUIR WELSH - WYOMING
Kate Muir Welsh is a science educator with over twenty-five years (10 of them at experience in both formal and informal education settings.) Her primary research agenda and published work to date focuses on equity, access, and social justice in education in general with an emphasis on science education. Welsh served as a member of the UW Shepard Symposium planning committee for seven years, chairing the committee from 2007-2010. During the 2010-11 academic year, Kate spent her UW sabbatical at Teton Science Schools working in the shadow of the Grand Tetons with graduate students and faculty. Currently she is an Associate Professor in the Elementary and Early education department. Her teaching includes course work in math/science methods, place-based education, and diversity. In January 2012, Kate was named the 2nd director of UW’s Social Justice Research Center. In August 2013, Kate started as Department Chair for Secondary Education. Kate works with teachers in the areas of place-based education, social justice, and math/science.

DEANNA WHEELER - MARYLAND
Passionate about land and water, Deanna Wheeler is inspired to make sure that “no child is left inside.” Hands on, real science is her priority. From hatching, raising, and releasing yellow perch and horseshoe crabs to participating in a pilot sturgeon project, her students discover how connected they are to the world around them. Her love of learning and the outdoors meld together in her professional and personal life. She is dedicated as a teacher and as citizen to better understand and protect the environment for positive impacts on individuals, the community, and the environment itself. In 2009 and 2012, Deanna was selected to participate as a PolarTrec teacher on an ice breaker in the Bering and Chukchi Seas. She teaches science at J.C. Parks Elementary School in Indian Head, Maryland, a 2015 US Department of Education Green Ribbon School. She participates in the NOAA Climate Steward program.

JEFFREY YUHAS - NEW JERSEY
Jeff, currently at the Morristown-Beard School in New Jersey, has been teaching high school Physics, Earth Science, Meteorology, and Environmental Science for 18 years and public and private schools. Since 2011 he has been collaborating with Steve Lane of Concord-Carlisle (MA) High School on their Climate Consortium, an effort to combine the science of climate change with the economics and political reality of formulating change. A member of the American Meteorological Society, Jeff if on the Board of Outreach and Pre-College Education, the Local Chapter Affairs Committee, and the Education Symposium Planning Committee. Since 2010 he has been bringing his high school students to present at the AMS Annual Meeting.