



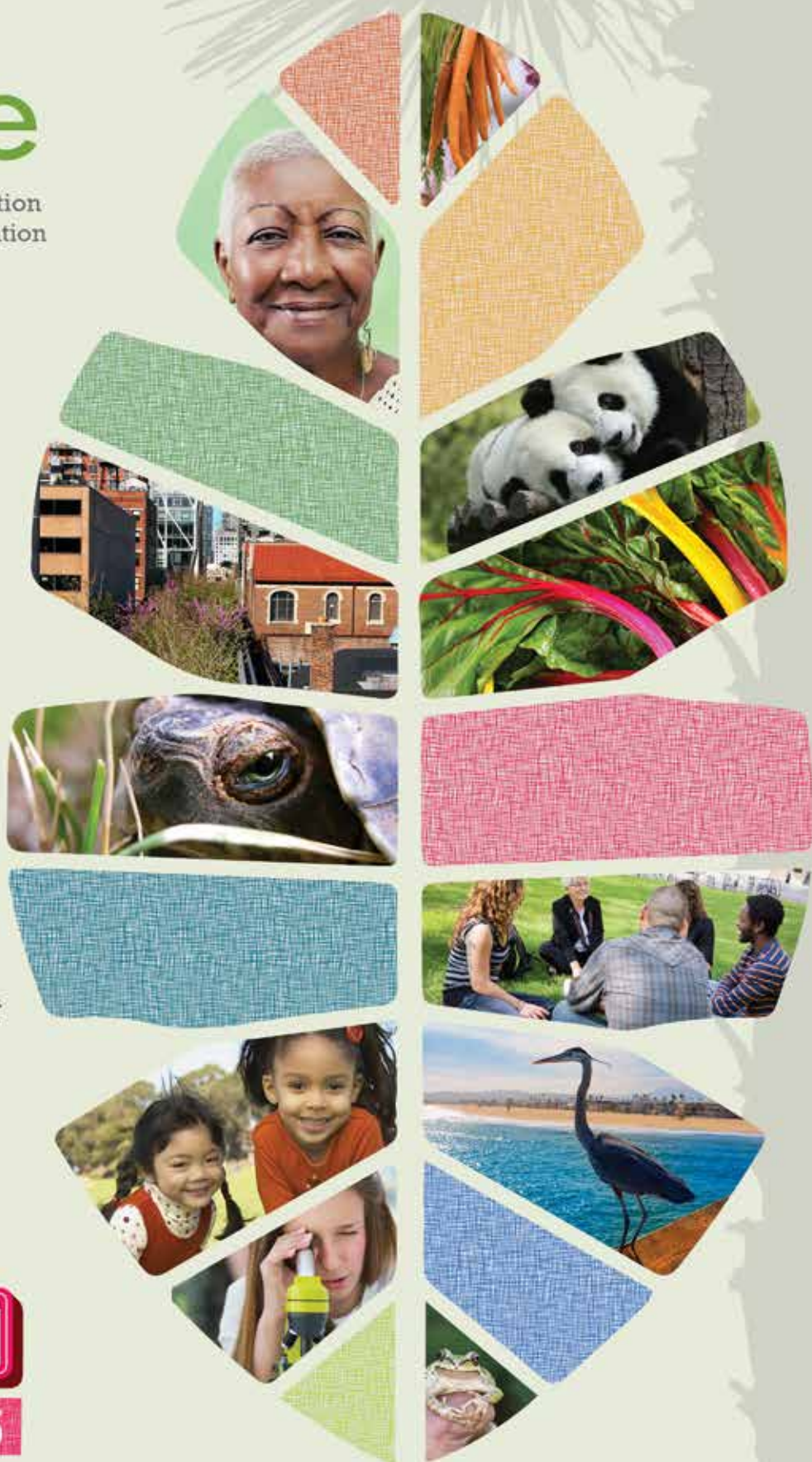
naaee

North American Association
for Environmental Education

**12TH ANNUAL
RESEARCH
SYMPOSIUM**
October 14-15

*Building a Stronger and
More Inclusive Movement*

SAN DIEGO
2015





naaee

North American Association
for Environmental Education

SAN DIEGO

2015

**12TH ANNUAL
RESEARCH
SYMPOSIUM**
October 14-15

Welcome

Dear Friends and Colleagues:

**Welcome to the 12th Annual NAAEE Research
Symposium in sunny San Diego.**

Unlike traditional conferences focused on presentations, our Symposium offers an ideal venue to gather as a community for thoughtful and extended dialogue about EE research and linkages to practice. Over the next two days, we can explore new ideas and approaches, ponder perplexing problems, and cultivate collaborations through facilitated discussions, posters, workshops and informal hallway chats. As you attend these sessions, we challenge you to consider how emerging issues, solutions, methods, and theories can inform current and future EE research, and we look forward to hearing your reflections during our closing plenary.

Yours respectfully,

Cathlyn (Cat) Stylinski

Chair
NAAEE Research Special Interest
Group and Research Symposium

Ruth Kermish-Allen

Chair Elect
NAAEE Research Special Interest
Group and Research Symposium

Tuesday, October 13 (Special Events)



Researching Engagement at the San Diego Zoo: A Field Session

1:00 PM–5:00 PM, San Diego Zoo

Consider the opportunities and constraints of outdoor settings during this field experience at the San Diego Zoo. Discuss approaches appropriate to this and similar sites. Explore the zoo in small groups to develop research questions and approaches, consider data collection methods, and develop collaborations. Reconvene to generate ideas about transferring research practices across learning settings.

(Pre-registration required)

Presenters: Joe E. Heimlich, Lifelong Learning Group/COSI
Nicole Ardoin, Stanford University



Research Symposium Informal Dinner

6:00 PM, Selected restaurants

A casual evening of food, fun, and conversation focused on EE research. Diners will include co-leaders of the Research Symposium's San Diego Zoo Field Session, as well as its current Chairs.

Attendees must cover their own transportation and meal. Check list at registration desk for assigned restaurant locations. (Pre-registration required)



NAAEE extends a warm welcome to the members of the Global Environmental Education Partnership and all of our international participants.



Sharing ideas that create a more just and sustainable future through the power of environmental education

Schedule at a Glance

Wednesday, October 14

8:30 AM–9:00 AM	Poster Set-Up	Grande Foyer
9:00 AM–9:15 AM	Welcome & Introductions Cathlyn Stylinski and Ruth Kermish-Allen	Grande Ballroom C
9:15 AM–10:30 AM	Opening Keynote <i>The Importance of the Incidental: Environmental Learning in Everyday Life</i> Nicole Ardoin and Joe Heimlich	Grande Ballroom C
10:30 AM–10:45 AM	BREAK	
10:45 AM–11:45 AM	Posters I	Grande Foyer
11:45 AM–12:00 PM	BREAK	
12:00 PM–1:00 PM	LUNCH	Bayview Lawn
1:00 PM–1:15 PM	BREAK	
1:15 PM–1:45 PM	30-Minute Facilitated Discussions (one per room) Marina 1, Marina 3, Marina 4, Spinnaker 1, Spinnaker 2	
	Roundtables (three concurrent)	Marina 2
1:45 PM–2:00 PM	BREAK	
2:00 PM–2:30 PM	30-Minute Facilitated Discussions (one per room) Marina 1, Marina 3, Marina 4, Spinnaker 1, Spinnaker 2	
	Roundtables (three concurrent)	Marina 2
2:30 PM–2:45 PM	BREAK	
2:45 PM–3:45 PM	Posters II	Grande Foyer
3:45 PM–4:00 PM	BREAK	
4:00 PM–6:00 PM	Reception	Grande Foyer



Be sure to connect to NAAEE on Twitter and get the latest conference updates @NAAEEstaff



Follow us on Instagram @NAAEEstaff for photos from the conference. Tag your photos and posts with #NAAEE2015 to see them displayed throughout the conference!



Join our Facebook network and stay connected to trending EE information and events!



To use the conference mobile app, scan the QR code on the back of the program or download the CrowdCompass Directory from your app store and search for "NAAEE".

Schedule at a Glance

Thursday, October 15

7:30 AM–9:00 AM	Graduate Student & Early-Career Faculty Breakfast	Grande Ballroom C
9:00 AM–9:30 AM	30-Minute Facilitated Discussions (one per room) Marina 1, Marina 3, Marina 4, Spinnaker 1	
	Roundtables (two concurrent)	Marina 2
	Skill-Building Workshop	Spinnaker 2
9:30 AM–9:45 AM	BREAK	
9:45 AM–10:15 AM	30-Minute Facilitated Discussions (one per room) Marina 1, Marina 3, Marina 4, Spinnaker 1	
	Roundtables (three concurrent)	Marina 2
	Skill-Building Workshop	Spinnaker 2
10:15 AM–10:30 PM	BREAK	
10:30 AM–12:00 PM	90-Minute Workshops (one per room) Marina 1, Marina 3, Marina 4	
	Skill-Building Workshop	Spinnaker 1
12:00 PM–12:15 PM	BREAK	
12:15 PM–1:15 PM	LUNCH	Nautilus 3
1:15 PM–1:30 PM	BREAK	
1:30 PM–3:00 PM	90-Minute Workshops (one per room) Marina 3, Marina 4	
	Skill-Building Workshop	Marina 1
3:00 PM–3:15 PM	BREAK	
3:15 PM–4:45 PM	Closing Plenary <i>Reflections on Emerging Issues, Solutions, Methods and Theories in EE Research</i> Cathlyn Stylinski and Ruth Kermish-Allen with 2015 NAAEE Research Award recipient Alan Reid and a panel of early-career and established EE researchers	Grande Ballroom C



Opening Keynote

The Importance of the Incidental: Environmental Learning in Everyday Life

SAN DIEGO
2015

Nicole Ardoin, Joe Heimlich

Most environmental learning occurs outside the formal school system, in the course of everyday life. Such learning happens across experiences (life-wide), continually and inconsistently through a person's life (life-long), and occasionally striking a chord of interest and greater exploration (life-deep). To understand this life-wide, life-long, and life-deep learning, it is important to contextualize the learning in the situation of a person's complex being.

This keynote will consider the conditions in which individuals enter informal, non-formal, and incidental environmental learning opportunities. One focus will explore the range of mundane-to-unusual in a person's life: the rich combination of ordinary and extraordinary circumstances that comprise our lives and, accordingly, our learning experiences. Our second focus will explore the concept of learningscapes: the combination of social roles and ways that individuals engage in institutions, structures, society, recreation, and so on. We will discuss the strengths of and challenges to learningscapes as a framework for understanding environmental learning and explore opportunities for environmental education based on environmental learningscapes.

Through presentation, discussion, and small groups, we will draw on learning and behavior theory—as well as practice in environmental education and related fields—to examine notions of environmental learning across everyday life.



Nicole Ardoin, Phd, is an assistant professor in the Stanford University Graduate School of Education and Woods Institute for the Environment. Her research interests include relationships between environmental learning and behavior, particularly as influenced by place-based connections.



Joe Heimlich, Phd, principal researcher at the Lifelong Learning Group and professor emeritus at The Ohio State University, focuses on environmental education and evaluation in informal settings—particularly museums, zoos, and aquariums—and across the learningscape.

Wednesday

10:45 AM–11:45 AM

Posters I Grande Foyer



Contrasting Yellowstone (USA) and Altai (Russian Federation) Ecological Knowledge Systems

10:45 AM to 11:45 AM Grande Foyer

This poster session reports the results of the Montana State University summer 2014 research expedition. Students research focused on Indigenous knowledge related to sacred sites, plant use, climate change, and land use management. Results are interpreted in terms of Ethnocultural Pedagogical Content Knowledge (EPCK).

Presenter: Michael Brody, Montana State University

Creating Contexts for Teaching for Sustainability

10:45 AM to 11:45 AM, Grande Foyer

The education sector is being called upon to prepare learners to address complex environmental challenges. But do educators feel sufficiently confident, knowledgeable, and empowered to do this? How does the identity of an educator impact their ability to implement sustainability learning programs? In this presentation we will share our exploration of these issues.

Presenter: Natalie Swayze, University of Winnipeg

Critical Environmental Agency in Field Ecology Programs

10:45 AM to 11:45 AM, Grande Foyer

Critical environmental agency (CEA) is an emerging framework, which combines science education and EE constructs to explore participants' agency, identity work, and critical consciousness of place. Using qualitative methodologies, I explored how CEA was enabled for diverse high school youth (n=16), who participated in a summer field ecology program.

Presenter: Lacey Denise Huffling, Georgia Southern University

Designing and Assessing Climate Justice Education: Spectrum of Inclusive Resilience

10:45 AM to 11:45 AM, Grande Foyer

Developed by meta-synthesis and refined by multi-case application, this research offers a three-tier spectrum to assess and design for depth of implementation of transformative climate justice approaches in curricula and projects, to avoid greenwashing and move more deeply towards social transformation, community-based action, inclusion, and resilience in environmental education.

Presenter: Marna Hauk, Institute for Earth Regenerative Studies & Prescott College

Education Outside: An Urban District School Garden Education Implementation Study

10:45 AM to 11:45 AM, Grande Foyer

This poster shares findings from an implementation study of The Corps for Education Outside, which places young professionals in San Francisco elementary schools to teach lessons in outdoor school garden classrooms. We present successes and challenges of the program model and implications for program design and implementation in various contexts.

Presenters: Bernadette Chi, University of California–Berkeley; Valeria Romero, University of California–Berkeley; Lisa Newton, University of California–Berkeley

Environmental PBL for Professional Development

10:45 AM to 11:45 AM, Grande Foyer

Environmental problem-based learning is a promising method for developing environmental literacy. It uses complex issues, has no “correct” result, and brings multiple viewpoints together. This poster describes a hybrid PBL professional development program that combined formal and informal educators to learn about non-point pollution and the program's impact on environmental literacy.

Presenter: Roberta Hunter, Rutgers University

Evaluation Tools to Measure Learning Outcomes in Informal Settings

10:45 AM to 11:45 AM, Grande Foyer

This poster describes the development of a theoretical framework along with valid and reliable tools to measure science and environmental learning outcomes in informal settings. We will seek input from attendees about their programs and demonstrate how the tools can be accessed and customized to meet their programmatic needs.

Presenter: Tina Phillips, Cornell Lab of Ornithology

Extending the Engagement: An Action Research Project on Forestry Education

10:45 AM to 11:45 AM, Grande Foyer

Some states provide multi-day professional development programs centered around teacher natural resource education; with forestry being a large focus. As part of an action research project at Lesley University, 17 programs across the United States were surveyed. This poster discusses the results and offers suggestions for future programming.

Presenter: Renee Strnad, North Carolina State University

From Curiosity to Conservation: Synergistic EE and Youth Citizen Science

10:45 AM to 11:45 AM, Grande Foyer

What essential components of citizen science programs produce sound scientific data and positive youth development? How can educators and scientists incorporate those components in environmental education and citizen science programs for youth? This study explored how synergistic citizen science programs might increase scientific data collected while engaging youth in conservation.

Presenters: Janet Ady, U.S. Fish and Wildlife Service; Michelle Donlan, U.S. Fish and Wildlife Service

Hooking Reluctant Science Learners: A Four Year Study of E-PBL

10:45 AM to 11:45 AM, Grande Foyer

This poster presents the challenges faced and solutions implemented by a new high school teacher in engaging her reluctant science learners with Environmental Issue Investigations. Digital stories and an authentic audience were the most effective hooks for students, and aggressive teacher professional development imparted teacher confidence for inquiry project uncertainties.

Presenter: Brian Joseph Plankis, Indiana University–Purdue University Indianapolis

How Does Interest Affect Learning About Climate Change?

10:45 AM to 11:45 AM, Grande Foyer

How does students' interest in environmental topics develop, and how might it affect their learning about these topics? Let's discuss these questions within the context of a study that modeled the relationships between these and related factors before and after a climate change education intervention.

Presenter: Jennifer Carman, University of Michigan

Influences on Winnebago Children's Nature Knowledge and Environmental Moral Reasoning

10:45 AM to 11:45 AM, Grande Foyer

This study identifies influences on preschool-aged children's knowledge about nature, affinity for nature, and environmental moral reasoning. Parents completed a survey and participated in a focus group, and children completed a structured interview. The study examined associations between parents' affiliation for and attitudes toward nature, and children's affiliation and empathy for nature and environmental moral reasoning.

Presenter: Whitney Drahota, University of Nebraska–Lincoln

Mapping the Diversity Divide in EE

10:45 AM to 11:45 AM, Grande Foyer

Environmental education (EE) organizations struggle to recruit and retain people of color (POC) as active members. This research investigates possible explanations through interviews with POC who work in EE but are not active in EE organizations. Implications for solutions and EE organizational changes required to engage POC will be discussed.

Presenters: Shelby Gull Laird, Stephen F. Austin State University; Timia D. Thompson, Riverbanks Zoo & Garden



Measuring Systems Thinking Skills

10:45 AM to 11:45 AM, Grande Foyer

This poster will review the findings of a study designed to measure systems thinking skills in high school students. Quantitative and qualitative methods were employed to decipher the level of systems thinking ability in students after receiving instruction based on forest and climate systems. Results and implications will be discussed.

Presenters: Tracey Ann Ritchie, University of Florida; Martha Monroe, University of Florida

Reconceptualizing Psychosocial Development in Children: An Environmental Identity Development Model

10:45 AM to 11:45 AM, Grande Foyer

This poster presents an Environmental Identity Development (EID) model, which considers the progression of children's sense of self in relation to the natural world. Beginning with trust in nature, children progress by achieving spatial autonomy and environmental competencies that stimulate environmental actions. EID provides a fresh lens for interpreting EE research and practice.

Presenter: Carie Green, Univeristy of Alaska Fairbanks



What Do Preschool Children Know About Nature? A Qualitative Analysis

10:45 AM to 11:45 AM, Grande Foyer

This study involves a qualitative analysis of naturalistic observations of preschool children in a nature-based center and the knowledge they demonstrate about nature through interactions with peers and adults. This research focuses on two domains for environmental learning: development of environmental understandings, and skills for understanding the environment.

Presenter: Julia Torquati, University of Nebraska–Lincoln

Youth and the Sea: Ocean Literacy in Nova Scotia, Canada

10:45 AM to 11:45 AM, Grande Foyer

A survey and quiz were used to investigate "ocean literacy" of coastal Canadian youth. The results suggest a clear knowledge gap within ocean sciences, yet an encouraging degree of interest in the oceans. Correlations were found between students' knowledge level, interaction with the ocean, and value for the sea.

Presenter: Haley Guest, Dalhousie University

1:15 PM–1:45 PM

Facilitated Discussions

Assessing Environmental Literacy Quantitatively and Qualitatively

1:15 PM to 1:45 PM, Spinnaker 1

Environmental literacy is a complex concept, with multiple components, each with multiple avenues of assessment. This discussion will focus on both quantitative and qualitative methods, anchored by the facilitators' research approaches. Topics will include which approaches can be used with different components, and theoretical arguments for and against each approach.

Presenter: Roberta Hunter, Rutgers University

Beyond Behaviorist Environmental Education Research

1:15 PM to 1:45 PM, Marina 1

Moving beyond the base of behaviorist research in the Environmental Education field, we can expand our understandings using a Cultural-Historical Activity Theory (CHAT) analysis framework in interpretivist descriptive case studies of elementary school teachers' meanings of learning through partnering with a local Arboretum to teach citizen science in their schoolyards.

Presenter: Aerin Benavides, Immersion for Language Spanish Acquisition

Case Studies of Innovative Hubs for Environmental Learning and Behavior

1:15 PM–1:45 PM, Marina 3

A bookmobile-like interpretive center, a farmer's market in a low-income neighborhood, a campus Commute Club, a sustainable seafood program: We will share case studies of these hubs of environmental learning and behavior and facilitate a discussion of where others may see a similar nexus in community or online settings.

Presenters: Nicole Ardoin, Stanford University; Rachelle Gould, Stanford University; Jennifer Thomsen, Stanford University

Improving "My Environmental Education Evaluation Resource Assistant"

1:15 PM to 1:45 PM, Spinnaker 2

My Environmental Education Evaluation Resource Assistant (www.meera.snre.umich.edu) has served the evaluation needs of over 370,000 environmental educators from over 200 countries. MEERA's evaluation showed that it can support environmental educators' evaluations but also revealed limitations. Let's discuss ways to improve the site to better meet environmental educators' and researchers' needs.

Presenter: Michaela Zint, University of Michigan

Research in the Context of Discovery: How is it Different?

1:15 PM to 1:45 PM, Marina 4

Educational research often aims at justification, or proving the efficacy of a particular approach. Where the outcomes are less well defined, or where greater theoretical clarity is needed, do we need a different approach? In this session, we'll look at research approaches geared for discovery rather than justification.

Presenter: Bob Coulter, Missouri Botanical Garden

Roundtables Marina 2

Building First Graders' Ecological Responsibility through Informational Text Sets

1:15 PM to 1:45 PM, Marina 2

We aim to promote dialogue between researchers and practitioners through a hybrid model that emerged from a pilot study examining how and in what ways first grade students learn environmental education from informational texts, integrating environmental education, and social studies frameworks with the common core standards.

Presenter: Anneliese Mueller Worster, Salem State University

Food in EE Research: Complex Social and Economic Considerations

1:15 PM to 1:45 PM, Marina 2

This session, based on research on food insecurity and culture in low-income urban schools, will feature deliberation on the complex social and economic issues rife when considering food in EE and EE research.

Presenter: Sarah Riggs-Stapleton, University of Oregon

Opportunities for Youth Engagement in Scientific Practice through Citizen Science

1:15 PM to 1:45 PM, Marina 2

We examine opportunities for youth engagement in scientific reasoning practices of the Next Generation Science Standards (NGSS) through citizen science (CS) by applying research literature to typical CS activities. We assert that learning through CS is not a default but must be facilitated by EE practitioners in and outside classrooms.

Presenters: Emily Harris, University of California–Davis; Heidi Ballard, University of California–Davis

2:00 PM–2:30 PM

Facilitated Discussions

Inclusion Matters: Exploring Cultural Considerations in EC-12 Sustainability Education Policies

2:00 PM to 2:30 PM, Marina 4

This session will review research conducted by the Sustainability and Education Policy Network (SEPN) surrounding cultural considerations in sustainability and environmental education policy. The research emphasized in this session focuses on data collected on early childhood through grade 12 (EC-12) provincial Ministries of Education in Canada.

Presenter: Jada Koushik, University of Saskatchewan

Methods for Assessing EE Concepts and Constructs with Young Children

2:00 PM to 2:30 PM, Marina 1

What do young children (birth to 8 years) know about the environment, and how can we measure what they know? This session will provide an overview of existing and newly-developed measures of children's knowledge and beliefs about nature, and facilitate discussion of potential innovative ways to assess valued EE outcomes.

Presenters: Julia Torquati, University of Nebraska–Lincoln

Methods for Engaging Young Children as Active Researchers in EE

2:00 PM to 2:30 PM, Spinnaker 2

This interactive session explores what it means to engage young children as active researchers, discussing the successes and challenges of two pilot projects aimed at investigating methods for engaging children in posing researchable questions, collecting and interpreting data, and presenting findings.

Presenters: Carie Green, University of Alaska Fairbanks; Anneliese Mueller Worster, Salem State University

Using Social Network Analysis to Explore the Building of a Community

2:00 PM to 2:30 PM, Marina 3

Social network analysis (SNA) can identify patterns of community interaction, learning, and growth. Building on our design-based research of climate change education providers, this discussion session will explore the use of SNA to help community of practice members understand, evaluate, and plan effective community structure designed for program success.

Presenters: Joe Heimlich, Lifelong Learning Group/COSI ; Cathlyn Styliniski, University of Maryland Center for Environmental Science

Using Standardized Test Scores as a Measure of EE's Influence on Student Learning

2:00 AM to 2:30 AM, Spinnaker 1

Join in discussing the use of standardized test scores as a measure of EE's impact on academic learning. Challenges encountered in a Minnesota Department of Education project will be shared, with participant discussion regarding the difficulties of and strategies for using standardized test scores and alternative measures for studying EE's influence on academic learning.

Presenter: Julie Ernst, University of Minnesota–Duluth

Roundtables

Marina 2

A Criteria-Based Evaluation of Environmental Literacy Plans in the United States

2:00 PM to 2:30 PM, Marina 2

This workshop will focus on a criteria-based matrix created to assess and evaluate strengths and weaknesses of state Environmental Literacy Plans. The feedback gathered during this workshop will inform changes that need to be made to have a valid tool that will be useful to the environmental education community.

Presenter: Karena Ruggiero, University of Tennessee

Changing the Inattention to EE in Science Methods Courses

2:00 PM to 2:30 PM, Marina 2

The inclusion of environmental topics in education settings can increase interest in science and provide connections to other subjects. However, many pre-service elementary teachers lack a working knowledge of environmental literacy. This discussion aims to define research designs for finding successful strategies to help candidate's link science and other standards.

Presenter: Carol Johnston, Mount St. Mary's College

Slugs and Shortcuts: Children as Co-Researchers Within Ecological Education Research

2:00 PM to 2:30 PM, Marina 2

This interactive presentation will discuss methodological approaches and benefits of working with children as "co-researchers" within Ecological Education Research. This in turn, has the potential to foreground the more-than-human world as an active agent in the research process.

Presenter: Laura Piersol, Simon Fraser University

2:45 PM–3:45 PM

Posters II Grande Foyer

BEETLES: Findings from a Environmental Education Professional Development Program Evaluation

2:45 PM to 3:45 PM, Grande Foyer

The BEETLES (Better Environmental Education Teaching, Learning, Expertise Sharing) project has developed a model of professional learning for OSP educators. This poster summarizes findings of an evaluation study of the impact of BEETLES professional learning opportunities for outdoor science educators and subsequently for the youth who participate in their programs.

Presenters: Valeria Romero, University of California–Berkeley; Bernadette Chi, University of California–Berkeley



Cultural Cognition and Climate Change: Why Consensus is Not Enough

2:45 PM to 3:45 PM, Grande Foyer

Climate change education can be challenging, as the issue remains controversial and highly politicized among the public. Results from a study of secondary science teachers' worldviews and climate perceptions will be briefly explained so we can discuss new researchable questions and the effective design and marketing of educational resources.

Presenter: Kristen Kunkle, NAAEE

Developing an Urban International EE Club Collaborative: Opportunities and Obstacles

2:45 PM to 3:45 PM, Grande Foyer

The IUPUI Center for Earth and Environmental Science and School of Education are collaborating on a multi-year Environmental Education Club Collaborative between Indianapolis, Indiana and Eldoret, Kenya. Results from the first year of the program will be shared, as well as identified opportunities and obstacles.

Presenters: Brian Joseph Plankis, Indiana University–Purdue University Indianapolis; Pamela Martin, Indiana University–Purdue University Indianapolis; Jenna Gatzke, Indiana University–Bloomington

Developing Environmental Action Competence in a High School Urban Agriculture Program

2:45 PM to 3:45 PM, Grande Foyer

This session will explore research methods that attempt to capture the development of student environmental action competence as a result of participating in an infused urban agriculture program at an urban high school in California.

Presenters: Anne Kinney Stephens, California State University–Chico; Heidi Ballard, University of California–Davis

Exploring the Interaction of Culture and Environment in Indonesia

2:45 PM to 3:45 PM, Grande Foyer

This research builds on existing theories of place-based education while describing a partnership between Canadian and Indonesian universities in the offering of an international field school in ecological education. The study, set in various island communities, employs participatory action research methods to relate the perspectives of stakeholders including: community members, students, teachers, and faculty.

Presenter: David Bryan Zandvliet, Simon Fraser University

Incorporating Relational Epistemologies into Environmental Teaching

2:45 PM to 3:45 PM, Grande Foyer

Human exceptionalism is the philosophical foundation for destructive ecological practices. By contrast, relational epistemologies recognize the interrelatedness of ecological systems and their components. This proposal is for discussion around teaching practices that foster and develop relational frameworks, which may hold particular potential for environmental education.

Presenters: Megan McGinty, University of Washington; Priya Pugh, University of Washington

Investigating the Needs of EE Workshop Facilitators: A Learner Analysis

2:45 PM to 3:45 PM, Grande Foyer

The present study investigated the learning needs of Project Learning Tree's (PLT) extensive network of workshop facilitators in order to inform the design of a future professional development program, and help PLT meet organizational goals. This poster outlines the methodology of this design-based research project, and discusses results.

Presenter: Jennifer Pic, Project Learning Tree

Korean Undergraduate Students' Conceptualisations of Sustainability

2:45 PM to 3:45 PM, Grande Foyer

This study explores how Korean students understand the controversial concept, sustainability. An open-ended survey was conducted with 50 undergraduates from Seoul National University, who revealed diverse but collective ways of thinking about sustainability. The findings highlight the significance of contextualised approaches in sustainability curriculum in higher education, reflecting cultural characterisation.

Presenter: Taeyeon Kim, Seoul National University

Measuring Connection to the Environment through Drawing Analysis

2:45 PM to 3:45 PM, Grande Foyer

Environmental connectedness is traditionally evaluated through Likert-type surveys. Over 500 non-science students completed environmental connectedness scales and drew pictures of their campuses. Analysis indicates a statistically significant relationship between drawing features and connectedness. This work has implications for measurement of environmental connectedness in informal settings or for low English literacy groups.

Presenter: Kyler Stanley, Michigan State University

Measuring, Building, and Understanding Hope in Climate Change Education

2:45 PM to 3:45 PM, Grande Foyer

Fostering hope over despair may boost engagement in climate change solutions. How does hope fit in climate change education? How do we best measure it? Can we foster hope through climate change education; is it a personality trait, or both?

Presenters: Christine (Jie) Li, University of Florida; Martha Monroe, University of Florida; Kathryn Stevenson, North Carolina State University

Nature and Friends: Children's Socio-Moral and Environmental Moral Reasoning

2:45 PM to 3:45 PM, Grande Foyer

The current study used the Social Domain Theory (Turiel, 1983) and Kahn's (1999) categorization of environmental moral reasoning to examine associations among children's socio-moral reasoning and environmental moral reasoning toward other living beings (i.e., plants). By doing so, it is aimed to inform teachers and parents to support children's morality towards friends and nature.

Presenter: Julia Torquati, University of Nebraska–Lincoln

Shifting the Focus of Education Toward Behavioral Root Causes

2:45 PM to 3:45 PM, Grande Foyer

The longest follow-up study of environmental education programs is just 12 months. We examine one possible reason few follow-ups are done and how the growing awareness that environmental problems are fundamentally rooted in our genes demands a paradigm shift in pedagogy that may result in greater long term efficacy.

Presenter: Marc Pratarelli, Colorado State University–Pueblo

StreamLines: Art, Science, and Citywide EE in Indianapolis

2:45 PM to 3:45 PM, Grande Foyer

How do semi-permanent and event-based public art experiences (visual art, poetry, music, and dance) that strategically incorporate site-specific ecological sustainability content contribute to environmental literacy in a city? This poster will present interim results of a citywide EE experiment in Indianapolis using public art, performance, and media.

Presenters: John Fraser, New Knowledge Organization; Joe Heimlich, Lifelong Learning Group/COSI

The Environmental Learning and Behavior Nexus: A Bay Area Survey

2:45 PM to 3:45 PM, Grande Foyer

This poster shares findings from a random-sample telephone survey in which we asked 1,201 respondents about connection to their “place,” outdoor activities, environmental concerns, how they learn about the environment, and their environmentally related behaviors. We explore connections among these concepts and implications for environmental education research and practice.

Presenters: Rachelle Gould, Stanford University; Nicole Ardoin, Stanford University; Jennifer Thomsen, Stanford University

Thinking Fast or Slow: Exploring the Relationship Between Environmental Identity and Decision Making

2:45 PM to 3:45 PM, Grande Foyer

How do you you make environmental decisions? Do you make environmental decisions in a fast, intuitive way or a slow, deliberate way? Does your identity make a difference? In this mixed methods study of 299 undergraduates, the association between environmental identity and making decisions about environmental issues was investigated.

Presenter: Allison Freed, Michigan State University

Undergraduates in a Sustainability Semester: Figured Models of Social Change

2:45 PM to 3:45 PM, Grande Foyer

This poster overviews results of a critical case study, which found that over the course of one semester, undergraduates studying sustainability developed figured (or hypothetical) models of social change for sustainability in ways that aligned with their individual identities and positionalities within their social and learning communities.

Presenter: Hannah Miller, Michigan State University

Using Text Messaging as a Research Methodology in Environmental Education

2:45 PM to 3:45 PM, Grande Foyer

How might researchers use texting to understand learning about (and for) the environment? This poster presents research from a university-level class that used automated text messaging to prompt learners to reflect on class sessions. You’ll learn the tools, benefits, and potential limitations of using texting in EE evaluation and research.

Presenter: Tanner Vea, Stanford University



Values in a Watershed Curriculum: The Flathead Watershed Delphi Survey

2:45 PM to 3:45 PM, Grande Foyer

The Flathead Watershed Curriculum Development Process: This poster will show results of research into the process of discovering the values, through the Delphi process, of the stakeholder participants living in the Flathead Watershed, and how those values informed the development of the Flathead Watershed Curriculum based on the Flathead Sourcebook.

Presenter: Rose Vallor, Montana State University

Thursday

9:00 AM–9:30 AM

Facilitated Discussions

Collaborative Book Writing to Advance Environmental Education Practice

9:00 AM to 9:30 AM, Marina 4

Educators collaboratively wrote a book on urban environmental education through a project-based online learning community, coordinated by EECapacity. We explore how this online book-writing community contributed to educators' network and change of practice. We also discuss how similar communities can help advance and innovate the field of environmental education in general.

Presenters: Yue Li, Cornell University; Alex Kudryavtsev, Cornell University; Marianne Krasny, Cornell University

Examining Environmental Science Agency through Youth-Focused Citizen Science

9:00 AM to 9:30 AM, Spinnaker 1

Studying the environmental and science learning of youth through participation in environmental science research and community-based inquiry presents challenges and opportunities for environmental education researchers. Our research in progress of case studies of youth-focused community and citizen science will ignite discussion of our lens of environmental science agency.

Presenter: Heidi Ballard, University of California–Davis

Missed Opportunities and Unchallenged Limits

9:00 AM to 9:30 AM, Marina 1

Drawing on critical and feminist theories, this discussion will address whether environmental educators should and can consider human needs in our efforts without being "everything to everyone." Through role-play and discussion we will explore the growing responsibilities of EE objectives and methods as we work towards inclusivity.

Presenter: Olivia Aguilar, Denison University

Starting up Sustainability: Research Process with Ecosocial Incubators

9:00 AM to 9:30 AM, Marina 3

How can social innovation for community-based environmental education enhance community resilience and capacity? Ecosocial incubators, a method that can leverage complexity and ecological approaches, provide access to empowering project-based learning. Come explore processes of ecosocial incubator research, creating conditions for emergent student creative application and synthesis of environmental education learning.

Presenters: Denise Mitten, Prescott College; Marna Hauk, Prescott College



What Happens When We Get Outside?

2:45 PM to 3:45 PM, Grande Foyer

What is it about being outside? What does it inspire us to do? This survey research is aimed at understanding the connection between getting outside, nature relatedness, science education, and ultimately pro-environmental behavior at a community level.

Presenter: Amanda Obery, Montana State University

Youths' Identity Work: Re-Thinking Cultural Relevance, Smartness, & Boundaries

2:45 PM to 3:45 PM, Grande Foyer

As part of The HERP Project, we have engaged 228 diverse high school youth in residential summer Herpetological Research Experiences. Our research focuses on the cultural norms and practices that nurture youths' identities as knowers, doers, and contributors. Our findings raise questions about some taken-for-granted assumptions about equitable instruction.

Presenters: Lacey Denise Huffling, Georgia Southern University; Terry Tomasek, Elon University; Catherine Matthews, University of North Carolina – Greensboro; Aerin Benavides, Immersion for Language Spanish Acquisition

Roundtables

Marina 2

Mechanisms for Researching Formative Assessment of Science Practices

9:00 AM to 9:30 AM, Marina 2

Formative assessment of science practices is emphasized under NGSS, inviting important research on how such assessment affects student engagement in environmental problem solving. Yet mechanisms for implementing related research are scarcely articulated. How can we design formative assessment of practices to provide meaningful research data, with minimal teacher burden?

Presenter: Brenda Bergman, Michigan Technological University

The Value of Nature Centers to Communities

9:00 AM to 9:30 AM, Marina 2

Our nationwide study of 16 U.S. nature centers found that communities believed centers provided four sets of values: environmental connection, leisure provision, civic engagement, and community resilience. We will summarize our study and facilitate a discussion on how nature center professionals and researchers might apply our results to their work.

Presenters: Matthew Browning, Virginia Polytechnic Institute; Nicole Ardoin, Stanford University; Joe Heimlich, Lifelong Learning Group/COSI

Skill-Building Workshop

Spinnaker 2

International Fellowships—How to Find Them and Leverage Them For Future Success

9:00 AM to 9:30 AM, Spinnaker 2

Ever dreamed of doing research in new international contexts? Come and join the discussion about how to find the right international post-doc, fellowship, or sabbatical experience for you and your research and how it can prepare you for what you hope to do next.

Presenter: Karen Hollweg, University of Colorado—Boulder

9:45 AM–10:15 AM

Facilitated Discussions

Beyond the Core: Expanding the Edges of the Environmental Learning Landscape

9:45 AM to 10:15 AM, Marina 3

Many organizations do not self-identify as environmental education providers but are, in fact, critical to the environmental learning landscape. We'll discuss our recent social network analysis study, which identifies these critical players, and how engaging them might grow the field, help reach difficult-to-access populations, and enhance relevance to people's everyday lives.

Presenters: Rachelle Gould, Stanford University; Nicole Ardoin, Stanford University

Considering Children's Perspectives in Environmental Education Research: Methods and Methodologies

9:45 AM to 10:15 PM, Marina 4

There is little research that focuses directly on children's perspectives of environmental education or environmental learning. Methodologies and methods, such as a socio-cultural understanding of children and the Mosaic Approach, can be extremely effective for this type of work. Learn more about these approaches, and how to apply them.

Presenter: A. Elizabeth Beattie, University of British Columbia



Early Childhood EE Research

9:45 AM to 10:15 AM, Spinnaker 1

NAAEE's Natural Start Alliance and the International Journal of Early Childhood Education are aiming to build the research base for early childhood environmental education. Join a discussion to share what you are doing, hear what other research is happening in early childhood EE, and discuss what is needed to advance research in the field.

Presenters: Christy Merrick, NAAEE; Betty Olivolo, NAAEE

Exploring How Students and Teachers Connect Daily Life and Ecology

9:45 AM to 10:15 AM, Marina 1

This presentation will facilitate a discussion regarding the significance of connecting students' lives with ecological understanding in our teaching about the environment in both formal and informal settings.

Presenters: Yael Wyner, City College of New York; Erica Blatt, College of Staten Island

Skill-Building Workshop Spinnaker 2

Interviewing—Tips and Tricks from an Academic Search Committee Veteran

9:45 AM to 10:15 AM, Spinnaker 2

You have successfully landed an on-campus interview... now what? A search committee veteran shares his insights on what makes candidates rise to the top to become the must-have candidate and how otherwise top tier candidates become lackluster.

Presenter: Paul Hart, University of Regina

Roundtables Marina 2

Evidence and Potential of Citizen Science in Natural History Museums for EE

9:45 AM to 10:15 AM, Marina 2

Recently many natural history museum (NHM)-based citizen science projects have emerged to improve biodiversity science and conservation education. We ask, under what circumstances do these projects currently contribute effectively to science and environmental education outcomes, what methods of implementing citizen science through NHMs are most effective, and how could this potential be better realized?

Presenter: Heidi Ballard, University of California–Davis

Exploring the Implementation of EE Programs Through a Nationwide Survey

9:45 AM to 10:15 AM, Marina 2

Participants will explore how we can best examine and understand the realities of EE implementation on the ground. By discussing what we do and don't know about the real applications of EE, we will work to refine questions and methods for a nationwide survey of EE program directors and educators.

Presenters: Olivia Aguilar, Denison University
Susan Caplow, University of Montevallo

How to Connect Environmental Education to Empowerment and Scientific Literacy

9:45 AM to 10:15 AM, Marina 2

To improve professionalization of environmental education, we discuss how to develop didactic material that could be (a) enough socially relevant, (b) interdisciplinary, (c) promoter of local empowerment, (d) connecting educational processes to real life, (e) based on ecological literacy, and (f) committed to emancipatory processes and critical thinking.

Presenter: Carlos Saito, University of Brasilia

10:30 AM–12:00 PM

Workshops

Education Outside: Building Evaluation Capacity Within an EE Organization

10:30 AM to 12:00 PM, Marina 1

This session focuses on how a multi-phase partnership can build evaluation capacity of EE organizations by clarifying how to improve programming and critically examining program implementation to set up a rigorous outcomes study. This session encourages researchers and practitioners to share challenges and best practices in supporting evaluation capacity building.

Presenters: Bernadette Chi, University of California–Berkeley; Rachel Pringle, San Francisco Green Schoolyard Alliance; Valeria Romero, University of California–Berkeley; Lisa Newton, University of California–Berkeley

Integrating Conservation Psychology Principles into EE Research and Practice

10:30 AM to 12:00 PM, Marina 3

This interactive workshop provides the opportunity to learn how research-based practices within psychology relate to behavior change and “connection to nature” goals within environmental education. Participants will interact with leaders in the field and apply conservation psychology principles and measurement tools to their own work.

Presenters: Ruth Kermish-Allen, Maine Mathematics and Science Alliance; Carol Saunders, Antioch University New England; Wesley Schultz, California State University

Navigating Gender in EE Research**10:30 AM to 12:00 PM, Marina 4**

This workshop is a space to (1) offer professional development and support for people who identify as women, (2) identify research needs and challenges related to gender in environmental education research, and (3) deepen feminist intersectional scholarship in the field. We particularly welcome graduate students and new scholars.

Presenters: Constance Russell, Lakehead University; Nicole Ardoin, Stanford University; Charlotte Clark, Duke University; Jada Koushik, University of Saskatchewan; Teresa Lloro-Bidart, California Polytechnic State University; Marcia McKenzie, University of Saskatchewan; Alexa Scully, Lakehead University; Sarah Riggs Stapleton, University of Oregon

**Skill-Building Workshop
Spinnaker 1****What and Where to Publish****10:30 AM to 12:00 PM, Spinnaker 1**

Are you trying to figure out where and how to share your research with the field. Join us for a candid discussion on the various opportunities and challenges to publishing environment education research in book publishing, traditional peer-reviewed journals, and more non-traditional venues.

Presenters: Paul Hart, University of Regina; Nicole Ardoin, Stanford University; Bob Coulter, Missouri Botanical Garden

1:30 PM–3:00 PM**Workshops****Describing the Landscape of the Field of Environmental Education****1:30 PM to 3:00 PM, Marina 3**

This interactive workshop asks participants to reflect on data from a Delphi panel that asked experts from all parts of the field of EE in North America to name the top outcomes that should emerge from the field of EE.

Presenters: Charlotte Clark, Duke University; Joe Heimlich, Lifelong Learning Group/COSI; Nicole Ardoin, Stanford University; Judy Braus, North American Association for Environmental Education

Within, Against... Beyond? Exploring Emerging Methodologies in Post-Qualitative EER**1:30 PM to 3:00 PM, Marina 4**

This presentation explores conditions that allow qualitative inquiries to claim legitimacy. Acknowledging growing debates within conventional practices, we critically engage a broad spectrum of emerging methodological approaches that work “within” and “against” common interpretive methods. Case examples illustrate how when the music changes, so must the dance.

Presenters: Paul Hart, University of Regina; Catherine Hart, University of Regina

**Skill-Building Workshop
Marina 1****Bursting the Bubble: Getting a Job in EE Research****1:30 PM to 3:00 PM, Marina 1**


This conversation will center on applying, interviewing, and negotiating for jobs in environmental education, both in the academic and non-academic sectors. Presenters will share personal experiences, challenges, and tips. Attendees are encouraged to bring questions to pose to the group.

Presenters: Kathayoon Azra Khalil, Stanford University; Kathryn Stevenson, North Carolina State University; Susan Caplow, University of Montevallo; Jennifer Thomsen, Stanford University

3:15 PM–4:45 PM**Closing Plenary • Grande Ballroom C**

Reflections on Emerging Issues, Solutions, Methods, and Theories in EE Research

Cathlyn Stylinski and Ruth Kermish-Allen with 2015 NAAEE Research Award recipient Alan Reid and a panel of early-career and established EE researchers



Join us next year for the

**13TH ANNUAL
RESEARCH SYMPOSIUM**

**October 18-19, 2016
Madison, Wisconsin**

NAAEE: Be the change



For more than four decades, the North American Association for Environmental Education has worked to strengthen and expand the field of environmental education, with a growing network of support including:

- More than 16,000 members and supporters
- 54 state and provincial Affiliate organizations
- 30 countries around the world

Today, as we build on this foundation, NAAEE looks forward to strengthening our core and stimulating new thinking that will best meet the environmental and social challenges of the next decade.

Building a network

Annual Conference: NAAEE has convened an annual conference for environmental education professionals since 1972. Averaging more than 1,000 participants each year, the event is designed to promote innovation, networking, learning, and dissemination of best practices. Held in a different city each year, the 2016 conference will take place in Madison, Wisconsin.

Early Childhood EE Alliance: In 2013, NAAEE launched the Natural Start Alliance—a coalition of educators, parents, and organizations focused on linking early childhood education with EE to connect young children with nature and enhance opportunities for creative play and learning.

Strengthening the field

EE Advocacy: NAAEE has helped lead policy and outreach efforts on behalf of the field since its inception. NAAEE sponsors a monthly Action Network Call to highlight key opportunities for people across the country to get involved in local, state, and national issues, from supporting the **No Child Left Inside (NCLI)** coalition and the implementation of State Environmental Literacy Plans to strengthen public support for environmental education.

EE Resources: NAAEE's National Project for Excellence in EE has produced the **Guidelines for Excellence** series, the most widely accepted guidelines for environmental education around the globe. The online EE Linked networks provide up-to-date environmental education research, curriculum guides, professional development opportunities, and job postings.

Inspiring innovation

E-STEM Initiative: NAAEE is leading a research effort to examine how environmental education and STEM (Science, Technology, Engineering, and Math) learning intersect and can be mutually supportive.

Broadening the conversation: With support from the U.S. EPA, NAAEE has collaborated with the Cornell Civic Ecology Lab and others on **EECapacity**, a project aimed at bringing new voices, innovation and ideas together, including youth and community development professionals to broaden the reach and impact of environmental education.

Connect with NAAEE today and join the movement to create a more sustainable future together.





naaeee

North American Association
for Environmental Education

SAN DIEGO
2015

Index of Presenters

Ady, Janet, janet_ady@fws.gov
Aguilar, Olivia, aguilaro@denison.edu
Ardoin, Nicole, nmardoin@stanford.edu
Ballard, Heidi, hballard@ucdavis.edu
Beattie, A. Elizabeth, lizbeattie22@gmail.com
Benavides, Aerin, awbenavi@uncg.edu
Bergman, Brenda Gail, bgbergma@mtu.edu
Blatt, Erica, enblatt@gmail.com
Braus, Judy, jbraus@naaee.org
Brody, Michael, brody@montana.edu
Browning, Matthew H, matt.mutel.browning@gmail.com
Caplow, Susan, susancaplow@yahoo.com
Carman, Jennifer, jpcarman@umich.edu
Chi, Bernadette, bchi@berkeley.edu
Clark, Charlotte, cclark@duke.edu
Coulter, Bob, bob.coulter@mobot.org
Dillon, Justin, justin.dillon@kcl.ac.uk
Donlan, Michelle, michelle_donlan@fws.gov
Drahota, Whitney, wdrahota@gmail.com
Ernst, Julie, jernst@d.umn.edu
Fraser, John, jfraser@newknowledge.org
Freed, Allison L., allisonwebster@gmail.com
Gatzke, Jenna M., jgatzke@indiana.edu
Gould, Rachelle, rachelle@post.harvard.edu
Green, Carie J., carie.green@alaska.edu
Guest, Haley, haleyguest@gmail.com
Harris, Emily, eharris@ucdavis.edu
Hart, Catherine, catherine.hart@uregina.ca
Hart, Paul, paul.hart@uregina.ca
Hauk, Marna, earthregenerative@gmail.com
Heimlich, Joe E., heimlich.1@osu.edu
Huffling, Lacey Denise, lhuffling@georgiasouthern.edu
Hunter, Roberta, roberta.hunter@gse.rutgers.edu
Johnston, Carol C, cjohnston@msmu.edu
Kermish-Allen, Ruth, rkermishallen@antioch.edu
Khalil, Kathayoon Azra, kkhalil@nhm.org
Kim, Taeyeon, tykim1112@gmail.com
Kochanowski, Leslie Jenna, kochanle@mail.uc.edu
Koushik, Jada, jada.koushik@usask.ca
Krasny, Marianne, mek2@cornell.edu
Kudryavtsev, Alex, ak383@cornell.edu
Kunkle, Kristen, kkunkle68@gmail.com
Laird, Shelby Gull, shelby.gull.laird@gmail.com
Li, Christine (Jie), lixx1233@ufl.edu
Li, Yue, yl983@cornell.edu
Lloro-Bidart, Teresa, tllor001@ucr.edu
Martin, Pamela A, martinpa@iupui.edu
Matthews, Catherine, cmatthews@uncg.edu
McGinty, Megan, mcginty@uw.edu
McKenzie, Marcia, marcia.mckenzie@usask.ca
Merrick, Christy, christymerrick@gmail.com
Miller, Hannah K, hkm@msu.edu
Mitten, Denise, dmitten@prescott.edu
Monroe, Martha C., mcmonroe@ufl.edu
Newton, Lisa, lisanewton@berkeley.edu
Obery, Amanda, amanda.obery@gmail.com
Olivolo, Betty, bettyolivolo@gmail.com
Phillips, Tina, tina.phillips@cornell.edu
Pic, Jennifer, jpic@plt.org
Piersol, Laura, lpiersol@sfu.ca
Plankis, Brian Joseph, bplankis@iupui.edu
Pratarelli, Marc, marc.pratarelli@csupueblo.edu
Pringle, Rachel, rachel@sfgreenschools.org
Pugh, Priya, pkpugh@uw.edu
Ritchie, Tracey Ann, tracey.ritchie@gmail.com
Romero, Valeria, valeriafr@berkeley.edu
Ruggiero, Karena, kruggier@vols.utk.edu
Russell, Constance, crussell@lakeheadu.ca
Saito, Carlos, carlos.h.saito@hotmail.com
Saunders, Carol, cdsaunders@hughes.net
Schlembach, Sue, schlemse@mail.uc.edu
Schultz, Wesley, schultz@action3630.com
Scully, Alexa, ajscully@lakeheadu.ca
Stanley, Kyler, libarkin1234@gmail.com
Stapleton, Sarah Riggs, skriggs@gmail.com
Stephens, Anne Kinney, akstephens@csuchico.edu
Stevenson, Kathryn, kathryn_stevenson@ncsu.edu
Strnad, Renee, renee_strnad@ncsu.edu
Stylinski, Cathlyn, cstylinski@umces.edu
Swayze, Natalie, nswayze@gmail.com
Thompson, Timia D, tthompson@alumni.ufl.edu
Thomsen, Jennifer, jthomsen@stanford.edu
Tomasek, Terry, ttomasek@elon.edu
Torquati, Julia, jtorquati1@unl.edu
Vallor, Rose R., rvallor@gmail.com
Vea, Tanner, tvea@stanford.edu
Worster, Anneliese Mueller, aworster@salemstate.edu
Wyner, Yael, ywyner@ccny.cuny.edu
Zandvliet, David Bryan, dbz@sfu.ca
Zint, Michaela, zintmich@umich.edu

It's hip to be square.

Download the NAAEE app and access complete conference information!

There are **three ways** to get the app:

- Go to crowd.cc/naaee2015
- Scan the **QR code** below
- Download the "CrowdCompass Directory" from your app store. Once you have the app, search for **NAAEE**.



naaee

North American Association
for Environmental Education



naaee.org