

LEX2019



In partnership with:



naaee
North American Association
for Environmental Education



kaee
Kentucky Association for
Environmental Education

16TH Annual Research Symposium

OCTOBER 15–16

EDUCATING FOR A JUST AND SUSTAINABLE FUTURE



LEX2019



Welcome to the 16th Annual NAAEE Research Symposium!

Dear Friends and Colleagues:

We are very pleased to welcome you to Lexington, Kentucky for the 16th Annual NAAEE Research Symposium.

Since its inception in 2003, the NAAEE Research Symposium has had a goal of fostering dialogue and collaboration among members of the EE research field, including researchers, policy makers, and practitioners at all stages of their careers. This year's research symposium contributes to advancing EE towards a just and sustainable future through a dual focus on discussing research processes and impacts. In addition to dozens of poster presentations sharing completed or in-progress research projects, a range of panels, roundtable discussions, and workshops will provide multiple perspectives on how we do EE research, and to what ends.

Discussions related to **research processes** are aimed at sharing knowledge and new directions in research methodologies and methods, to build our capacity and expertise as a research field. For example, we'll engage in a range of topics including collaborating ethically across researcher-practitioner and researcher-policymaker roles, working with new theoretical approaches, Indigenous research protocols and methodologies, innovations in data collection or analysis, public forms of knowledge mobilization, and publishing tips.

Sessions on **research impacts** challenge us to increase the usefulness and effects of our research field in relation to EE policy and practice at a range of scales. For example, discussions on participatory and place-based action research, large scale comparative and collaborative approaches, making the most of program evaluations, connections to global initiatives such as the Sustainable Development Goals (SDGs), the value of blue sky research, the state of the field, next steps in key gaps and critical areas, and a range of other topics aim to help advance the contributions of our diverse and yet connected work.

We have crafted keynote speakers, discussion sessions, workshops, and poster presentations that showcase a range of innovative approaches to EE research processes and impacts. Aligning with the overall NAAEE conference theme for this year, we also invite you throughout to consider how a sustainable future is also a just future, and the ways in which we must work as a community to ensure both are at the heart of our work. This will require reflection, transformation, and collaboration.

We trust the Lexington gathering will not only be enjoyable, but will also spark innovation, action, and community building. We look forward to your participation!

A handwritten signature in black ink, appearing to read 'MKenzie'.

Marcia McKenzie
Chair
NAAEE Research Symposium

A handwritten signature in black ink, appearing to read 'Olivia Aguilar'.

Olivia Aguilar
Co-Chair
NAAEE Research Symposium

THANK YOU

College and university sponsors of the 16TH Annual NAAEE Research Symposium help further research in environmental education.



CENTER FOR RESEARCH
AND EVALUATION

cosi.org



www.sepn.ca
[@SEPNetwork](https://twitter.com/SEPNetwork)



- Enabling deeper educational responses to sustainability and climate change issues
- Global comparative research to inform education policy making and practice
- Integrated research-based partnerships
- Dynamic policy maker-researcher collaborations
- Innovative postgraduate training



UF IFAS
UNIVERSITY of FLORIDA



SCHOOL OF FOREST
RESOURCES & CONSERVATION

The University of Florida is proud to support NAAEE's Research Symposium.

Offering **graduate degrees**
and an **EE certificate**
online and in-person

sfrc.ufl.edu/academics/graduate
Teaching, research, and extension
for a sustainable future



The Center for Environmental Education and Sustainability at Western Kentucky University is proud to support the work of NAAEE.

More information about CEES at WKU is available at wku.edu/cees.



Stanford | Social Ecology Lab

Please fill out our Hope and Action survey at
http://bit.ly/NAAEE2019_HopeAndAction



Special Events

Monday, October 14

LEX2019



Note: These pre-symposium options for Research Symposium participants have additional fees and require registration in advance.



Skuller's Clock

EE Research Field Session:

Working For/Towards Justice and Sustainability in EE Research

Meet at the Old Fayette County Courthouse, 215 W. Main Street

2:00 PM–5:00 PM

Jim Embry (Lexington resident, ee360 Community Fellow, and founder of the Sustainable Communities Network) and Olivia Aguilar (Associate Professor of Environmental Studies at Denison University) will guide participants through a walk of downtown Lexington visiting gardens and cultural heritage sites attending to issues of justice and sustainability. Local practitioners and researchers will join us along the way to encourage thoughtful dialogue around what it means to do research for and towards justice and sustainability. The workshop will culminate in a facilitated discussion that asks participants to identify the multiple ways and contexts in which we can attend to issues of justice and sustainability in EE research. (Pre-registration required.)



Research Networking Dinner

Meet at Zim's Café, 215 W Main Street, Suite 25
zimscafe.com

7:00 PM–9:00 PM

Join in on a casual evening of food, fun, and conversation focused on EE research at Zim's Café, a local favorite with a menu inspired by the bounty from Kentucky farms. Diners will include the Research Symposium co-chairs, featured panelists, and many other colleagues, friends, and mentors. (Pre-registration required; check at registration desk for available space.)

STAY CONNECTED!



@TheNAAEE



#NAAEE2019



@TheNAAEE



CrowdCompass AttendeeHub
Search for "NAAEE"

Schedule at a Glance

Tuesday, October 15

LEX2019



Location Note: Patterson Ballroom is in the Hyatt Regency Lexington; Thoroughbred 1-5 and Elkhorn B-D are in the Lexington Convention Center.

9:00 AM–9:30 AM	Welcome	Patterson Ballroom
9:30 AM–10:30 AM	Keynote Address Oren Pizmony-Levy	Patterson Ballroom
10:30 AM–11:00 AM	BREAK	
11:00 AM–12:00 PM	Roundtable Discussions Panels and Presentations	Patterson Ballroom Thoroughbred 2, 3, 5
12:00 PM–1:30 PM	Research Symposium Luncheon	Patterson Ballroom
1:30 PM–3:00 PM	Workshop Panels and Presentations	Thoroughbred 1 Thoroughbred 2, 3, 4, 5
3:00 PM–3:15 PM	BREAK	
3:15 PM–4:30 PM	Poster Session	Patterson Ballroom
4:30 PM–6:00 PM	Reception and Award Ceremony	Patterson Ballroom

Wednesday, October 16

7:30 AM–9:00 AM	Graduate Student Breakfast	Thoroughbred 4
9:00 AM–9:15 AM	Welcome	Patterson Ballroom
9:15 AM–10:15 AM	Keynote Address Nicole Ardoin	Patterson Ballroom
10:15 AM–10:45 AM	BREAK	
10:45 AM–12:15 PM	Workshops Panels and Presentations	Thoroughbred 1, 2 Thoroughbred 3, 4
12:15 PM–1:30 PM	Buffet Lunch	Elkhorn B-D
1:30 PM–2:30 PM	Roundtable Discussions Panels and Presentations	Patterson Ballroom Thoroughbred 1, 2, 3, 4, 5
2:30 PM–2:45 PM	BREAK	
2:45 PM–3:45 PM	Closing Keynote: Carolyn Finney	Patterson Ballroom
3:45 PM–4:30 PM	Symposium Closing	Patterson Ballroom

A Note on Combined Sessions

For combined panel and roundtable sessions, we ask that the final speaker on the program also play the role of session chair and timekeeper. Please divide the overall session time by the number of speakers, leaving at least 15 minutes for discussion across the presentations at the end of the session.

Materials for timekeeping will be provided in each room and on each roundtable, and we ask that all speakers adhere to their allotted time to ensure time for all presenters in the session, and for a closing discussion. Thank you for your assistance with facilitating a dialogical research symposium.

Tuesday, October 15

9:00 AM–9:30 AM

Opening & Welcome

Patterson Ballroom



Presenters:

Dr. Marcia McKenzie, University of Saskatchewan,
Research Symposium Chair

Dr. Olivia Aguilar, Denison University,
Research Symposium Co-Chair

9:30 AM–10:30 AM

Keynote



Dr. Oren Pizmony-Levy
Patterson Ballroom



Oren Pizmony-Levy is an Associate Professor in the Department of International and Transcultural Studies at Teachers College, Columbia University. He received his PhD from

the Department of Sociology and the Department of Educational Leadership and Policy Studies at Indiana University in 2013. He grew up in Eilat, Israel and earned BA and MA degrees at Tel-Aviv University. Prior to graduate school in the United States, Oren worked in the Education Department of the Society for the Protection of Nature in Israel and served as the research coordinator at the Israeli Gay Youth Organization. Oren's research interests center on analysis of educational movements such as accountability (for example, international assessment of student achievement), environmental and sustainability education, and sexuality education. He examines these cases in a comparative or cross-national research design using quantitative and qualitative methods, and social network analysis. Oren is co-leading the Teachers College Initiative for Sustainable Futures, which champions access to education that promotes learning, awareness, attitudes, and the skills needed to work individually and collectively in order to achieve a sustainable, regenerating world.



11:00 AM–12:00 PM

Roundtable Discussions

Patterson Ballroom

Collaborative Research for Equitable Access to Transformational EE Study Abroad

Going global with preparing EE for the future, our social practice theory research exposes transformational awareness and identity experiences, the importance of international EE collaboration, and affordances and constraints to overcoming access to EE study abroad programs.

Presenters: Allison Freed, University of the Ozarks; Aerin Benavides, The University of North Carolina–Greensboro; Lacey Denise Huffling, Georgia Southern University

Designing a Scalable Performance-Based Assessment Tool to Measure Environmental Literacy

Learn how Rhode Island Environmental Education Association, Mass Audubon, and University of Wisconsin–Madison researchers collaborated to create a framework for assessing environmental literacy of K–12 students. This framework will be used to inform the development of an interactive or activity-based assessment tool to be piloted in schools next year.

Presenters: Amanda Siebert-Evenstone, Epistemic Analytics; Jennifer Klein, Mass Audubon; Kristen Scopinich, Mass Audubon; Kelly Shea, University of Rhode Island

eeWORKS: Linking Citizen Science and Environmental Education with Research Evidence

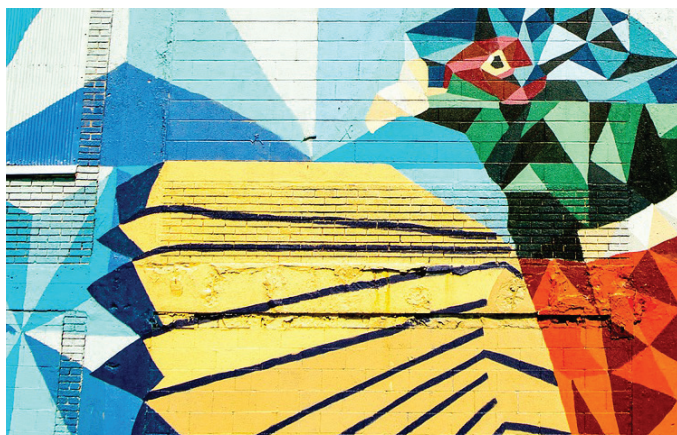
We will share early findings and seek feedback on an in-progress systematic literature review investigating the overlapping outcomes of community and citizen science (CCS) and environmental education. We will discuss the nuances of this process and early findings on how practitioners design and participants engage in CCS for environmental learning.

Presenters: Amanda Lindell, University of California-Davis; Christopher Jadallah, University of California-Davis

Exploring Social Emotional Learning in Residential Environmental Education

What is social emotional learning (SEL) and what does it look like in residential environmental education? Our study explores how a group of eleven residential EE program providers currently think, talk about, and enact SEL principles and practices. We will discuss initial findings as well as the relationship between research on SEL and environmental learning.

Presenters: Mele Wheaton, Stanford University; Emily Williams, Stanford University



Measuring Science Dispositions Within the Context of Stealth Environmental Education

A stealth environmental education approach embeds content in experiences that appeal to broader audiences. But, because it integrates multiple interest domains, it presents challenges to research processes. Guided by our example science-art-design project, we will lead a discussion on research within a stealthy design and ways to address associated challenges.

Presenters: Cathlyn Stylinski, University of Maryland Center for Environmental Science; Kelly Riedinger, Oregon State University Center for Research on Lifelong STEM Learning; Ruth Kermish-Allen, Maine Mathematics and Science Alliance

Researching Eco-Fascist Responses to Environmental Crisis

Fascist social movements are increasingly coordinated and visible. Recent violence has been motivated, in part, by concerns about global environmental crisis. This session focuses on how environmental concerns have animated, and are currently animating, fascist activities, and how environmental education researchers might engage these movements pedagogically, conceptually, ethically, and methodologically.

Presenters: Joseph Henderson, Paul Smith's College; David Long, Morehead State University; Alan Reid, Monash University



Strengthening the Field: A Call for Mixed Methods in Environmental Education Research

Evaluating the impact of single visit experiences is not only needed but also difficult to determine. This session argues for mixed methods research methodologies in environmental education by examining current literature and demonstrates how the implementation of both quantitative and qualitative approaches can lead to deeper insights than either methodology alone.

Presenter: Ann Rossmiller, The University of Cincinnati

Studying and Designing for Youth Agency in Citizen Science and Museums

We will discuss our research methods on youth learning and agency with environmental science through natural history museum-led citizen science, with the goal of exploring with colleagues how our research-practice partnership team can use our findings and a design-based research approach to re-design EE programs across settings.

Presenter: Maryam Ghadiri, University of California-Davis

11:00 AM–12:00 PM

Panels and Presentations

Addressing Affect and Socio-Emotional Learning in EE Evaluation and Research

Thoroughbred 5

- **Pros and Cons of Affective Measures of Environmental Education Effectiveness**
When researching, evaluating, and designing environmental education programs we often focus on knowledge, attitude, and behavior changes. This session will challenge participants to look at current research processes (including their own) to identify the pros and cons of these measures of effectiveness, with particular emphasis on affective measures.
Presenter: Emily Kalnicky, Minnesota Zoo
- **Embedded Assessments of Social-Emotional Learning in Residential Environmental Education**
How can we assess student outcomes in more direct and less intrusive ways? In partnership with a residential EE organization, we are developing 'embedded' measures of social-emotional learning outcomes that are unobtrusive, easy-to-administer and integrated into learning experiences. We discuss our design process, challenges, and feasibility of using such measures.
Presenters: Archana Kannan, Stanford University; Kathleen O'Connor, NatureBridge

Expanding the Research on Garden-Based Education: Culture and Teacher Voices

Thoroughbred 2

There is growing interest in research related to garden-based education (GBE) in schools; however, a critical examination of culture and teacher voices as they inform research and program development is missing. This panel highlights expansion opportunities in GBE research and explores with participants how to broaden the research.
Presenters: Dilafruz Williams, Portland State University; Sheila Williams Ridge, University of Minnesota; Scott Morrison, Elon University

1:30 PM–3:00 PM

Workshop

Goals, Ambition, and Work-Life Balance: Taking the Next Step in Your Career

Thoroughbred 1

You have finished school and are settling into your EE career. Now what? We discuss setting new goals, assessing personal ambition, and pursuing leadership roles while avoiding burnout. We welcome participation from EE community members at all career stages, as this discussion will ideally include diverse perspectives.

Presenters: Susan Caplow, University of Montevallo; Kathayoon Azra Khalil, Seattle Aquarium; Kathryn Stevenson, North Carolina State University



1:30 PM–3:00 PM

Panels and Presentations

Culturally Responsive Evaluation Leading to Increased Equity of Educational Outcomes

Thoroughbred 3

How can EE programs infuse evaluation efforts with culturally responsive evaluation (CRE) practices? To spark audience discussion, professional evaluators reflecting three geographic case studies (Colorado, Delaware River watershed, and Oregon) will describe their work to increase CRE with individual practitioners, with organizations, and collectively across organizations.

Presenters: Karyl Askew, Karyl Askew, PhD; Elizabeth McCann, Antioch University-New England; Steven Braun, eeRise; Rachel Becker-Klein, Two Roads Consulting; Corrie Colvin Williams, Blue Lotus Consulting & Evaluation, LLC; Jean Kayira, Antioch University New England
Moderator: Charlotte Clark, Duke University

Practitioner Research and the Critical Friend: Moving ECEE Toward ECEfs

Thoroughbred 5

Early childhood teachers are underprepared to engage children in true sustainability initiatives. Yet, through practitioner research, supported by a “critical friend,” teachers go beyond EE activities implementation to employing research and theory-based projects, embracing a reflective process for self-study, support of children’s agency, and promotion of a sustainable world view.

Presenters: Victoria Carr, University of Cincinnati; Sue Elliott, University of New England; Rachel Konerman, University of Cincinnati Arlitt Center for Education, Research and Sustainability; Sue Schlembach, University of Cincinnati; Leslie Kochanowski, University of Cincinnati

Research on Assessing Connection to Nature

Thoroughbred 2

NAAEE is developing a guide to help researchers and practitioners identify appropriate tools to assess connection to nature. The process has identified gaps and needs. This panel will discuss how research can be most useful in assessing our connections to nature.

Presenters: Louise Chawla, University of Colorado–Boulder; Gabby Salazar, University of Florida; Nicole Ardoin, Stanford University; Cathy Jordan, Children & Nature Network

Moderator: Martha Monroe, University of Florida

3:15 PM–4:30 PM

Poster Session

Patterson Ballroom

Assessing the Effectiveness of CitySprouts Early Start with STEM Initiative

The CitySprouts Early Start with STEM Initiative project includes a yearlong series of site-based professional development workshops structured to build teachers’ STEM knowledge and effective teaching strategies for STEM and social emotional competency. This research poster highlights the first round of evaluation data on these workshops.

Presenter: Jeffrey Perrin, Lesley University

Blending Deliberation and Information

Deliberative discussions engage participants in discussions of their opinions. For many environmental issues, however, opinions should be informed by information. But programs that provide information often stifle discussion! We are exploring how to accomplish both and evaluate outcomes through the CIVIC program in Florida.

Presenters: Natalie Cooper, University of Florida; Martha Monroe, University of Florida

Building Capacity for Local Environmental Practice Through Online Learning

This research will examine the effect of online peer mentoring and interventions to increase self-efficacy on online participants’ post-course environmental education and stewardship practices. The results will address the environment and education Sustainable Development Goals and further the ability of online course providers to offer impactful online learning at scale.

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



Community Gardens, Educational Workshops, and Family Sustainability

A mixed methods approach was employed examining the impacts of community garden based educational workshops in families’ sustainable behavior. Data collected through surveys, observations, interviews, and drawings indicate that families benefited from those workshops through socialization, family recreation, increased gardening skills, and financial benefits. No direct changes in environmental behaviors were reported.

Presenter: Konstantinos Stavrianakis, Indiana University-Bloomington

Comparing Teaching Methods in an EE Field Trip Program

This research is a comparison of single day field trip program effectiveness using a teacher-centered methodology versus an inquiry-based methodology in the form of a 5E lesson plan. The focus was to better understand how and what students are learning in the field by utilizing methods from the classroom.

Presenter: Michelle Pearce, Environmental Educators of North Carolina

Critical Environmental Agency: Collaborating to Envision a More Just Future

Join us in discussing how, when students and teachers deepen conceptual knowledge, engage in identity development, develop a critical consciousness of place, enhance sense of place, and move toward social action, they become empowered to envision a more just future to address emerging or chronic environmental problems their communities face.

Presenters: Lacey Denise Huffling, Georgia Southern University; Heather Scott, Georgia Southern University; Roberta H. Hunter, Rutgers University

Designing for Youths' E-STEM Identities: The STEM Identity Profile Instrument

We introduce the STEM Identity Profile Instrument, an inventory-style survey that yields a combination of E-STEM related affiliations (altruist, conservationist, tinkerer, designer, inventor, and investigator). We used the instrument during out-of-school, E-STEM learning to shape curricular design and study how youth made sense of their E-STEM-linked identity work.

Presenters: Ti'Era Worsley, University of North Carolina at Greensboro; Heidi Carlone, University of North Carolina at Greensboro

Development of Connection with Nature Scale for Taiwanese Adolescents

Given the lack of specific scale for adolescents' nature connection in academia, this study shares a three-dimension scale with 11 items for junior high school learners. The results showed that the Connection with Nature Scale was an appropriate tool with acceptable fit, construct reliability, and criterion-related validity.

Presenter: Yu-Chi Tseng, National Taichung University of Education

Education for Sustainability in the Holy City-Jerusalem

What special characteristics does Education for Sustainability have in a city as diverse as Jerusalem? How do the social, cultural, and religious missions of teachers interact with EE? And what urban policy can make EfS and EE successful under these conditions?

Presenter: Naama Sadan, The Hebrew University in Jerusalem

Environmental Education Field Trips: How Many Visits Does It Take?

Sometimes it can be difficult to know if one-time environmental education field trips make a lasting difference for students. In this project, investigators sought to understand the relationship between repeated exposure to an informal science learning center and students' conservation ethic as part of a conservation education curriculum.

Presenter: Lauren Watkins, Impact by Design, Inc.

Environmental Education in a Bahamian Primary School: Bridging Community and Conservation

My research within the Bahamas focuses on the effects of implementing environmental education at the primary school level in an empowering and culturally relevant manner. The data demonstrates the students' ability to disseminate environmental knowledge across the island, a Caribbean example of children becoming environmental ambassadors bridging community and conservation.

Presenter: Olivia Walton, University of New Haven

E-STEM Higher Education Experiences for Preservice Teachers: An Action Research

We used a teacher-centered action research approach to evaluate the impact of an E-STEM intervention on conceptions of environmental issues and integrated STEM in preservice elementary school teachers. In this session we will discuss the intervention, the findings, and the reflective processes we used in order to identify areas of improvement.

Presenter: Angela Burgess, Indiana University

Evaluating Conservation Education Outcomes in Schools in India's Western Ghats

A new conservation education program for 10- to 13-year-olds is being implemented in India's Western Ghats to nurture an interest in wildlife and to teach students how to better coexist with wildlife. Evaluation research has assessed whether participation influences knowledge, attitudes, and empathy with wildlife, and if program cost influences these outcomes.

Presenter: Gabby Salazar, University of Florida

Examining the Social-Emotional Effects of Garden-Based Education

School gardens are a space for children to (re)connect with nature. The benefits of the outdoors for youth development include strengthening noncognitive skills that lead to success. This in-progress research project examines the social-emotional effects of garden-based education at a Title 1 elementary school in North Carolina.

Presenters: Scott Morrison, Elon University

Exploring the Impact of Multimedia Environmental Education on Home Practices

Will a multimedia environmental education program using songs and animations have any impact on children and their families? Through the lens of social practice theory, this study explores impact on household domains like water, energy, and food, and factors that help or hinder any process of change.

Presenter: Victoria Circus, The University of Sheffield

Gaining Perspective: Insights From a Culturally Sustaining Analysis of Qualitative Program Evaluations

This work explores the program evaluations of a residential environmental education program through a lens of culturally sustaining critical pedagogy. The research engages how equity-focused environmental programs achieve their educational goals, and also contributes to the program and others like it by suggesting mechanisms through which culturally sustaining practices can actually be enacted.

Presenters: [Juan Miguel Arias, Stanford University](#)

How Middle School Students Conceptualize Sustainability in Farm-to-School Programming

Farm to school (FTS) is a growing educational field, and an important way that environmental education can reach into the K-12 school day (USDA 2015). Our project takes a new angle on FTS research, focusing on how this educational movement impacts student thinking around sustainability.

Presenter: [Andie Bisceglia, Grow It Know It](#)

I Didn't Know What Science Was or Could Be

Citizen science promotes student engagement in environmental justice and interest in STEM education and careers. This qualitative study reports positive self-efficacy in science for youth who participated in an informal citizen science project. Authors emphasize the role of mentors and authentic science engagement to change students' perceptions of science.

Presenter: [Michele Koomen, Gustavus Adolphus College](#)

"I Gotta Touch That?" Attitudes Regarding Scary or Disgusting Science

When we take our preservice teachers outside for ecological investigations, many complain about it being "gross." As these individuals will one day teach students, it is important to understand their attitudes towards "disgusting" and "scary" science and how those attitudes affects their self-efficacy towards teaching about these concepts.

Presenter: [Nichole Nageotte, Indiana University](#)

Increasing Climate Change Concern of Parents Through Their Children

As the impacts associated with climate change grow increasingly complex, the need for a citizenry prepared to address them cannot be overstated. Come visit this poster, where we will discuss the exciting results of an experiment aimed at increasing climate concern of parents through their children.

Presenter: [Danielle Alexis Lawson, North Carolina State University](#)

The Influence of Children's Participation in Nature Activities

This study divided the participants into an experimental group and a comparison group. The nature camp and rural camp performed significantly better than the pre-tests of "nature connection," "pro-environmental behavior," and "quality of life." The rural group "ecological self" and "appreciate nature" positively affect the pro-environmental behavior.

Presenter: [Tzuhui Tseng, National Tsing Hua University](#)

Intergenerational Learning Beyond the Immediate Family: Students as Environmental Change Agents

This poster presents data from an investigation of intergenerational learning through marine debris programming. We hypothesize that student program participation will lead to increased knowledge of marine debris, environmental self-efficacy, and pro-environmental behaviors. We hypothesize that community members will report higher perceived importance of using scientific data in environmental decision-making.

Presenter: [Jenna Hartley, North Carolina State University and ORISE/US Environmental Protection Agency](#)

Learning from Environmental Education in India: Opportunities and Limitations

India hosts a system of government-supported environmental education centers throughout the country, which conduct a diversity of programs for adults and children. This research analyzes India's programs and asks what can be learned from them by other developing countries as well as by environmental education practitioners in the U.S.

Presenters: [Rebecca Johns, University of South Florida-St. Petersburg](#); [Rachelle Pontes, University of South Florida-St. Petersburg](#)

A Mixed-Methods Approach to the Impacts of Field Trips on Urban Adolescents

The impacts of a one-day wetland field trip on the environmental knowledge, feelings, and behaviors of a group of urban middle school students are explored. Changes in student connectedness to nature and willingness to carry out pro-environmental behavior are quantitatively measured, while qualitative statements allow the student voice to come through.

Presenter: [Katherine Hoover, Texas Tech University](#)

Modeling an Inter-Institutional Faculty Development and Teaching Community

The Trillium Sustainability Workshop is an annual daylong course to build capacity to teach sustainability across the curriculum. For the past decade, researchers at Duke have brought together those with teaching responsibilities from institutions across North Carolina. We want to share our successes and inspire others to create similar networks.

Presenters: [Noelle Wyman Roth, Duke University](#); [Charlotte Clark, Duke University](#)

A Pilot Study of Validating Environmental Identity Scale in Taiwan

Environmental identity was a self-definition about how environments become a meaningful part of who we are. The purpose of this study is to test and validate the revised Environmental Identity Scale (Clayton, 2019) in the Taiwanese context. I will share the result and discuss its influence on environmental behaviors.

Presenter: [Yu-Chi Tseng, National Taichung University of Education](#)

Place, Practice, and Identity in a Positive Youth Development Program

This poster presents preliminary results from an engaged study with the positive youth development organization, Rocking the Boat. The goal of the research is to explore the intersections of place, stewardship practice, and the development of group identities among youth participants.

Presenter: [Anne Armstrong, Cornell University](#)



A Science Outcomes Study Using the “Growing Up WILD” Curriculum

A multiple treatment plus control research design with pretest and posttests was utilized to determine if “Growing Up WILD” (GUW) activities, in conjunction with a nature-based field trip, impacted children’s science outcomes. Children who participated in GUW activities attained significantly higher posttest scores. Gender and pretest scores were also predictors.

Presenter: [Meg Gravil, University of Louisville](#)

Searching for Situated Decoding of Gender in Forest Schools

Within forest schools, the coexistence of traditionally feminine- and masculine-coded practices creates a unique domain for gender expression. This in-progress research project explores how forest schools might decode gender expectations and offer children more options for gender expression.

Presenters: [Abigail Decker, Elon University](#); [Scott Morrison, Elon University](#)

The Social Impact Measurement of Nature Education Organizations in China

To attract audiences and sustain funding, nature education organizations need tangible accountability for the social impact created. My research develops a social impact measurement for nature education organizations in China. The results provide recommendations on how to measure and expand social impact on nature education organizations in China.

Presenters: [Mi Yan, Cornell University](#); [Marianne Krasny, Cornell University](#)

Statewide Census of Environmental Learning in Maine

Maine conducted a “state of the state” initiative for environment education in both formal and informal learning contexts. This poster will share our process for developing a survey and strategy to engage multiple audiences and findings from our state that are helping to inform needs for the field moving forward.

Presenters: [Alexandria Brasili, Maine Mathematics and Science Alliance](#); [Ruth Kermish-Allen, Maine Mathematics and Science Alliance](#)

Students of Color Identify Ways Environmental Faculty Can Advance Racial/Ethnic Diversity in Undergraduate Programs

Concerns of students of color studying environmental science led to a grounded theory study on the experiences of students of color in undergraduate environmental programs. Results inform environmental programs how to improve their racial and ethnic diversity and, thus, contribute to a more diverse environmental workforce and equitable environmental solutions.

Presenter: [Tania Schusler, Loyola University Chicago](#)

Studying eSTEAM: How Arts Interaction Sparks Engagement in Environmental Education in Pre-K–8 Classrooms

Practicing pre-K–8 teachers visited Springs Eternal: Water, Hope, Change, an art exhibit, as part of a comprehensive professional development project focused on integrating EE across the curriculum. We will share the ways in which the teachers reacted and planned to shift their teaching as a result of this visit.

Presenters: Lauren Madden, The College of New Jersey

Using Citizen Science to Build STEM Networks for Underrepresented Students

The Caribbean experienced two category 5 hurricanes in 2017. Following, our school embarked on a citizen science project with Harvard University and Virgin Islands National Park to create a STEM network and pathways for underrepresented students. We will discuss how citizen science can build STEM networks and pathways.

Presenter: Melissa Rian Wilson, Gifft Hill School

Waves of Emotion: Getting a Feeling for Ocean Education

This project investigated the landscape of motivations, strategies, and goals of informal ocean science centers in Orange County, California. The objective was to understand how ocean education is put into action on the ground across the county, and how cohesive the expectations for outcomes are within the environmental education for sustainability framework.

Presenter: Maureen Purcell, University of California-Irvine

Youth Interactions with Environmental Data in Community and Citizen Science

How can producing data and analyzing large datasets support environmental learning and youth agency? Drawing on case studies from youth work with community and citizen science data, we will discuss youth interactions with data, how these interactions can make learning meaningful, and design implications.

Presenter: Emily Harris, BSCS Science Learning

4:00 PM–6:00 PM

Research Symposium Reception

Patterson Ballroom



Wednesday, October 16

7:30 AM–9:00 AM

Graduate Student Breakfast

Thoroughbred 4

9:00 AM–9:15 AM

Welcome

Patterson Ballroom

9:15 AM–10:15 AM



Keynote

Dr. Nicole Ardoin
Patterson Ballroom



Nicole Ardoin, PhD, and the scholars in her Stanford Social Ecology Lab group, research opportunities to engage individuals and communities in sustained pro-environmental practices over time. They consider the role of connection to place and environmental learning in everyday life in sparking, supporting, and maintaining those practices. Nicole has a joint appointment in the Stanford Woods Institute for the Environment and the Graduate School of Education. She is the inaugural Emmett Family Faculty Scholar in the School of Earth, Energy, and Environmental Sciences and the Sykes Family Director of the Emmett Interdisciplinary Program in Environment and Resources. On campus, she is an advisor for the Haas Center for Public Service, the Jasper Ridge Biological Station, and the John Gardner Center for Youth and their Communities. Off campus, Nicole is an Associate Editor of *Environmental Education Research*, and a consulting editor for the *Journal of Environmental Education and Children, Youth, and Environments*. She is a trustee of the George B. Storer Foundation and an advisor to the Blue Sky Funders Forum, the North American Association for Environmental Education, NatureBridge, Project Learning Tree, the Student Conservation Association, and Teton Science Schools. Nicole has a PhD in Social Ecology from the Yale School of Forestry & Environmental Studies.

10:45 AM-12:15 PM

Workshops

Making Sense of Environmental Education Research: Strategies for Access, Review, and Synthesis

Thoroughbred 1

Environmental education research studies include a diversity of methodological orientations, themes, and outcomes. This workshop provides skill-building strategies for rigorous reviews of studies. Participants will learn how to (a) access large numbers of relevant studies, (b) develop reliable criteria for inclusion, and (c) synthesize to make research accessible beyond academia.

Presenters: Dilafruz R. Williams, Portland State University; Cathy Jordan, Children & Nature Network; Michael Barnes, University of Minnesota-Twin Cities

Professional Development Workshop for Graduate Students or Early Career Professionals in EE

Thoroughbred 2

Join us in a hands-on, three-station workshop organized by graduate students. The 20-minute stations include a CV/Resume station, a Social Media & Academia station, and a station on Time Management & Writing Groups. To maximize your time in this workshop, please bring a printed or electronically accessible version of your Resume/CV.

Presenters: Jenna Hartley, North Carolina State University and ORISE/US Environmental Protection Agency; Anne Armstrong, Cornell University; Nicole Bowers, Arizona State University; Marijke Hecht, University of Pittsburgh; Roberta Hunter, Rutgers University; Steven Jackson, North Carolina State University; Danielle Alexis Lawson, North Carolina State University; Naama Sadan, The Hebrew University in Jerusalem



10:45 AM-12:15 PM

Panels and Presentations



Frameworks and Theories of EE: Place-Based Politics, Cultural Constructivism, and Engaged Scholarship

Thoroughbred 3

- Place as Political Entity: Rethinking Place in Environmental Education**
 How do we cultivate environmental citizens to tackle environmental controversies and act politically? This presentation elaborates on the significance of embracing place as political entity in place-based education in order to build in students the political competencies to wrestle with the complexity of place and politics of place in sustainability.
Presenter: Yun-Wen Chan, Texas State University
- Cultural Constructivism: Understanding the Context of Nature-Knowing**
 How do we truly know nature and make sense of an outdoor environment? Cultural constructivism is an epistemological approach to outdoor education that recognizes the power of one's unique culture in creating meaning out of what is perceived with the five senses. Nature-knowing is directly situated and built within a cultural environment.
Presenter: Steph Dean, George Mason University
- Bridging Political Ecology and the Learning Sciences, Towards Engaged Scholarship**
 This session presents a framework for augmenting our approach to environmental education research through a synthesis of political ecology, the learning sciences, and participatory methods. A survey of key examples highlights interdisciplinary use cases and themes that can support the development of new and innovative approaches to practicing engaged scholarship.
Presenter: Lee Frankel-Goldwater, University of Colorado-Boulder

The Legacy of Carol Saunders: Conservation Psychology and Environmental Education

Thoroughbred 1

Conservation psychology brings researchers from different disciplines together to understand how to motivate and facilitate behaviors that conserve and restore the natural world. This panel shares the legacy of Carol Saunders, who helped catalyze this field and who broadened the boundaries of environmental education through interdisciplinary contributions.

Presenters: Amy Bodwell, Cheshire County Conservation District; Martha Monroe, University of Florida; Kathayoon Azra Khalil, Seattle Aquarium; Ruth Kermish-Allen, Maine Mathematics and Science Alliance; Kathryn Stevenson, North Carolina State University

Moderator: Louise Chawla, University of Colorado-Boulder

1:30 PM–2:30 PM

Roundtable Discussions

Patterson Ballroom

Addressing Affect and Socio-Emotional Learning in EE Evaluation and Research

- **Building Researcher-Teacher Relationships: A Collaborative Approach To EE Professional Development**

This session will address the question of how we can improve EE in our schools through building researcher-teacher relationships in developing collaborative professional development sessions. The roundtable will involve sharing the process of conducting needs assessment interviews with teachers followed by discussion regarding the importance of relationship-building in EE collaborations.

Presenters: Erica Blatt, Rowan University

- **Toward a Framework for Teaching and Learning Outside**

Research suggests there are multiple benefits to being outside, yet many teachers are reluctant to venture from the classroom with their students. In response, we have been working on a framework that identifies and scaffolds where and how teaching and learning can happen in outdoor learning environments.

Presenters: Scott Morrison, Elon University

Current and Emerging Trends in Early Childhood Environmental Education Research

Learn about the latest research published in the International Journal of Early Childhood Environmental Education, including a special issue on post humanist perspectives, share your own research interests, and discuss what's needed to continue to advance research in early childhood environmental education.

Presenters: Betty Olivolo, NAAEE; Yash Bhagwanji, Florida Atlantic University

“New” Frameworks for EE Research: New Materialist, Post-Humanist, and Post-Qualitative Approaches

- **Technique to Technicity: Becoming in Qualitative Inquiry Through Writing Techniques**

In this discussion, I elaborate on techniques recently suggested in the literature to strengthen writing in qualitative and post-qualitative inquiry. I give examples of these techniques, discuss how they may add to the process of writing as inquiry, and engage the audience in thinking and using these techniques.

Presenter: Nicole Bowers, Arizona State University

- **The Promise of New Materialism in Sustainability Education Research**

Driven by compelling questions posed by an education for sustainability researcher from an international research team, participants in this session will engage in a thought-provoking conversation about new materialism and post humanism as aspirational frameworks for conducting ethically inclusive research in marginalized regional and rural communities.

Presenter: Sherie McClam, Manhattanville College

Unpacking Environmental Literacy at the Community Scale

Current perspectives on environmental literacy tend to focus on the individual. However, given the social nature of learning, environmental literacy needs to be better understood at the collective level. In this session, we will explore what environmental literacy may look like collectively and how we may examine its development.

Presenters: Mele Wheaton, Stanford University; Archana Kannan, Stanford University

1:30 PM–2:30 PM

Panels and Presentations



Assessing Environmental Behaviors Through the Environmental Stewardship Scale

Thoroughbred 3

In this session, we introduce a new instrument aimed at measuring environmental behaviors. The General Environmental Stewardship Scale measures the intensity of commitment to environmental behaviors from common activities to transformative lifestyle changes. We will describe the scale's validation efforts and data analysis techniques.

Presenter: Tina Phillips, Cornell Lab of Ornithology

Critical Community-Based Food Systems Research: Uncovering Tensions and Possibilities

Thoroughbred 5

This panel explores the critical role of the research process in producing critical food systems education research that achieves environmental, economic, and social justice goals. Facilitators consider how to navigate activist scholar positionalities and how to craft just collaborative processes with schools, activist groups, and community organizations.

Presenters: Teresa Lloro-Bidart, California State Polytechnic University-Pomona; Sarah Stapleton, University of Oregon; Dilafruz Williams, Portland State University

Editors' Panel: Publication Processes and Impacts

Thoroughbred 1

Join us for a candid discussion on the processes and potential impacts of publishing environmental education research in books, peer-reviewed journals, and nontraditional venues. Scholars with experience writing and editing books, as well as serving as editors on leading EE journals will host the session.

Moderators: Martha Monroe, University of Florida; Alan Reid, Monash University; Marcia McKenzie, Sustainability Education Research Institute, University of Saskatchewan

Methodologies and Strategies of Research-Practice Partnerships

Thoroughbred 4

- **Navigating a Research-Practice Partnership in an Urban Environmental Education Program**
What are the benefits and challenges of a research-practice partnership (RPP)? This presentation focuses on an RPP between university-based researchers and urban environmental educators. RPPs require increased time investment, ongoing negotiation, and flexibility. We will address strategies for meeting these challenges from both the researcher and practitioner perspectives.

Presenters: Marijke Hecht, University of Pittsburgh; Taiji Nelson, Pittsburgh Parks Conservancy

- **The Dynamic of Conducting Research in Early Environmental Education**

The research process in environmental education is dynamic. In this presentation, we will talk about the methodological evolution and the active roles of different parties in shaping and facilitating the development of the research process. We argue that as researchers we should be flexible and comfortable with this dynamic.

Presenters: Ann Rossmiller, The University of Cincinnati; Yuchang Yuan, University of Cincinnati; Leslie Kochanowski, University of Cincinnati

Multimodal Critical Discourse Analysis: Renewable Energy Education, Media, and Beyond

Thoroughbred 2

This presentation will explore multimodal critical discourse analysis, an illuminating methodology for examining the representation of salient issues through speech, text, and imagery in media, policy, and curricula. Sociocritical renewable energy discourse and education will be discussed as an exemplar to prompt attendees to consider their own areas of interest.

Presenter: Gregory Lowan-Trudeau, University of Calgary



2:45 PM–3:45 PM



Closing Keynote

Dr. Carolyn Finney
Patterson Ballroom

Carolyn Finney, PhD, is a storyteller, author and a cultural geographer. She explores how issues of difference impact participation in decision-making processes designed to address environmental issues. More broadly she likes to trouble our theoretical and methodological edges that shape knowledge production and determine whose knowledge counts. Along with public speaking, writing, consulting and teaching, Carolyn has held faculty positions at Wellesley College, the University of California–Berkeley, and the University of Kentucky. She has been a Fulbright Scholar and a Canon National Parks Science Scholar, and received a Mellon Postdoctoral Fellowship in Environmental Studies.

She has served on the US National Parks Advisory Board for eight years, which assists the National Park Service in engaging in relations of reciprocity with diverse communities. Carolyn has been interviewed by media outlets including NPR, Sierra Club, *Boston Globe*, and *National Geographic*, and has written op-eds for *Outside Magazine* and *Newsweek*. Her first book, *Black Faces, White Spaces: Reimagining the Relationship of African Americans to the Great Outdoors* was released in 2014 (UNC Press). The aim of her work is to develop greater cultural competency within environmental organizations and institutions, challenge media outlets on their representation of difference, and increase awareness of how privilege shapes who gets to speak to environmental issues and determine policy and action.

Carolyn is currently working on a number of projects including a new book (creative non-fiction) that explores identity, race, lived experience and the construction of a black environmental imaginary, and a performance piece about John Muir (*The N Word: Nature Revisited*). This fall she is the Artist-in-Residence for the Kentucky Foundation for Women’s Fall Residency Program and she is doing a two-year residency in the Franklin Environmental Center at Middlebury College as the Environmental Studies Professor of Practice.

3:45 PM–4:30 PM



Symposium Closing

Patterson Ballroom

Presenters:
Dr. Marcia McKenzie, University of Saskatchewan, Research Symposium Chair

Dr. Olivia Aguilar, Denison University, Research Symposium Co-Chair



Photo: scbarchitects.com



Stay connected to the group!

Research and Evaluation eePRO Group
naaee.org/eeopro



 **naaee**

**49TH Annual
Conference**

October 14-17, 2020

**17TH Annual
Research
Symposium**

October 13-14, 2020

TUCSON, ARIZONA



In partnership with:



TUCSON2020

naaee.org

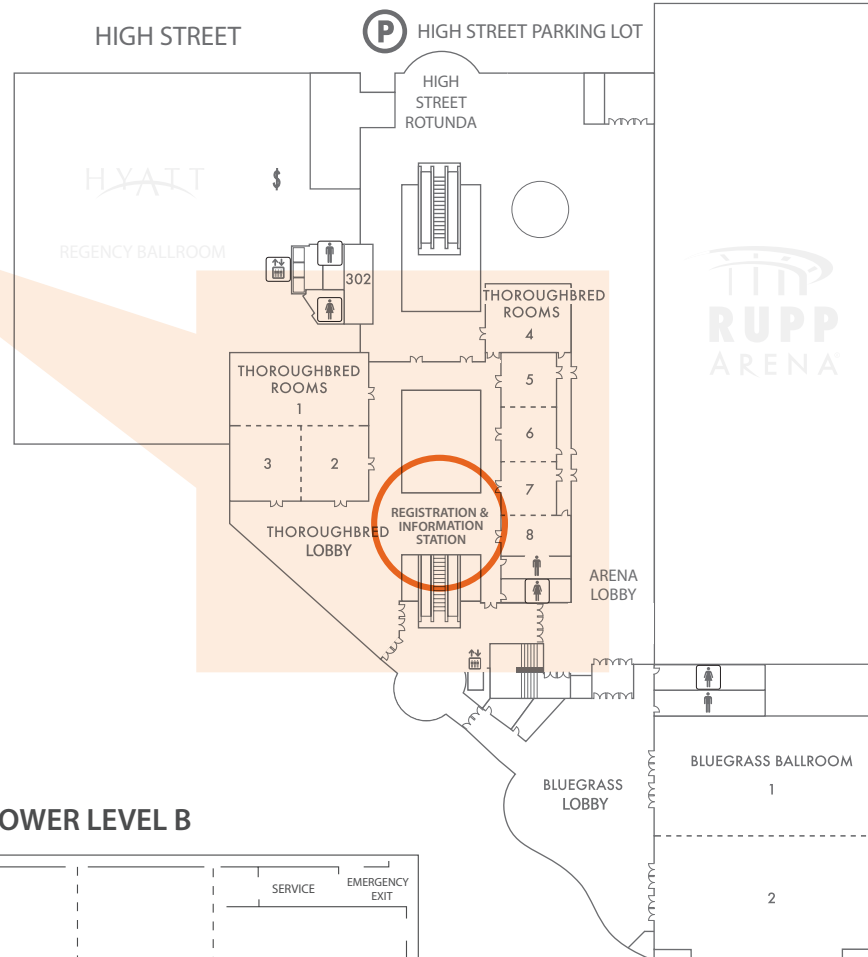
From bluegrass fields to saguaro forests

"Tucson had opened my eyes to the world and given me ... a taste for the sensory extravagance of red hot chiles and five-alarm sunsets."

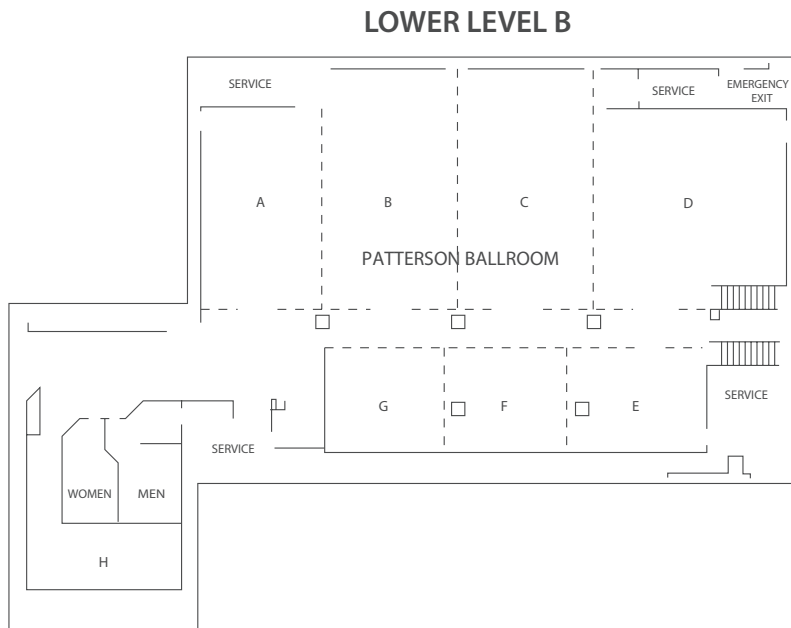
—BARBARA KINGSOLVER

LEVEL THREE
Lexington Convention Center
Thoroughbred 1-5

Wednesday's buffet lunch will be served in Elkhorn B-D on Level 1 in the Lexington Convention Center



LOWER LEVEL B
Hyatt Regency Lexington
Patterson Ballroom





Education We Need for the World We Want



naaee

North American Association
for Environmental Education

naaee.org

Photo: @wynand_uys/Unsplash.com



LEX2019



Follow @TheNAAEE on social media!



Follow @TheNAAEE on Instagram for NAAEE2019 photos and videos!



Follow us on Facebook to stay connected to #NAAEE2019 trends and events!



Access our conference mobile app via your app store: Download "CrowdCompass AttendeeHub" and search for "NAAEE".