

**2022 Research Symposium Preliminary Schedule: In-Person Concurrent Sessions**

Title	Summary	Participants	Date	Start Time Mountain Standard Time	End Time Mountain Standard Time	Session Format	Delivery Method
<p><i>Arizona does not observe Daylight Saving Time. All session times are indicated in Mountain Standard Time; Mountain Standard Time is equivalent to Pacific Daylight Time.</i></p> <p><i>This is a preliminary schedule; sessions, times, and presenters are subject to change.</i></p> <p><i>The final schedule will be available through the conference platform when it launches in October.</i></p> <p><i>The platform includes the opportunity to add sessions to your calendar.</i></p>							
<b>In-Person Concurrent Sessions—Tuesday, October 11</b>							
Using a Land-Based Healing Approach In Addressing Well-Being Of Urban Khmer Youth	Chamkar Khmer Mitepeap (Khmer Friendship Garden) is the first intergenerational program focusing on serving Khmer elders and youth in Seattle/South King County. This workshop will share cross-sectional survey results of urban Khmer youth participants, immerse participants in Khmer cultural practices, and explore "trusted messenger" approaches when using evidence-based research to create impact in community.	Thyda Ros, University of Washington; Stephanie Ung, Khmer Community of Seattle King County	Tuesday, October 11	10:00am	10:45am	Research Panel	in-person
Anxiety, Hope, Action: An international roundtable on emotionally-mediated education for climate action	Educators are preparing young people for a future shaped by climate change and our collective response to the climate crisis. In this roundtable, we'll be sharing research-based illustrations of climate-related education that engages with anxiety, hope and action from around the world (Australia, UK, USA) to foster a comparative dialogue.	Bill Finnegan, University of Oxford; Martha C. Monroe, University of Florida; Alan Reid, Monash University; Kathryn Stevenson, NC State University	Tuesday, October 11	10:00am	10:45am	Research Roundtable	in-person
Designing Accessible EE Programs: Universal Design for Learnings' Potential	How does a field of vastly different programs and locations address accessibility, historical exclusion, and injustice in program design and practice? Strategies that support lasting institutional change and foster inclusive practices pave the road for future success and impact of EE organizations. What are the best tools for measuring impact?	Michelle Pearce, Environmental Educators of North Carolina; Michelle Silvers, University of Arizona	Tuesday, October 11	10:00am	10:45am	Research Roundtable	in-person
Healer, Joygiver, Friend: Documenting Nature Connection Benefits in Higher Ed	Many in higher education are creating courses and opportunities for students to connect with nature as a way to promote mental health, wellbeing, and (re)connection with each other and the environment. What are these approaches, and how might we collectively document and assess these initiatives?	Victoria Derr, California State University, Monterey Bay; Patty Born, Hamline University School of Education; Cyna Stehr, Arizona State University; Molina Walters, Arizona State University	Tuesday, October 11	10:00am	10:45am	Research Roundtable	in-person
Systematic Scoping Review of Psychosocial Factors of Climate Change Inaction	The complexity and interdisciplinarity of climate change research create confusion about key areas to study and emphasize. We share how a systematic scoping review process is helping uncover critical psychological and social factors of climate change inaction and future research areas, with a focus on implications for climate change education.	Nicole Ardoin, Stanford University; Marcia McKenzie, University of Melbourne; Alison Bowers	Tuesday, October 11	10:00am	10:45am	Research Roundtable	in-person
Researching Youth Agency in the Anthropocene	Agency is required to set appropriate goals, create a process for achieving those goals, and gain competence to take actions. Research is needed to help schools, educators, and non-formal programs build youth agency. We will present a framework for research on youth agency in the Anthropocene and invite critique.	Martha C. Monroe, University of Florida; Chris Eames, University of Waikato; Peta White, Deakin University; Nicole Ardoin, Stanford University	Tuesday, October 11	11:15am	12:00pm	Research Panel	in-person
A Mixed-Method Network Analysis Of Environmental Professional Associations	Environmental academics often associate with multiple professional organizations in order to get their interdisciplinary needs met. I am interested in examining the structure of/experiences in the environmental professional landscape. Ideally, we will find ways to collaborate across these professional spaces, as well as on this specific project!	Susan Caplow, University of Montevallo	Tuesday, October 11	11:15am	12:00pm	Research Roundtable	in-person

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Deepening Empathy Through a Community of Practice Approach	In the context of COVID-19 and global challenges, how might a Community of Practice support teacher capacity and offer insight into strategies to foster empathy for people, animals, and the planet? This discussion will explore Communities of Practice as an empowering and participatory research methodology.	Claire Curran, University of MN Duluth; Julie Ernst, UMD	Tuesday, October 11	11:15am	12:00pm	Research Roundtable	in-person
Early Childhood Environmental Education Research: Reflection, New Directions, and Supports Needed	Participate in advancing the causes of the International Journal of Early Childhood Environmental Education. As the journal completes its 10th year of publishing research, contribute your thoughts for special issues, innovations required in research, and improvements needed in the journal's platforms. Also learn how you can be involved as consulting editors and special issue editors.	Christy Merrick, NAAEE; Betty Olivolo, NAAEE; Yash Bhagwanji, Florida Atlantic University	Tuesday, October 11	11:15am	12:00pm	Research Roundtable	in-person
Environmental Education as a Trauma-informed Practice	Environmental education researchers, practitioners, and stakeholders will discuss the impacts of trauma on their communities. Three projects have been designed to explore the intersection of EE and trauma. These will be presented to provide context and frame potential opportunities to integrate trauma-informed practices in outdoor learning.	Emily L. Hayne, The Pennsylvania State University; Danielle Frank Lawson, The Pennsylvania State University	Tuesday, October 11	11:15am	12:00pm	Research Roundtable	in-person
Participatory building of capacities in the Peruvian environmental education field	Environmental education in Peru has a long tradition of organizations and individuals working to protect the biodiversity that the country guards while involving citizens in the process. Nevertheless, the field urges to be organized, framed, and updated through the building of capacities that sustain these efforts more efficiently.	Ximena Fabiola Gallegos Gutierrez, Community Garden Connections	Tuesday, October 11	11:15am	12:00pm	Research Roundtable	in-person
Conducting A Scoping Review In Environmental And Sustainability Education.	Scoping reviews are a relatively underexplored type of knowledge synthesis in environmental and sustainability education. Participants will explore how their development and application could benefit researchers who aim to provide an overview of the literature on a specific topic, alongside the main research implications, advantages and challenges of scoping reviews.	Alan Reid, Monash University	Tuesday, October 11	1:30pm	2:30pm	Research Workshop	in-person
Early Childhood Education for Sustainability: Are STEM and Nature Enough?	Children are quite capable of being agents of change for sustainability, but STEM and time in nature are too simplistic for adopting sustainable worldviews and the ethical stance necessary for doing so. Come explore concepts, theories, and emerging research that transcends ECEE, moving the field toward disruptive and transformational ECEfS.	Victoria Carr, University of Cincinnati; Leslie J Kochanowski, University of Cincinnati- Arlitt Center for Education, Research & Sustainability; Sue Schlembach, University of Cincinnati	Tuesday, October 11	1:30pm	2:30pm	Research Workshop	in-person
Looking Forward: Issues and Cross-Cutting Questions from EE Researcher Perspectives	The first of two collaborative workshops at the research symposium and main conference brings together EE researchers and practitioners to collaboratively envision the future of EE research. What are the big questions we should tackle? How do we better connect research and practice? Where do we go from here?	Danielle Frank Lawson, The Pennsylvania State University; Roberta Howard Hunter, Michigan State University; Marijke Hecht, The Ohio State University	Tuesday, October 11	1:30pm	2:30pm	Research Workshop	in-person

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A Community-Informed Process for Collecting Statewide Environmental Learning Data	Teach ME Outside has used a community-informed, relational process to design a second landscape analysis survey of the environmental learning field in Maine. Our strategy utilizes a culturally responsive approach, using methods such as townhalls, workshops, advisory groups, and external experts to prioritize additional question sets.	Alexandria Brasili, Maine Mathematics and Science Alliance; Ruth Kermish-Allen, Maine Mathematics and Science Alliance; Olivia Griset, Maine Environmental Education Association	Tuesday, October 11	3:00pm	3:45pm	Research Roundtable	in-person
Bridging Possible Pathways: Collaborations in Environmental and Science Identity Research	Join a lively conversation inspired by an in-process meta-synthesis of research on environmental and science identities. We will discuss how environmental and science identity literature can better inform each other to produce environmental and social change, and how EE research can contribute to the advancement of these goals.	Susan Caplow, University of Montevallo; Roberta Howard Hunter, Michigan State University	Tuesday, October 11	3:00pm	3:45pm	Research Roundtable	in-person
Climate Change Engagement: Initiating a Dialogue Between Experts and Non-Experts	How can we bridge the gap between scientists at the frontlines of climate change and populations who are disengaged with this issue? A new two-phase public outreach framework seeks to answer this question. Join us as we discuss self-efficacy, perceived authenticity, and new research directions in climate change communication.	Katrina Vickery, Oregon State University	Tuesday, October 11	3:00pm	3:45pm	Research Roundtable	in-person
Designing national environmental science units that invite local phenomena adaptation	How can we design national-scale instructional materials for broad use that encourage educators to incorporate local phenomena? We present a nascent design approach for an elementary science unit designed for local adaptation and invite participants to discuss tradeoffs and tensions of using real world phenomena to motivate environmental science learning.	Lisa Kenyon, Maine Mathematics and Science Alliance; Emily Harris, BSCS Science Learning; Lindsey Mohan, BSCS Science Learning; Candice Guy-Gaytán, BSCS Science Learning; Katahdin Cook, Maine Mathematics and Science Alliance; Darryl Reano; Cindy Soule, Portland Public Schools	Tuesday, October 11	3:00pm	3:45pm	Research Roundtable	in-person
Introducing The AZA's Social Science Research Agenda	In this roundtable, we will discuss the Association of Zoos and Aquarium's newly created Social Science Research Agenda. We will present the orienting questions of the agenda as well as facilitate conversations on how researchers may be able to contribute to the fulfillment of the framework.	Kathayoon Khalil; Joy Kubarek, Inform Evaluation & Research	Tuesday, October 11	3:00pm	3:45pm	Research Roundtable	in-person
Social Studies Teachers' Perceptions of Sustainability: A Taiwanese Case Study	Limited research has explored social studies teachers' perceptions of sustainability and environmental and sustainability education in Asian contexts. This proposal addresses a significant need for exploring Taiwanese social studies teachers' perceptions of sustainability. Social studies teachers can and have the responsibility to educate for change toward a sustainable world.	YUN-WEN CHAN, Texas State University	Tuesday, October 11	3:00pm	3:45pm	Research Roundtable	in-person
"It's not just language, it's also political"	Exposure and instruction of Indigenous languages could reorient children's sense of position within the more-than-human world. Language signification and communication open space to disrupt exploitative understandings of human-nonhuman relations, foregrounds reciprocity, and helps question consumptive approaches to land, water, and the organisms that live within these. Can settlers assist revitalize indigenous languages through school-based language programs?	Angela D'Souza, University of Massachusetts, Amherst; Shannon Audley, Smith College; Stefanie Davis, University of Massachusetts Amherst	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person

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2022 Status and Needs of Nonformal and Formal (K–12) Environmental Educators of Pennsylvania	The difference between a resident that is environmentally passive and environmentally literate their educated understanding natural systems. That group is shaped by formal and non-formal educators. The 2022 Pennsylvania EE Survey determines how well non-formal and formal educators understand the MWEE framework and preferred methods of training.	Michella Salvitti, Millersville University; Nanette Marcum-Dietrich, Millersville University of Pennsylvania	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
21st Century Naturalist Identity Development: Relational Processes Between Human And More-Than-Human Beings	We explore empirical and theoretical implications from a study of an informal science program that supports 21st century naturalist identity development. To embrace a slow ontology, our poster will be handmade and will highlight how interactions between youth, educators, and more-than-human nature are iterative and reciprocal.	Marijke Hecht, The Ohio State University; Taiji Nelson, Carnegie Museum of Natural History	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Active Learning Program: Transformative Change and Undergraduate Sustainable Competence Development	Interested in creating environmental education internship programs, transformative learning-based curricula, or qualitative and quantitative student assessments that describe student competence development and transformation? Come learn about the Active Learning Program, an undergraduate, transformative professional and sustainable development course and internship program at the University of Florida.	Angela Melidosian, University of Florida	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Analysis Of Visuals In Environmental Education Textbooks In India, Japan, And Mexico	Environmental challenges range from local to global with a universal context. Visuals add depth, complexity, abstraction and support image-mediated learning. What role do visuals play in achieving the objectives of EE? We analysed Grade VI Science textbooks which revealed that the five objectives of EE were fulfilled, variously	Rajeswari Namagiri, Independent	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
CCE Engagement in Annex I Parties' National Communications Within UNFCCC	Drawing data on 44 Annex I Parties' National Communications (NCs) within the UNFCCC, this research conducts document analysis on Annex I Parties' engagement with practices and policies related to Action for Climate Empowerment (ACE), including signs of the assumptions of economic orientations, ways of learning, and human-nature relationships.	Yanyu Li, University of Saskatchewan	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Community Nature Journaling: Socioemotional and Learning Outcomes for Participants	Nature journaling is not new to EE, but has seen a resurgence as an educational and therapeutic activity for many populations during the COVID-19 pandemic. Through a 12-month data collection effort, this project seeks to better understanding the perceived benefits and learning outcomes stemming from a community nature journal program	Lucy R. McClain, Shaver's Creek Environmental Center - Penn State University; Amy Eldredge, Shaver's Creek Environmental Center; Alexa Sarussi, Shaver's Creek Environmental Center - Penn State University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Coordinated distributed experiments with common milkweed: Potential for student projects	This practice embedded research focused on implementation of a coordinated distributed experiment (CDE) of common milkweed using educational networks. Findings highlight faculty use of the CDE to develop environmental content and data skills with their students and describe how undergraduate students promoted education for change with development of K12 curricula.	Michele Hollingsworth Koomen, Gustavus Adolphus College; Emelia Hinrichs, Gustavus Adolphus College; Jake Ross, Gustavus Adolphus College	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person

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CRaTE: Validated Questionnaires to Measure Participants' Cultural Relationships & Topical Exploration	Through a multi-phase validation process, we developed CRaTE, a suite of questionnaires. Together, the questionnaires reflect constructs germane to the relationship between culture and topic-focused learning experiences: a) learners' entrance narratives, b) learners' anticipated learning experiences, c) learning experience quality, d) cultural alignment, and e) learners' motivation to continue learning.	Laura 6304410017 Weiss, COSI CRE	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Curriculum Strategies for Mitigation of Climate Anxiety	Feeling anxious, worried, or concerned about climate change? Your learners might be feeling this too. Learn about a framework for evaluating curriculum that has been created from strategies identified in academic literature and the results from applying the framework in a comparison study of Indigenous science and Western science-based curriculums.	Emily Olsen, The Pennsylvania State University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Development and Validated Results of Outdoor Educator Identity Research Instrument	This proposed session presents the development, validation, and results of a survey instrument that researchers can use to uncover outdoor educators' (OEs) positional identities. Initial data revealed OEs' strong interest to support whole child and cross curricular learning. Demographic data provided insight into the known lack of diversity in EE.	Aimee Fraulo; Sarah J Carrier, North Carolina State University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Differential Impacts of an EE Program Among Linguistically Diverse Learners	Linguistically diverse youth represent an important, yet understudied demographic group in EE. We examined how a marine debris curriculum promoted pro-environmental behaviors among 4th/5th grade students and found clear treatment effects, particularly among linguistically diverse youth. Results call for more asset-based examination of how diverse youth receive EE programming.	Sasha Pereira, Canyonlands Field Institute, Moab UT; National Ability Center, Moab UT; North Carolina State University, Raleigh NC	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Digging Deep: A Justice-Oriented Rhizome Model For Youth Environmental Education	This research poster presents results from qualitative, ethnographic data of urban environmental education programming and its impacts on participants. It articulates rhizomic pedagogy as a framework to incorporate diverse histories of place, knowledges, and community experience in developing sense of place among marginalized youth.	Nicole Lawson	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Digital Place-Based Phenomena: Program Research and Evaluation Results	Iowa Science Phenomena is an online program delivering user-generated, place-based media for science teachers. Iowa PBS and Research Institute for Studies in Education (RISE) conducted research evaluating program efficacy and educator familiarity with place-based teaching. Results demonstrate potential for increased student engagement and the criticality of place-based teaching professional development.	Tiffany Morgan, Iowa PBS; Cori Hyde, Iowa State University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Enduring Outcomes of an Urban Positive Youth Development Program	We present findings from a mixed-methods and engaged research study conducted with alumni of Rocking the Boat, a Bronx-based positive youth development program. Findings demonstrate how urban positive youth development organizations may serve as small anchor institutions: hubs for continuing social-emotional asset development and for civic behaviors.	Anne K Armstrong, Cornell University; Marianne Krasny, Cornell University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person

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Environmental Attitudes, Values, And Practices In Manabi Province, Ecuador	How is environment and sustainability conceptualized in a place both rich in biodiversity and prone to natural hazards? This pilot study explores the narratives influencing EE in Manabi, Ecuador. This poster shares findings from qualitative interviews with community members regarding environment, livelihoods, education, and the 2016 earthquake.	Neela Nandyal, University of Minnesota	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Environmental Educator Perceptions Of Race And Ethnicity In Their Work	Compare how race and ethnicity in the context of a case study at an urban nature center relates to your own research or practice. Discuss examples from a professional development model and consider recommendations for organizations interested in pursuing JEDI initiatives.	Carolyn Waters, Bellarmine University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Environmental Literacy Levels of Pennsylvania Catholic School Teachers	Of the 5.7 million students enrolled in private schools, 2.1 million students attend Catholic schools. As the youth of today are the decision-makers of tomorrow, we explored the environmental literacy levels of teachers within Catholic schools. The results are shocking! Join us as we discuss our findings and brainstorm solutions.	Kendra Weakland, Pennsylvania State University; Kevin Curry, Penn State University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Evaluating Community Action Projects in Nonformal Settings	How should we evaluate efficacy and civic literacy in a nonformal youth club doing community action? We have revised our initial evaluation plan to use a retrospective post scale and pre/post scenarios with reflection worksheets. Come find out what we've learned.	Ailee Odom; Martha C. Monroe, University of Florida	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Examining Pathways for Preparing Future Teachers to Address Climate Change	We examined pathways for K-12 teacher preparation and explored the status of undergraduate students' preparedness, both in content knowledge and confidence levels, to teach climate change literacy to their future students. What are the gaps in Liberal Studies and single subject pathways, and where are opportunities to better prepare future K-12 teachers?	Anne Stephens, California State University, Chico	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
<b>In-Person Concurrent Sessions—Wednesday, October 12</b>							
The Power of Shared-stewardship and Community Engagement to Manage El Yunque National Forest.	The Northeast Region of Puerto Rico fosters one of the most complex management relationships in the Island between federal agencies and local communities. This case study explores socio-ecological connections and shared-stewardship opportunities between the Forest Service at El Yunque National Forest and a local community to inform and promote effective forest management strategies.	Melanie Quiñones Santiago, Cornell University	Tuesday, October 11	4:00pm	5:00pm	Research Poster	in-person
Early Career Mentoring Sessions	Come join experienced EE researchers for informal mentoring over breakfast. Spend time in breakouts on a variety of topics, including publishing, time management, career planning, non-academic careers, and more.	Roberta Howard Hunter, Michigan State University	Wednesday, October 12	7:00am	8:00am	Research Roundtable	in-person
US Climate Change Education Policy: Bright Spots, Gaps, and Trajectories	Curious about what the state of US climate change education policy means for policymaking in the US and beyond? Join us as we discuss research by the Monitoring and Evaluating Climate Communication and Education Project conducted with NAAEE (K-12: 802 Department of Education documents; higher education: policies from 248 institutions).	Marcia McKenzie, University of Melbourne; Kristen Hargis, University of Saskatchewan; Yanyu Li, University of Saskatchewan; Judy A. Braus, NAAEE; Sarah Bodor, NAAEE	Wednesday, October 12	9:00am	9:45am	Research Panel	in-person

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A Pluralistic ESE at the Age of Instrumentalism and Neoliberalism	In this roundtable proposal I intend to explore the possibility of a pluralistic ESE, in contrast with the authoritative, instrumentalist, as well as relativistic versions of ESE. Pluralistic modes of thought from inside and outside of ESE will be used as scaffolding for critical, pluralistic educational framework	Konstantinos Korfiatis, University of Cyprus	Wednesday, October 12	9:00am	9:45am	Research Roundtable	in-person
Keepers of our Place: Community Environmental Monitoring Project	This Community Action Research project involves 3 distinct communities who are neighbours in Calgary, Alberta, Canada (Connect Charter School, Tsuut'ina First Nation School, Mount Royal University-Department of Education). These communities are reconsidering their place as neighbours/community partners who share a geographical space with comparable goals guided by Place/Land-based Education PBE/LBE.	Kevin O'Connor, Mount Royal University	Wednesday, October 12	9:00am	9:45am	Research Roundtable	in-person
Knots in Nature: Designing Augmented Reality and Place-Responsive Environmental Education	The purpose of this study was to examine how augmented reality (AR) could be used to explore the environment by visiting a series of informational markers. When exploring the environment, many aspects may be hidden physically or temporally, hindering engagement and connection -- an AR experience may reveal these hidden elements.	Kelly J Smith, University of Arizona	Wednesday, October 12	9:00am	9:45am	Research Roundtable	in-person
Science, Environmental and Environmental Science Identities: What's the difference?	Environmental education and science education both can help society address environmental problems but the two are often distant. This roundtable will present the frameworks of environmental identity, science identity, and environmental science identity in order to unpack similarities, differences, and utility of these constructs in order to reach shared goals.	Amanda Lindell, UC Davis; Heidi Ballard, School of Education, Univ. of California	Wednesday, October 12	9:00am	9:45am	Research Roundtable	in-person
Signifiers And Empty-Signifiers In ESE: Implications For Teacher Education	This paper problematizes environmental and sustainability education (ESE) signifiers and empty signifiers with implications for teacher education using philosophical and semiotic/semantic analyses. Problematizing such discourse is typically limited to ESE with little consideration given to teacher education. This poses an additional challenge related to a mainstreaming of ESE.	David Bryan Zandvliet, Simon Fraser University; Douglas Karrow, Brock University; Xavier Fazio, Brock University	Wednesday, October 12	9:00am	9:45am	Research Roundtable	in-person
Editors' Panel: Publication Processes and Impacts	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.	Alan Reid, Monash University; Alberto Arenas, University of Arizona; Nicole Ardoin, Stanford University; Yash Bhagwanji, Florida Atlantic University; Patrick Maher, Nipissing University	Wednesday, October 12	10:15am	11:15am	Research Workshop	in-person
Exploring The Sustainable Development Goals for Integration Into Content Areas	Using the Sustainable Development Goals to provide context for K-12 content is one way to help strengthen student's knowledge of sustainability issues and promote agency for change. During this session, participants will explore the SDGs and how to integrate them into existing curriculum.	Jessica Cordaro, University of Wisconsin	Wednesday, October 12	10:15am	11:15am	Research Workshop	in-person

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Exploring The Memories of a Profound Experience With Nature	This study explored the long-term influences of a profound experience with nature—an experience that shifts an individual's view of or relationship with the natural world. Little is known about the long-term effects of a single, memorable experience with nature or how individuals use the associated memories in their lives.	Becky Mathers-Lowery, Arcadia University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Fostering Civic Engagement Through Urban Agriculture Education in New York City	Civically engaged youth can contribute to urban sustainability. This research explores how NYC urban agriculture education programs are fostering youth civic engagement. We will share what we learned from interviews with 22 educators in urban farms, schools, and nonprofits. Findings include how these programs integrate environmental, sustainability, and food justice education.	Alex Kudryavtsev, Cornell University; Natalie Kelly, Cornell University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Fostering empathy in nature preschools: a quantitative exploration of impact	Empathy is a meaningful indicator of prosocial and pro-conservation behavior. Do nature preschools foster the development of cognitive, affective, and motivational empathy in young children? This study explored the potential of nature preschools to foster empathy for people and animals and offers insight into concrete strategies to support empathy development in early childhood.	Claire Curran, University of MN Duluth; Julie Ernst, UMD	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Group Projects For Grownups: Collaborative Partnerships During Informal Remote Teaching	Collaborative partnerships can be plagued with feelings of excitement, nervousness, or even dread. This poster will examine a new collaboration to host virtual science camps during Covid-19. Learn about a qualitative research approach, autoethnography, and how field entries, interviews, and literature led to themes of roles, power, and shared leadership.	Sarah Nuss, Chesapeake Bay National Estuarine Research Reserve in VA	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Impact of a middle-level watershed curriculum on students' career interest	This study investigates changes in students' confidence/efficacy in STEM, 21st-century learning skills, and career interest following participation in a middle-school watershed curriculum that uses Universal Design for Learning (UDL) principles to increase content accessibility. The data show that those with the lowest initial scores benefited most from the curriculum.	Nanette Marcum-Dietrich, Millersville University of Pennsylvania; Steve C. Kerlin, Stroud Water Research Center	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Informal Science Educators' Values: The Role of Place and Content	There is surprisingly little research on the educators that work in these informal settings – informal science educators (ISERs), including environmental educators. This study adds to that literature by investigating the professional identity of ISERs, in particular their values and the role of place and content in their work.	Roberta Howard Hunter, Michigan State University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
It's Raining Ladybugs! Supporting Elementary Teachers' Citizen Science	Our ongoing research project is designed to help elementary teachers effectively integrate citizen science with an emphasis on students learning science in their schoolyards. We share teachers' experiences with the projects and their reflections on their students' reactions to these projects and to outdoor learning.	Sarah J Carrier, North Carolina State University; Christine Goforth	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person



**2022 Research Symposium Preliminary Schedule: In-Person Concurrent Sessions**

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Longitudinal Identity and Behavioral Outcomes from an Environmental Education Experience	There is a need to longitudinally understand post-program outcomes in environmental education. Through a quasi-experimental design, this study utilizes a latent growth curve model to explore how an environmental education experience influences environmental identity and pro-environmental behavior intentions over time. A dynamic understanding of how post-program outcomes evolve is provided.	Tim Mateer, Shaver's Creek Environmental Center and the Pennsylvania State University; Danielle Frank Lawson, The Pennsylvania State University; B. Derrick Taff, Penn State University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Nature or the Outdoors? Understanding the Power of Language in Students' Self-Reported Connection to Nature	Connection to nature scales commonly measure self-reported connections using the terms "nature" and "the outdoors" interchangeably. This study is investigating (1) the emotional valence and intensity that children associate with the term nature compared with the term the outdoors, (2) how self-reported connection to nature levels differ, and (3) whether these across demographics.	Julianne Reas, North Carolina State University; Kathryn Stevenson, NC State University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Power mediates social learning trajectories in community-based citizen science	Learning between young people, educators, and conservation professionals is not a neutral process. By leveraging sociocultural theories of learning and ethnographic methods, we demonstrate how power asymmetries between actors structure and mediate social learning processes in the context of designing a community-based citizen science project.	Chris Jadallah, University of California, Davis--School of Education	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Sustainability Education In Engineering: Exploring Educational Responses, Purposes, And Dimensions.	We offer a snapshot of an in-progress doctoral project investigating how sustainability is addressed in tertiary engineering programs. Exploring a diversity of perspectives, approaches and outcomes, our poster illustrates how programs in the Global North and Global South may serve or hinder particular education functions using cross-case analysis.	Alan Reid, Monash University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Teacher Environmental And Sustainability Education: Scoping International Literature Review	The first of its kind, this international scoping literature review examines environmental and sustainability in teacher education. The poster will outline the four steps to conducting the scoping literature review, including: relevant study identification, study selection, data collection (Covidence software platform) and summarizing findings.	Douglas Karrow, Brock University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
The Impact Of COVID-19: How Environmental Science Learning Ecosystems Changed	Did the pandemic negatively impact youth environmental science learning activities? Through surveys and interviews with young volunteers at informal science education institutions, we found that in fact they diversified and/or deepened their engagement in environmental science learning activities during the pandemic.	Amanda Lindell, UC Davis; Heidi Ballard, School of Education, Univ. of California	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Urban Youth as Environmental Problem-Solvers	This research poster highlights study results demonstrating how urban students who participated in a nature-based, transdisciplinary after-school program not only value nature, but also actively seek ways to be environmental problem-solvers in spaces where they have agency and influence, such as home, school, work, and social circles.	Stacey Vigallon, Nature Nexus Institute	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person

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Using Nature Journaling to Support Student Understanding of Crosscutting Concepts	With its emphasis on observation of phenomena, nature journaling holds promise as a technique that supports student learning of the CCCs. Despite its promise, research on journaling is limited. This study explores: In what ways does a student conceptualize CCCs through nature journaling? How does that conceptualization change over time?	Anne Stephens, California State University, Chico; Kathryn Hayes, CSU East Bay	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Walking Curriculum: Perceptions of P-12 Educators in the United States and Canada	Walking curriculum is when educators take students on walks with a curricular focus (Judson, 2019). We will be sharing findings from interviews with P-12 educators in the United States and Canada who get students outside of classrooms and schools and into nature and communities via walking curriculum.	Scott Morrison, Elon University; Alice Rickards, Elon University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
What is Community-Level Environmental Literacy? How Can We Measure It?	The environmental problems we face today call for collective action — communities coming together to address large-scale problems. Understanding and encouraging collective action may require a shift in focus from individual to community-level environmental literacy (CLEL). This poster describes a convening that worked to conceptualize and determine measures for CLEL.	Lauren Gibson, North Carolina State University	Wednesday, October 12	11:30am	12:30pm	Research Poster	in-person
Toward Abolition In Environmental Education Research And Practice	In this interactive session, panelists will share how they amplify voices, promote equity, and prioritize justice for the most vulnerable families and communities (Carter Andrews et al., 2021). Furthermore, they will discuss ways to decenter whiteness (Calderon, 2006) and move toward abolition (Love, 2019) in environmental education research and practice.	Scott Morrison, Elon University; Dani Toma-Harrod, Elon University; Sheila Williams Ridge, University of Minnesota; Preeti Nayak	Wednesday, October 12	1:45pm	2:30pm	Research Panel	in-person
Assessing Impacts of Standards Movement on Louisiana Informal Environmental Education	Louisiana is undergoing numerous changes to its EE landscape in 2022 – specifically, new state EE standards, an informal program endorsement plan, and a state environmental literacy plan. In this qualitative investigation, informal environmental educators throughout Louisiana highlight perceived challenges, opportunities, and needs in the face of these changes.	Abigail Greer, Louisiana State University	Wednesday, October 12	1:45pm	2:30pm	Research Roundtable	in-person
Designing an Observation Instrument to Understand Environmental Education Program Implementation	Educating for change often requires adapting educational frameworks for novel contexts. However, understanding novel implementation is complex. Come hear about, and help improve, an observation instrument we designed to study an EE framework in a novel (afterschool) context. Let's critique, debate, and inquire about new directions for understanding novel implementation.	Erin Stafford, Education Development Center (EDC); Sara Greller, Education Development Center; Jennifer Jocz, Education Development Center; Timothy D Zimmerman, NOAA Office of Education; Bronwen Rice, NOAA; T'Noya Thompson, NAAEE	Wednesday, October 12	1:45pm	2:30pm	Research Roundtable	in-person
Developing watershed literacy and GST integrated instructional practice with WLGS-TPACK	This session shares outcomes of a pilot implementation of a K-12 professional development institute informed by the Watershed Literacy/Geospatial Science-Technological and Pedagogical Content Knowledge Professional Development Model (WLGS-TPACK PD). The WLGS-TPACK PD Model develops technological, pedagogical, and content area skills, enabling blending of GIS-based tools into environmental issue inquiry.	Tamara E Peffer, PA Department of Education; Steve C. Kerlin, Stroud Water Research Center; Michelle Niedermeier, Pennsylvania Sea Grant; David Kline, Stroud Water Research Center - Avondale, PA	Wednesday, October 12	1:45pm	2:30pm	Research Roundtable	in-person

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Enacting Good Intentions: Working Towards Equitable Researcher-Practitioner Partnerships	Researcher-practitioner partnerships can help build the environmental education field in novel and exciting ways; however, enacting collaborative partnerships in the face of institutional constraints, little formal training, and few public-facing models poses significant challenges. In this session, we will discuss the nuts and bolts of how this work gets done.	Heidi Ballard, School of Education, Univ. of California; Chris Jadallah, University of California, Davis - School of Education	Wednesday, October 12	1:45pm	2:30pm	Research Roundtable	in-person
Unpacking Practice Architectures In School-Based Environmental Education Initiatives	For youth to address environmental issues in the Anthropocene requires that they engage in meaningful learning activities nested in their school communities. In this round table, we explore researching two school cases using a practice architecture framework to challenge us on how to support environmental education practice/praxis in school settings.	Xavier Fazio, Brock University	Wednesday, October 12	1:45pm	2:30pm	Research Roundtable	in-person
Care For The Land And Each Other: Querencia Explored	Drawing from ideas of Querencia, this roundtable will explore how research can advance community-centered environmental education that integrates place, justice, culture and wellbeing. A desired outcome is a journal special issue that will build on ethics of care for the land and each other through place-consciousness, community health, youth agency and more.	Victoria Derr, California State University, Monterey Bay; Olivia Aguilar, Mount Holyoke College	Wednesday, October 12	3:00pm	3:45pm	Research Roundtable	in-person
Engaging Across Boundaries	This paper examines the implementation of a pedagogical approach, Engaging Across Boundaries, to center collaborative problem solving with youth from a variety of socioeconomic and racial backgrounds in a residential environmental education program. We explore how EAB can strengthen teaching practice to support heterogeneous scientific sensemaking and support civic engagement.	Alexandra Guest, Hyla School; Michela Dimond, IslandWood; Déana Scipio, IslandWood; Priya Pugh, IslandWood	Wednesday, October 12	3:00pm	3:45pm	Research Roundtable	in-person
How Do We Facilitate Multi-Disciplinary, School Wide Climate Justice Education?	How can we develop and implement holistic, cross-curricular, whole school approaches to climate education undergirded by justice in action? We will share findings from one middle school case study and discuss what is needed to support teacher agency and cross-disciplinary collaboration despite structural barriers.	Kathryn Hayes, CSU East Bay; Emily Harris, BSCS Science Learning	Wednesday, October 12	3:00pm	3:45pm	Research Roundtable	in-person
Learning With Water: Centering Human-More-Than-Human Interactions For Just Social-Ecological Futures	We will explore how water and other more-than-human beings are agential actors in learning processes and how we, as environmental educators and researchers, might find productive tensions between posthumanist and Indigenous approaches to the study of human and more-than-human relations in ways that build healthier and more just social-ecological futures.	Marijke Hecht, The Ohio State University; Chris Jadallah, University of California, Davis - School of Education	Wednesday, October 12	3:00pm	3:45pm	Research Roundtable	in-person
Reviewing Intergenerational Learning to Maximize EE Research's Impact.	Intergenerational learning (IGL) from youth to adults is a novel education approach with limited examples in environmental education (EE). Our session will review what is known in our field about IGL, as well as generate conversation on new research opportunities.	Amy Eldredge, Shaver's Creek Environmental Center; Danielle Frank Lawson, The Pennsylvania State University	Wednesday, October 12	3:00pm	3:45pm	Research Roundtable	in-person