NARST

A global organization for improving science education through research

99th NARST Annual International Conference

April 19 - 22, 2026 | Seattle, WA

DIGITAL PROGRAM

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99th NARST Annual International Conference

Please note that this program is subject to change.

Click here for program updates throughout the conference.

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99th NARST Annual International Conference

General Information

Information about NARST

NARST is a global organization for improving science teaching and learning through research. Since its inception in 1928, NARST has promoted research in science education and the communication of knowledge generated by the research. The ultimate goal of NARST is to help all learners achieve science literacy.

The Association is incorporated as a non-profit corporation in the State of Minnesota. The official publication is the *Journal of Research in Science Teaching (JRST)*. NARST encourages presentations of a wide variety of investigations in all aspects of science education, including action, historical, philosophical, ethnographic, experimental, and evaluative research studies. Reports of empirical research, critical reviews, and theoretical works are encouraged. In October 2010, to reflect the Association's growing international focus and membership, the Board approved referring to the Association by its acronym only. At the April 2011 Board Meeting, the tagline for the Association was approved by the Board. Thus, the Association's name and tagline is:

> ***NARST— A global organization for improving science education through research.***

Research areas of interest to NARST members include curriculum development and organization, assessment and evaluation, learning theory, teacher education, programs for exceptional students (special needs and talents), equity studies, policy, and methods of teaching.

NARST Mission Statement

NARST is a global organization of professionals committed to the improvement of science teaching and learning through research. Since its inception in 1928, NARST has promoted research in science education and the communication of knowledge generated by the research.

The ultimate goal of NARST is to help all learners achieve science literacy. NARST promotes this goal by: **1)** encouraging and supporting the application of diverse research methods and theoretical perspectives from multiple disciplines to the investigation of teaching and learning in science; **2)** communicating science education research findings to researchers, practitioners, and policy makers; and **3)** cooperating with other educational and scientific societies to influence educational policies.

Member Benefits

- Ten issues per year of the Journal of Research in Science Teaching (electronic version), with access to **JRST online** through Wiley InterScience.
- Access to the **NARST Member Forum**. Stay connected and informed of NARST activities, position openings, committee and Research Interest Group events, graduate student events, and more.
- Discounted registration rate for the NARST Annual International Conference.
- Opportunities to apply for **scholarships and travel support**.
- Access to **NARST Virtual Events** throughout the year. We encourage members to propose webinars, workshops, and other virtual events that align with NARST's mission. Committees, RIGs, strands, and NARST leadership offer events for members free of charge.
- Opportunities to volunteer for **committees** and **leadership positions**.
- Opportunities to serve as a mentor for new members and early career scholars: **Sandra K. Abell Institute**, **Mentor/Mentee Nexus**, and more.

NARST
A global organization for improving science education through research

NARST Programs and Events Code of Conduct Policy

NARST is committed to providing a safe, productive, and welcoming environment for all meeting participants and NARST staff. All participants, including, but not limited to, attendees, speakers, volunteers, exhibitors, sponsors, staff members, and all others are expected to abide by this Programs Code of Conduct. This Policy applies to all NARST meeting-related events, including those sponsored by organizations other than NARST but held in conjunction with NARST events, on public or private platforms.

Unacceptable Behavior is defined as:

- Harassment, intimidation, or discrimination in any form.
- Verbal abuse of any attendee, speaker, volunteer, exhibitor, sponsor, NARST staff member, other meeting guest or venue staff member.
- Examples of verbal abuse include, but are not limited to, verbal comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, national origin, inappropriate use of nudity and/or sexual images in public spaces or in presentations, or threatening or stalking any attendee, speaker, volunteer, exhibitor, NARST staff member, service provider, other meeting guest, or venue staff member.
- Disruption of presentations during sessions, in the exhibit hall, or at other events organized by NARST throughout the meeting.
- Participants should not copy or take screen shots of Q&A or any chat room activity that takes place in the virtual space.

NARST reserves the right to take any action deemed necessary and appropriate, including immediate removal from the meeting without warning or refund, in response to any incident of unacceptable behavior, and NARST reserves the right to prohibit attendance at any future meeting, virtually or in person.

If you experience harassment or hear of any incidents of unacceptable behavior, NARST asks that you inform either NARST Executive Director, Mackenzie Kelley, **ExecutiveDirector@narst.org** or NARST Events Manager, Amy Sellheim **Amy.Sellheim@management-hq.com** so that we can take the appropriate action.

Code of Ethical Conduct

The purpose of the National Association of Research in Science Teaching (NARST) Code of Ethical Conduct is to articulate a set of aspirational principles to guide and support members as they engage in professional activities—research, teaching, and service. NARST members are science education professionals who include researchers, practitioners, and graduate students from various cultures worldwide. These aspirational principles align with and support the mission of the organization to help all members achieve, develop, and contribute meaningfully to the improvement of science teaching and learning through research. NARST expects its members to adhere to the highest ethical standards. The Code of Ethical Conduct serves as a guide to the everyday professional conduct of science educators.

Unfamiliarity with NARST's Code of Ethical Conduct is not a valid defense for engaging in or failing to challenge observed unethical behavior. We accomplish this through our Code of Ethical Conduct where there is:

A. Professional Competence

Science education professionals strive to maintain the highest levels of competence in their work; they recognize the limitations of their expertise; and they undertake only those tasks for which they are qualified by education, training, or experience. They recognize the need for ongoing education in order to remain professionally competent; and they utilize the appropriate scientific, scholarly, professional, technical, and administrative resources needed to ensure honesty and integrity. Science education professionals conduct research, teach, practice, and provide service only within the boundaries of their competence, based on their education, training, supervised experience, or appropriate professional experience. They consult with other professionals when necessary for the benefit of their students, research participants, and clients. They maintain awareness of current scientific, scholarly, and professional information in their fields of activity and undertake continuing efforts to maintain competence in the skills they use. Importantly, professional competence must also include a willingness to accept and integrate new information and experiences, regardless of the effect that process has on research outcomes.

B. Integrity

It is the social responsibility of science education professionals to maintain integrity in all conduct, publications, and forums, and give due credit to the contributions of others. Adhering to this standard means science education professionals do not fabricate, falsify, or plagiarize. Public comments on matters of importance that are relevant to science education must be made with care and accuracy. Adhering to this standard means science education professionals do not use deficit language, deceptive statements concerning research data, or otherwise knowingly make false, misleading or deceptive statements in practicing and presenting research. Comment and debate within the bounds of collegiality and professionalism that keep the organization moving forward and current with emergent issues and perspectives are encouraged. Adhering to this standard means science education professionals do not use dismissive remarks or gestures, restrict multiple voices, or use derogatory language. In short, science education professionals conduct their professional activities in ways that engender trust and confidence.

C. Professional and Scholarly Responsibility in Science Teaching, Learning, and Research

Science education professionals have a responsibility to use research practice and policy to advance NARST members' understanding of the teaching and learning of science in all learning contexts—formal, informal, local, and global—through research, practice, and policy. They adhere to the highest scholarly and professional standards within their field of expertise and accept responsibility for adherence to those standards. Science education professionals should regard the tutelage of graduate students and early career faculty as a trust conferred by the organization for which they work, as well as NARST, for the promotion of these individuals' learning and professional development.

Science education professionals understand that they form a community and show respect for other science education professionals even when they disagree on theoretical, methodological, or personal approaches to professional activities. In activities involving marginalized populations, it is essential that responsible science education professionals seek out the voices and experiences of members of these groups and treat them as critical to their scholarship. While always endeavoring to be collegial, science education professionals must never let the desire to be collegial outweigh their shared responsibility for ethical behavior. When appropriate, they consult with colleagues, NARST's Equity and Ethics Committee, or organizational entities such as their institutional review board in order to prevent, avoid, or challenge unethical conduct.

D. Respect for People's Rights, Dignity, and Diversity

Science education professionals respect the rights, dignity, and worth of all people in their professional activities. They treat other professionals, students, research participants, and members of the organization fairly, respectfully, and without exploitation or harassment. Science education professionals acknowledge the rights of others to hold values, attitudes, and opinions that differ from their own and take reasonable steps to avoid harm to others in the conduct of their work. They learn with others, share ideas honestly, give credit for others' contributions, and encourage others to contribute their unique skills, knowledge, and interests in professional environments. Science education professionals are sensitive to cultural, individual, and role differences in teaching, studying, and providing service to groups of people with distinctive characteristics, as well as the power differential that might result from such differences.

Science education professionals carefully avoid discrimination and bias toward individuals and groups based on race, gender, age, religion, ethnicity, nationality, sexual orientation, gender expression, gender identity, presence of disabilities, educational background, socioeconomic status, or other personal attributes. They refrain from making biased assumptions about others and perpetuating demeaning attitudes and stereotypes. Science education professionals do not accept any forms of discrimination and actively challenge implicit and explicit forms of discrimination.

E. Social Responsibility

Science education professionals are aware of their scientific and professional responsibility to the communities and societies in which they live. This awareness extends to their involvement and service to an increasingly diverse and international NARST community. NARST members are guided by the values and standards that reflect the professional literature. They strive to promote equity and the public good by advancing scientific and scholarly knowledge. Science education professionals are aware of the differences in society and culture that impact scholarly knowledge and academic work. They value and embrace the public trust in research and teaching and are concerned about their ethical behavior and the behavior of other science education professionals that might compromise that trust. Science education professionals should reasonably expect of themselves and others to be guided by a code of ethics that supports efforts to resolve ethical dilemmas.

References

AERA Council. (2011). Code of ethics: American Educational Research Association. Educational Researcher, 40(3), 145-146.

American Sociological Association. (1999). Code of ethics and policies and procedures of the ASA committee on professional ethics. Retrieved from: **http://www.asanet.org/membership/code-ethics**

American Psychological Association. (2017). Ethical principles of psychologists and code of conduct. Retrieved from: **https://www.apa.org/ethics/code/**

Research Interest Groups (RIGs) Information

COMPUTATIONAL SCIENCE PRACTICES (CSP-RIG)

The purpose of the Computational Science Practices Research Interest Group (CSP-RIG) is to promote research and innovation to expand computational science practices in science education. The synergy between computational practices and science makes it critical to include computational science practices (CSPs) early, often, and equitably in K-12 science classrooms. Yet, these synergies remain largely untapped in science education. The CSP-RIG will serve as a collaborative space for researchers promoting CSP integration into science education. This RIG will promote the uptake of CSPs, addressing inequities in science education by providing access to innovative practices for more teacher educators, teachers, and students. Given the lack of opportunities for scholars to discuss CSPs and their integration with science, this RIG will provide a space to build a community of CSP researchers. This RIG will promote the advancement of knowledge about CSPs in science education and will disseminate and share members' research-based practices with the NARST and broader science education communities.

Dr. Mandy Peel, apeel@nmsu.edu

Dr. Janice Mak, Janice.Mak@asu.edu

CONTINENTAL AND DIASPORIC AFRICA IN SCIENCE EDUCATION RIG (CADASE)

The purpose of CADASE RIG is to (a) encourage science educators to engage in research aimed at meeting the needs of people of African descent; and (b) provide intellectual, professional, and personal space for science educators engaged in such research. This RIG will provide opportunities for science education researchers to integrate the study of culture, ethnicity, gender, race, and social class as lenses for performing critical analyses and evaluations of prevailing theory and practice of science education on the lives of people of African descent. A variety of theoretical and methodological frameworks will be used to address issues in science curriculum, learning, teaching, assessment and evaluation, and policy issues in both K-14 formal and informal venues in different contexts.

Chair: **Rona Robinson-Hill, rmrobinsonhi@bsu.edu**

Steering Committee Chair: **Jonathan Hall, jlhall@csusb.edu**

Steering Secretary: **Heather Lavender, hflavend@syr.edu**

Steering Treasurer: **Stanton Belford sbelfor2@utsouthern.edu**

EXPLORING PROFESSIONAL AVENUES IN SCIENCE EDUCATION IN NONTRADITIONAL DOMAINS (EXPAND RIG)

The EXPAND RIG supports researchers who pursue and advance science education work outside traditional academic institutions. This group provides a collaborative space for graduate students, early-career scholars, and established researchers working in non-traditional academic settings, including nonprofits, industry, government, research firms, and community organizations. The RIG promotes networking, mentorship, and professional development focused on diverse research trajectories, and highlights scholarship that engages directly with practitioners, policymakers, and communities. By broadening the field's understanding of research impact and elevating voices across sectors, EXPAND aligns with NARST's mission to advance quality science learning for all and strengthens support for researchers navigating careers beyond the tenure-track.

Dr. Ti'Era Worsley, tworsley@nvcc.edu

Dr. Sierra Morandi, smorandi@fsu.edu

LATINO/A RIG (LARIG)

The Latino/a RIG supports social networks that further research agendas regarding Latino/a science learners. LARIG also serves as a support and mentoring alcoba (space) for Latin@s/Latino science educators and others interested in Latin@ science education.

Chair: **Uma Ganesan, uma.ganesan@utrgv.edu**

Chair-Elect: **Miriam Ortiz, miriam.ortiz01@utrgv.edu**

Contemporary Methods for Science Education Research

The broad purpose of this RIG is to advance the mission of NARST by maintaining the rigor of science education studies, as well as promoting more standardized research practices across the organization such that we are better able to learn from and synthesize each other's work. The intent is that these outcomes will, in turn, allow us to keep advancing the field and maintain the relevance of our research to improving science teaching and learning.

Chair: **Brock Couch, brockcouch44@gmail.com**

Communications Officer: **Stephanie Stanley sstanley5@una.edu**

Engineering Education RIG (ENE-RIG)

The purpose of the RIG in Engineering Education is to synergize research in science and engineering education, promote rigorous research in engineering education, and provide a collaboration and discussion space supporting intellectual and professional exchange and networking.

Chair: **Monica Cardella, mcardell@fiu.edu**

Co-Chair: **Christopher Wright**

Indigenous Science Knowledge Research Interest Group (ISK-RIG)

The ISK-RIG was set up to showcase and provide support to current and future research works of a growing number of Indigenous Knowledge Systems (IKS) researchers working within indigenous communities throughout the world who are members of NARST. This group includes active members from Africa and the African Diaspora, Alaska, Australia, Canada, Indigenous populations of the Americas, Asia and the Pacific, the Middle East, Thailand, Nordic Regions, New Zealand, Scandinavia, the West and East Indies, etc. The goal is to increase awareness of what indigenous knowledge systems can contribute to research.

Chair: **Julie Robinson, julie.robinson@und.edu**

Co-Chair: **Bhaskar Upadhyay, bhaskar@umn.edu**

Secretary: **Rouhollah Aghasaleh, ra292@humboldt.edu**

Treasurer: **Pauline Chinn, chinn@hawaii.edu**

Research in Artificial Intelligence-Involved Science Education (RAISE)

This RAISE RIG aims at employing AI to extend the landscape of science education, increase the capacity of all participants in the venture to face worldwide challenges, and significantly address the equity and ethical problems in the world broadly. This RIG will **(a)** support cutting-edge innovations using AI to address learning, teaching, assessment, equity and policy issues in science education; **(b)** communicate the cutting-edge research involving AI to all researchers, practitioners, and policymakers; and **(c)** encourage junior scholars in the field to pursue AI innovations within science education research as it is broadly practiced.

Chair: **Xiaoming Zhai, Xiaoming.zhai@uga.edu**

Co-Chair: **Kent J. Crippen, kcrippen@coe.ufl.edu**

Asian and Pacific Islander Science Education Research (APISER)

The APISER RIG will promote diversity, equity, and inclusion in science education research using the lenses relevant to Asian and Pacific Islander cultures, ethnicities, gender, and class, as well as the intersections of these markers. It will also serve as an intellectual network to support and mentor current and future Asian and Pacific Islander scholars within and outside of the United States, including NARST members interested in API related research endeavors.

Dr. Hosun Kang, hosunk@uci.edu

Dr. Edna Tan, etan@uncg.edu

Lesbian, Gay, Bisexual, Transgender, Queer, Plus Science Education Research Group (LGBTQ+ RIG)

This RIG provides opportunities for science education researchers to explore and discuss issues relevant to the LGBTQ+ community related to a wide range of topics including science curriculum, learning, teaching, assessment or evaluation, and policy issues in both K-16 formal and informal educational contexts. RIG members promote diversity, equity, and inclusion in science education and science education research. The LGBTQ+ RIG serves as a peer support, mentoring, and inclusive space for folks who identity as LGBTQ+. The LGBTQ+ RIG provides a formalized space inclusive of queer folk and queer research.

Dr. Sara Porter, scheredi@uncg.edu

Dr. Colby Toefel-Grehl, colby.tg@usu.edu

2025–2026 NARST Leadership Team

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University of Calgary

President-Elect
Maria Varelas (2028)
University of Illinois Chicago

Immediate Past President
Jerome Shaw (2026)
University of California, Santa Cruz

Secretary-Treasurer
Brooke Whitworth (2026)
Clemson University

Executive Director
Mackenzie Kelley
Management HQ

Executive Board Members:

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American University in Cairo

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Georgia State University

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Indiana University

Shari Watkins (2028)
American University

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Ohio University

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University of Massachusetts Dartmouth

NARST Liaison to NSTA

Carla Zembal-Saul (2027)
Penn State University

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Matthew Kloser (2030)
University of Notre Dame

Edna Tan (2030)
University of North Carolina-Greensboro

Dana Vedder-Weiss (2030)
Ben-Gurion University of the Negev

Strand Key

Strand 1:	**Science Learning: Development of Student Understanding**
Strand 2:	**Science Learning: Contexts, Characteristics, and Interactions**
Strand 3:	**Science Teaching—Primary School: Characteristics and Strategies** (Grades PreK-6)
Strand 4:	**Science Teaching—Middle and High School: Characteristics and Strategies** (Grades 5-12)
Strand 5:	**College Science Teaching and Learning** (Grades 13-20)
Strand 6:	**Science Learning in Informal Contexts**
Strand 7:	**Pre-service Science Teacher Education**
Strand 8:	**In-service Science Teacher Education**
Strand 9:	**Discontinued**
Strand 10:	**Curriculum, Evaluation, and Assessment**
Strand 11:	**Cultural, Social, and Gender Issues**
Strand 12:	**Technology for Teaching, Learning, and Research**
Strand 13:	**History, Philosophy, Sociology, and Nature of Science**
Strand 14:	**Environmental Education and Sustainability**
Strand 15:	**Policy, Reform and Program Evaluation**

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Strand 1: Science Learning—Development of Student Understanding

Stefanie L. Marshall (2026)
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Uma Ganesan (2027)
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Strand 2: Science Learning—Contexts, Characteristics and Interactions

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Strand 3: Science Teaching—Primary School (Grades preK-6)

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Strand 4: Science Teaching—Middle and High School (Grades 5-12)

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Xornam Apedoe (2027)
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Ryan Summers (2027)
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Strand 11: Cultural, Social, and Gender Issues

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Strand 12: Technology for Teaching, Learning, and Research

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Strand 13: History, Philosophy, Sociology, and Nature of Science

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Strand 14: Environmental Education and Sustainability

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Selvet Ece Genek
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Stephanie Wilkerson
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Usman Ijaz
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William McComas
William Romine
Winter Allen
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Xiao Huang
Xiaomei Yan
Xiaoyu Tang
Xijuan Li
Xin Xia
XinJia Ma
Xinyu He
Xiuju Li
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Yetunde Mabadeje
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Yi-Ning Huang
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Yong Xie
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Yu Shuwen
Yu-Hui Chang
Yu-Jan Tseng
Yujing Guo
yurdagul Bogar
Yushuang Liu
Yuxi Huang
Zachary Patterson
Zahra Baradaranshoraka
Zeyu Han
Zeyuan Wang
Zhen Xu
Zhimeng Jiang
Zoubeida Dagher

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1929 **W. L. Eikenberry**
1930 **W. L. Eikenberry**
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1932 **Elliot R. Downing**
1933 **Francis D. Curtis**
1934 **Ralph K. Watkins**
1935 **Archer W. Hurd**
1936 **Gerald S. Craig**
1937 **Walter G. Whitman**
1938 **Hanor A. Webb**
1939 **John M. Mason**
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1941 **Harry A. Carpenter**
1942 **G. P. Cahoon**
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1944 **Florence G. Billig**
1945 **Florence G. Billig**
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1948 **Ira C. Davis**
1949 **Joe Young West**
1950 **N. Eldred Bingham**
1951 **Betty Lockwood**
1952 **Betty Lockwood**
1953 **J. Darrell Barnard**
1954 **George G. Mallinson**
1955 **Kenneth E. Anderson**
1956 **W. C. Van Deventer**
1957 **Waldo W. Blanchet**
1958 **Nathan S. Washton**
1959 **Thomas P. Fraser**
1960 **Vaden W. Miles**
1961 **Clarence H. Boeck**
1962 **Herbert A. Smith**
1963 **Ellsworth S. Obourn**
1964 **Cyrus W. Barnes**
1965 **Frederic B. Dutton**
1966 **Milton P. Pella**
1967 **H. Craig Sipe**
1968 **John M. Mason**
1969 **Joseph D. Novak**
1970 **Willard D. Jacobson**
1971 **Paul D. Hurd**
1972 **Frank X. Sutman**
1973 **J. David Lockard**
1974 **Wayne W. Welch**
1975 **Robert E. Yager**
1976 **Ronald D. Anderson**
1977 **O. Roger Anderson**
1978 **Roger G. Olstad**
1979 **James R. Okey**
1980 **John W. Renner**
1981 **Stanley L. Helgeson**
1982 **Stanley L. Helgeson**
1983 **Carl F. Berger**
1984 **Ann C. Howe**
1985 **Ertle Thompson**
1986 **David P. Butts**
1987 **James P. Barufaldi**
1988 **Linda DeTure**
1989 **Patricia Blosser**
1990 **William G. Holliday**
1991 **Jane Butler Kahle**
1992 **Russell H. Yeany**
1993 **Emmett L. Wright**
1994 **Kenneth G. Tobin**
1995 **Dorothy L. Gabel**
1996 **Barry J. Fraser**
1997 **Thomas R. Koballa, Jr.**
1998 **Audrey B. Champagne**
1999 **Joseph S. Krajcik**
2000 **David F. Treagust**
2001 **Sandra K. Abell**
2002 **Norman G. Lederman**
2003 **Cheryl L. Mason**
2004 **Charles W. (Andy) Anderson**
2005 **John R. Staver**
2006 **James A. Shymanksy**
2007 **Jonathan F. Osborne**
2008 **Penny J. Gilmer**
2009 **Charlene M. Czerniak**
2010 **Richard A. Duschl**
2011 **Dana L. Zeidler**
2012 **J. Randy McGinnis**
2013 **Sharon J. Lynch**
2014 **Lynn A. Bryan**
2015 **Valarie L. Akerson**
2016 **Mary M. Atwater**
2017 **Mei-Hung Chiu**
2018 **Barbara Crawford**
2019 **Gail Richmond**
2020 **Tali Tal**
2021 **Eileen R. C. Parsons**
2022 **Renée Schwartz**
2023 **Gillian Roehrig**
2024 **Jomo Mutegi**
2025 **Jerome Shaw**
2026 **Jennifer Adams**

NARST Executive Directors

(NARST created the position of Executive Secretary in 1975; the title was changed to Executive Director in 2003)

1975–1980 **Paul Joslin**
1980–1985 **Bill Holliday**
1985–1990 **Glenn Markle**
1990–1995 **John Staver**
1995–2000 **Art White**
2000–2002 **David Haury**
2002–2007 **John Tillotson**
2007–2017 **Bill Kyle**
2018–2021 **Helen Schneider Lemay**
2021–2024 **Lisa Martin-Hansen**
2024–Present **Mackenzie Kelley**

JRST Editors

1963–1966 **J. Stanley Marshall**
1966–1968 **H. Craig Sipe**
1969 **James T. Robinson**
1970–1974 **O. Roger Anderson**
1975–1979 **David P. Butts**
1980–1984 **James A. Shymansky**
1985–1989 **Russell H. Yeany, Jr.**
1990–1993 **Ronald G. Good**
1994–1999 **William C. Kyle, Jr.**
1999–2001 **Charles W. (Andy) Anderson**
James J. Gallagher
August
2002–2005 **Dale R. Baker**
Michael D. Piburn
2006–2010 **J. Randy McGinnis**
Angelo Collins
2011–2015 **Joseph S. Krajcik**
Angela Calabrese Barton
2016–2020 **Fouad Abd-El-Khalick**
Dana L. Zeidler
2021–2025 **Felicia Moore Mensah**
Troy Dow Sadler
2026–2030 **Matthew Kloser**
Edna Tan
Dana Vedder-Weiss

Emeritus Members

Alan McCormack
Albert Nous
Altaf Qadeer
Andree Tiberghien
Ann Osman
Avi Hofstein
Barbara Crawford
Carl Angell
Charles Anderson
Charles McFadden
Dale Baker
David Haury
David Kennedy
Donald Riechard
Donald Schmidt
Doris Simonis
Ed Van Den Berg
Edward Smith
Eileen Parsons
Ellen Simmons
Elsa Feher
George Bodner
Gerald Krockover
Gian Pedemonte
Glenn Berkheimer
Glenn Markle
Gottfried Merzyn
Guilford Bartlett
Hans Andersen
Helmut Dahncke
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Ivo Lindauer
J. Prather
J. Swift
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Obed Norman
Onno De Jong
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Sherry Southerland
Stanley Helgeson
Sue Tunnicliffe
Sung Jae Pak
Uri Ganiel
Vincent Lunetta
Wayne Welch
William Holliday
William Jaffarian

NARST Award Recipients

Distinguished Contributions to Science Education through Research Award

This award is presented at the Annual International Conference but is bestowed only when an outstanding candidate, or candidates, has been identified. It is given to recognize individuals who, through research over an extended period of time, have made outstanding and continuing contributions, provided notable leadership, and made a substantial impact in the area of science education.

Year	Awardee(s)
1986	Anton E. Lawson
1987	Paul DeHart Hurd
1988	John W. Renner
1989	Willard Jacobson
1990	Joseph D. Novak
1991	Robert L. Shrigley
1992	Pinchas Tamir
1993	Jack Easley, Jr.
1994	Marcia C. Linn
1995	Wayne W. Welch
1996	Carl F. Berger
1997	Rosalind Driver
1998	James J. Gallagher
1999	Peter J. Fensham
2000	Jane Butler Kahle
2001	John K. Gilbert
2002	Audrey B. Champagne
2003	Barry J. Fraser
2004	Robert E. Yager Paul Black
2005	John C. Clement
2006	David Treagust
2007	Kenneth Tobin
2008	Dorothy Gabel
2009	Peter W. Hewson Leonie Jean Rennie Wolff-Michael Roth
2010	Reinders Duit Joseph Krajcik
2011	Norman Lederman
2012	Charles W. (Andy) Anderson Larry Yore
2013	Dale R. Baker
2014	Glen Alkenhead Richard Gunstone Frances Lawrenz
2015	Richard A. Duschl Meshach Mobolaji Ogunniyi
2016	Lynn D. Dierking John N. Falk Dana L. Zeidler
2017	Avi Hofstein
2018	Marissa Rollnick Jonathan Osborne
2019	Mary M. Atwater Maria Pilar Jiménez-Aleixandre
2020	Judy Dori Saouma Bou Jaoude
2021	Valarie Akerson Greg Kelly
2022	Fouad Abd-El-Khalick Gail Jones
2023	Franz X. Bogner Okhee Lee
2024	Angela Calabrese Barton Julie Luft
2025	Sherry Southerland
2026	Mei-Hung Chiu Sibel Erduran Troy Sadler

NARST Award Recipients

Outstanding Doctoral Research Award (Sponsored by Wiley)

This award is given annually for the Doctoral Research judged to have the greatest significance in the field of science education from among all theses and dissertations nominated this year for the award.

Year	Awardee(s)	Advisor(s)
1992	Rene Stofflett	Dale R. Baker
1993	Julie Gess-Newsome	Norman G. Lederman
1994	Carolyn W. Keys	Burton E. Voss
1995	Jerome M. Shaw	Edward Haertel
1996	Christine M. Cunningham	William L. Carlsen
1997	Jane O. Larson	Ronald D. Anderson
1998	Kathleen Hogan	Bonnie K. Nastasi
1999	Fouad Abd-El-Khalick	Norman G. Lederman
2000	Danielle Joan Ford	Annemarie S. Palinscar
2001	Iris Tabak	Brian Reiser
2002	Mark Girod	David Wong
2003	Hsin-Kai Wu	Joseph Krajcik
2004	David L. Fortus	Ronald Marx Joseph Krajcik
2005	Thomas Tretter	Gail M. Jones
2006	Stacy Olitsky	Kenneth Tobin
2007	Julia Plummer	Joseph S. Krajcik
2008	Victor Sampson	Douglas Clark
2009	Lei Liu	Cindy E. Hmelo-Silver
2010	Heather Toomey	Phillip Bell Zimmerman
2011	Jeffrey J. Rozelle	Suzanne M. Wilson
2011	Catherine Eberbach	Kevin Crowley
2012	Melissa Braaten	Mark Windschitl
2013	Lori Fulton	Jian Wang
2014	Daniel Birmingham	Angela Calabrese Barton Anne-Lise Halvorsen
2015	Allison Godwin	Geoffrey Potvin
2016	Anna MacPherson	Jonathan Osborne
2017	Anita Schuchardt	Christian Schunn
2018	Katherine Wade-Jaimes	Renée Schwartz
2019	Anita S. Tseng	Jonathan F. Osborne
2020	Netta Shaby	Orit Ben Zvi-Assaraf
2021	Eben Witherspoon	Christian D. Schunn
2022	Won Jung Kim	Angela Calabrese Barton Alicia Alonzo
2023	Gary William Wright III	Cesar Delgado
2024	Grace P. Carroll K. "Ren" Rende Mendoza	Soonhye Park Carla Johnson
2025	Sam Lee Daniel R. Pimentel	Katherine L. McNeill Janet Carlson and Bryan Brown
2026	Dr. Sage Andersen Scott Cohen	María González-Howard Patrick J. Enderle

NARST Award Recipients

Early Career Research Award

The Early Career Research Award is given annually to the early researcher who demonstrates the greatest potential to make outstanding and continuing contributions to research in science education. The recipient will have received his/her Doctoral degree within five years of receiving the award.

Year	Awardee(s)
1993	Wolff-Michael Roth
1994	Deborah J. Tippins
1995	Nancy B. Songer
1996	Mary B. Nakhleh
1997	Peter C. Taylor
1998	J. Randy McGinnis
1999	Craig W. Bowen
	Gregory J. Kelly
2000	Angela Calabrese Barton
2001	Julie A. Bianchini
2002	Alan G. Harrison
2003	Fouad Abd-El-Khalick
2004	Grady J. Venville
2005	Randy L. Bell
2006	Heidi Carlone
2007	Bryan A. Brown
2008	Hsin-Kai Wu
2009	Troy D. Sadler
2010	Thomas Tretter
2011	Katherine L. McNeill
2012	Victor Sampson
2013	Alandeom W. Oliveira
2014	Cory Forbes
2015	Benjamin C. Herman
2016	Richard L. Lamb
2017	Ying-Chih Chen
	David Stroupe
2018	Doug Lombardi
2019	Hosun Kang
	Eve Manz
2020	Brian Donovan
	Dana Vedder Weiss
2021	Lama Jaber
2022	Maria González-Howard
	Laura Zangori
2023	Natalie S. King
	Christina Krist
2024	K.C. Busch
	Terrell R. Morton
2025	Marcus Kubsch
2026	Megan Ennes
	Li Ke

NARST Fellows Award

The NARST Fellow Program is an award program that honors and recognize excellence in science education research and service. This program promotes and advances the NARST mission in science education, and the role of science education in the local and global community, by designating NARST members as Fellows.

Year	Awardee(s)
2021	Bryan A. Brown
	Richard A Duschl
	Gillian Roehrig
2022	Peter A. Okebukola
2023	Julie Bianchini
	Ron Blonder
	Patricia Friedrichsen
2024	Elizabeth Mavhunga
	Carla Zembal-Saul
	Renee' Schwartz
	Christina Schwarz
	Lynn Bryan
2025	Janet Carlson
	M. Gail Jones
	Hosun Kang
	Katherine L. McNeill
	Felicia Moore Mensah
	Eileen Parsons
	Bhaskar Upadhyay
2026	Tali Tal
	Elizabeth Davis
	Aslı Sezen-Barrie
	Mercy Ogunsola-Bandele
	Umesh Ramnarain

Excellence in Mentoring Award

The NARST Excellence in Mentoring Award recognizes an exceptional mentor from the NARST community who has impacted graduate student growth both professionally and personally.

Year	Awardee(s)
2024	Janet Carlson
2025	Ron Blonder
2026	Dr. Angela Chapman

NARST Award Recipients

The *Journal of Research in Science Teaching (JRST)* Award

The *JRST* Award was awarded annually to the author or authors of the *Journal of Research in Science Teaching* article judged to be the most significant publication for the Volume year. It was awarded annually between 1974 and 2015.

Year	Awardee(s)
1974	Donald E. Riechard Robert C. Olson
1975	Mary Budd Rowe
1976	Marcia C. Linn Herbert C. Thier
1977	Anton E. Lawson Warren T. Wollman
1978	Dorothy L. Gabel J. Dudley Herron
1979	Janice K. Johnson Ann C. Howe
1980	John R. Staver* Dorothy L. Gabel* Linda R. DeTure
1981	William C. Kyle, Jr.
1982	Robert G. Good* Harold J. Fletcher* F. David Boulanger
1983	Jack A. Easley, Jr.
1984	Marcia C. Linn Cathy Clement Stephen Pulos
1985	Julie P. Sanford
1986	Anton E. Lawson
1987	Russell H. Yeany Kueh Chin Yap Michael J. Padilla
1988	Kenneth G. Tobin James J. Gallagher
1988	Robert D. Sherwood* Charles K. Kinzer* John D. Bransford* Jeffrey J. Franks* Anton E. Lawson*
1989	Glen S. Aikenhead
1990	Richard A. Duschl Emmett L. Wright
1991	E. P. Hart I. M. Robottom
1992	John R. Baird Peter J. Fensham Richard E. Gunstone Richard T. White
1993	Nancy R. Romance Michael R. Vitale
1994	E. David Wong
1995	Stephen P. Norris Linda M. Phillips
1996	David F. Jackson, Elizabeth C. Doster Lee Meadows Teresa Wood
1997	C. W. J. M. Klassen P. L. Linjse
1998	Julie Bianchini
1999	Phillip M. Sadler
2000	Allan G. Harrison J. Grayson David F. Treagust
2001	Fouad Abd-El-Khalick Norman G. Lederman
2002	Andrew Gibert Randy Yerrick
2003	Sofia Kesidou Jo Ellen Roseman
2004	Jonathan Osborne Sue Collins Mary Ratcliffe Robin Millar Richard Duschl
2005	Jonathan Osborne Sibel Erduran Shirley Simon
2006	Troy D. Sadler Dana L. Zeidler
2007	Jerome Pine Pamela Aschbacher Ellen Roth Melanie Jones Cameron McPhee Catherine Martin Scott Phelps Tara Kyle Brian Foley
2008	Christine Chin
2009	Kihyun Ryoo Bryan Brown
2010	Helen Patrick Panayota Mantzicopoulos Ala Samarapungavan
2011	Daphne Minner Jeanne Century Abigail Jurist Levy
2012	Julie A. Luft Jonah B. Firestone Sissy S. Wong Irasema Ortega Krista Adams Eun Jin Bang
2013	Edys S. Quellmalz Michael J. Timms Matt D. Silberglitt Barbara C. Buckley
2014	Joseph Taylor Susan Kowalski Christopher Wilson Stephen Getty Janet Carlson
2015	Matthew Kloser

*Tie

NARST Award Recipients

The NARST Outstanding Paper Award

The NARST Outstanding Paper Award was awarded annually for the paper or research report presented at the NARST Annual International Conference that was judged to have the greatest significance and potential in the field of science education. It was awarded annually between 1975 and 2015.

Year	Awardee(s)
1975	John J. Koran
1976	Anton E. Lawson
1977	*NO AWARD*
1978	Rita Peterson
1979	Linda R. DeTure
1980	M. James Kozlow Arthur L. White
1981	William Capie Kenneth G. Tobin Margaret Boswell
1982	F. Gerald Dillashaw James R. Okey
1983	William C. Kyle, Jr. James A. Shymansky Jennifer Alport
1984	Darrell L. Fisher Barry J. Fraser
1985	Hanna J. Arzi* Ruth Ben-Zvi* Uri Ganiel* Russell H. Yeany Kueh Chin Yap Michael J. Padilla
1986	Barry J. Fraser* Herbert J. Walberg* Wayne W. Welch*
1987	Robert D. Sherwood
1988	Barry J. Fraser Kenneth G. Tobin
1989	James J. Gallagher Armando Contreras
1990	Patricia L. Hauslein Ronald G. Good Catherine Cummins
1991	Nancy R. Romance Michael Vitale
1992	Patricia Heller Ronald Keith Scott Anderson
1993	Wolff-Michael Roth
1994	Wolff-Michael Roth Michael Bowen
1995	Wolff-Michael Roth
1996	Nancy J. Allen
1997	*NO AWARD*
1998	Wolff-Michael Roth Reinders Duit Michael Komorek Jens Wilbers
1999	Lynn A. Bryan
2000	Joseph L. Hoffman Joseph S. Krajcik
2001	Allan G. Harrison
2002	Carolyn Wallace Keys Eun-Mi Yang Brian Hand Liesl Hohenshell
2003	Wolff-Michael Roth
2004	Joanne K. Olson* Sharon J. Lynch* Joel Kuipers Curtis Pyke Michael Szesze
2005	Chi-Yan Tsui David Treagust
2006	Leema Kuhn Brian Reiser
2007	Eugene L. Chiappetta Tirupalavanam G. Ganesh Young H. Lee Marianne C. Phillips
2008	Guy Ashkenazi Lana Tockus-Rappoport
2009	Jrene Rahm
2010	Mark W. Winslow John R. Staver Lawrence C. Sharmann
2011	Matthew Kloser
2012	Shelly R. Rodriguez Julie Gess-Newsome
2013	Edward G. Lyon
2014	Ying-Chih Chen Soonhye Park Brian Hand
2015	Lori M. Ihrig Michael P. Clough Joanne K. Olson

*Tie

Research Worth Reading Awards (RWR)

Year	Awardee(s)
2026	Jessica L. Alzen, Jason Y. Buell, Kelsey Edwards, Brian J. Reiser, Cynthia Passmore, Bill Penuel, Chris D. Griesemer, Yang Zhang Characterizing variations in the figured worlds of teachers and students in science class
2026	Regina McCurdy The science relevancy bridge: Connecting intersectionality and science identity in science learning experiences
2026	Daniel Pimentel Learning to evaluate sources of science (mis) information on the internet: Assessing students' scientific online reasoning

NARST Award Recipients

Outstanding Masters Thesis Award

This award was established in 1995 to be given annually for the Master's Thesis judged to have the greatest significance in the field of science education. It was last awarded in 2002.

Year	Awardee	Major Professor	Advisor
1995	Moreen K. Travis	Carol L. Stuessy	
1996	Lawrence T. Escalada	Dean A. Zollman	
1997	C. Theresa Forsythe	Jeffrey W. Bloom	
1998	Renee D. Boyce		Glenn Clark
1999	Andrew Gilbert		Randy K. Yerrick
2000	Rola Fouad Khishfe		Fouad Abd-El-Khalick
2002	Laura Elizabeth Slocum		Marcy Hamby Towns

Classroom Applications Award

The Classroom Applications Award was established in 1979. The award was given annually to authors whose papers were presented at the previous NARST Annual International Conference and judged to be outstanding in terms of emphasizing classroom application of research in science education. The award was last presented in 1991.

Year	Awardee(s)
1980 *Five Equal Awards*	Livingston S. Schneider John W. Renner
	Heidi Kass Allan Griffiths
	Ramona Saunders Russell H. Yeany
	Joe Long James R. Okey Russell H. Yeany
	M. James Kozlow Arthur L. White
1981 *Four Equal Awards*	Dorothy L. Gabel Robert D. Sherwood Larry G. Enochs
	Wayne Welch Ronald D. Anderson Harold Pratt
	Mary Ellen Quinn Carolyn Kessler
	P. Ann Miller Russell H. Yeany
1982 *Four Equal Awards*	Louise L. Gann Seymour Fowler
	Dorothy L. Gabel Robert D. Sherwood
	Thomas L. Russell
	Joseph C. Cotham
1983	Robert D. Sherwood Larry G. Enochs Dorothy L. Gabel
1984 *Three Equal Awards*	Mary Westerback Clemencia Gonzales Louis H. Primavera
	Kenneth G. Tobin Hanna J. Arzi Ruth Ben-Zvi Uri Ganiel
	Charles Porter Russell H. Yeany
1985 *Three Equal Awards*	Dan L. McKenzie Michael J. Padilla
	Margaret Walkosz Russell H. Yeany
	Kevin C. Wise James R. Okey
1986 *Four Equal Awards*	Sarath Chandran David F. Treagust Kenneth G. Tobin
	Darrell L. Fisher Barry J. Fraser
	Dorothy L. Gabel Stanley L. Helgeson Joseph D. Novak John Butzow V. K. Samuel
	Linda Cronin Meghan Tweist Michael J. Padilla
1987	Dorothy L. Gabel V. K. Samuel Stanley L. Helgeson Saundra McGuire Joseph D. Novak John Butzow
1988	Uri Zoller Ben Chaim
1989	James D. Ellis Paul J. Kuerbis
1990	Dale R. Baker Michael D. Piburn Dale S. Niederhauser
1991	David F. Jackson Billie Jean Edwards Carl F. Berger

NARST Standing Committees

Awards Committee	
Final Year	**Board Liaison**
2028	**Shari Watkins** American University

Outstanding Doctoral Research Award	
Final Year	**Committee Leadership**
2026	**Dina Tsybulsky** (Chair) Technion, Israel
2027	**Julianne Wenner** (Incoming Chair) Clemson University
	Members
2026	**Mindy Chappell** University of Illinois Urbana-Champaign
2026	**Mary Short** George Washington University
2026	**Stephanie Batres Spezza** Univeristy of Illinois - Chicago
2026	**David Stroupe** Michigan State University
2026	**Noemi Waight** University at Buffalo
2027	**Tamar Fuhrmann** Teachers College/Columbia University
2028	**Neha Anand** Midway University
2028	**Shannon Davidson** University of Alabama
2028	**Ayça K. Fackler** University of Missouri
2028	**Symone Gyles** University of California, Irvine
2028	**Lama Jaber** Florida State University
2028	**Li Ke** University of Washington
2028	**Shelley Rap** Weizmann Institute of Science
2028	**Tammie Visintainer** San Jose State University

Early Career Research Award	
Final Year	**Committee Leadership**
2026	**Uchenna Emenaha** (Chair) The University of Texas at San Antonio
2027	**Meg Blanchard** (Incoming Chair) North Carolina State University
	Members
2026	**Juan Diaz** Mount Aloysius College
2026	**Katherine Doerr** Mount Aloysius College
2027	**Elizabeth (Betsy) Davis** University of Michigan
2027	**Gary William Wright** University of Missouri
2027	**Hyesun You** University of Iowa
2028	**Rowhea Elmesky** University of Washington in St. Louis
2028	**Preeti Gupta Member** AMNH
2028	**Daniel Morales-Doyle** University of Illinois Chicago
2028	**Wardell A. Powell** Framingham State University
2028	**Neta Shaby** University of Southampton

NARST Standing Committees

Awards Committee (cont.)

Distinguished Contributions to Science Education Through Research

Final Year	Committee Leadership
2026	**Saouma BouJaoude** (Chair) American University of Beirut, Lebanon
2027	**Okhee Lee** (Incoming-Chair) New York University
	Members
2026	**Carla Johnson** NC State University
2026	**Gail Jones** NC State University
2027	**Ron E. Gray** Northern Arizona University
2028	**Angela Calabrese Barton** University of Michigan
2028	**Pei-Ling Hsu** University of Texas at El Paso
2028	**Jenny Martin** Australian Catholic University
2028	**Bhaskar Upadhyay** University of Minnesota

NARST Fellow Award

Final Year	Committee Leadership
2026	**Lezly Taylor** (Chair) Virginia Polytechnic Institute and State University
2027	**Helena Aptyka** (Incoming-Chair) University of Cologne, Germany
	Members
2026	**Flavia Kigozi** University of Witwatersrand, South Africa
2026	**Laura B. Schneider** St. Mary's College of Maryland, OpenSciEd
2027	**Ron E. Gray** Northern Arizona University
2028	**Elizabeth Edmondson** Virginia Commonwealth University
2028	**Katherine McNeill** Boston College

Elections Committee

Final Year	Committee Leadership
2026	**Nazan U. Bautista** (Immediate Past Chair) Miami University
2027	**Muhammad Abd Hadi Bunyamin** (Chair) Universiti Teknologi Malaysia
2028	**Preethi Titu** (Incoming-Chair) Kennesaw State University
	Members
2026	**Angela Chapman** University of Texas Rio Grande Valley
2026	**Susie M. Cohen** Trinity International University
2026	**Tim Klavon** Black Hills State University
2027	**Jonah B. Firestone** Washington State University
2027	**Samuel Severance** Northern Arizona University
2028	**Meredith Bittel** University of Kansas
2028	**Sonya Martin** Seoul National University
	Board Member Liaison
2027	**Heba EL-Deghaidy** American University in Cairo

NARST Standing Committees

Equity and Ethics Committee

Final Year	Committee Leadership
2026	**Regina McCurdy** (Immediate Past Chair) University of North Carolina at Charlotte
2027	**Iliana Esther De La Cruz** (Chair) Texas A&M University
2028	**Maria R. Maulucci** (Incoming-Chair) Barnard College
	Members
2026	**Laura Peña-Telfer** Georgia State University
2027	**Bolaji Bamidele** Utah State University
2027	**Devasmita (Deva) Chakraverty** Indian Institute of Management Ahmedabad
2027	**Dominick Fantacone** SUNY Cortland Director of Research and Sponsored Programs
2027	**Khanh Q. Tran** Purdue University
2028	**Ashley Easley** University of Michigan, Ann Arbor
2028	**Monica Miles Member** University of Buffalo
2028	**Ali Muller** Rowan University
2028	**Greses Perez** Tufts University
	Board Member Liaison
2028	**Terrell Morton** University of Illinois Chicago

Membership Committee

Final Year	Committee Leadership
2026	**Joi Merritt** (Chair) James Madison University
2028	**Theila Smith** (Incoming-Chair) NYC Department of Education
	Members
2026	**Jonathan Bowers** Michigan State University
2026	**Alyssa Freeman** Middle Tennessee State University
2026	**Grant Gardner** Middle Tennessee State University
2027	**Ilayda Kilic** Kocaeli University, Turkey
2027	**Khadija Zogheib** Florida State University
2028	**Rebekah Hammack** Purdue University
2028	**Shulamit Kaponâ** Technion Israel Institute of Technology
2028	**Jonathan Mccausland** Ioana University
2028	**Johan Noel Tabora** Northwestern University
	Board Liaison
2026	**Selcen Guzey** Purdue University

NARST Standing Committees

Graduate Student Committee

The Graduate Student Committee is composed of graduate student members appointed by the President-elect. The committee is chaired by the Graduate Student Representative, a non-voting (ex-officio) liaison to the NARST Board. A Board Director is appointed to serve as an ex officio advisor to the committee.

Final Year	Committee Leadership
2026	**Xin Xia** (Co-Chair) University of Virginia
2027	**Arya Karumanthra** (Co-Chair) Indiana University
	Members
2026	**Austin R. Jenkins** Purdue University
2026	**Muhammad Guntur Purwanto (Guntur)** University of Minnesota
2026	**Kristal Louise Turner** University of Calgary, Canada
2027	**Selvet Ece Genek** The Ohio State University
2027	**Dilara Goren** Bogazici University, Turkey
2027	**Wei-Ting Li** National Sun Yat-sen University, Taiwan
2027	**Souhaila Nassar** Boston University
2027	**George Schafer** Drexel University
2027	**Stephanie Tracey** Clemson University
	Board Member Liaison
2026	**Collins Moga** University of Mass Dartmouth

International Committee

Final Year	Committee Leadership
2026	**Arif Rachmatullah** (Co-Chair) SRI International
2027	**Sahar Alameh** (Co-Chair) University of Kentucky
	Members
2026	**Estelle Blanquet** University of Bordeaux - France
2026	**Christelle Fayad** Texas Christian University
2027	**Shirly Avargil** Technion Junior Faculty, Israel
2027	**María Helena Salas Cossio** Universidad Alberto Hurtado
2027	**Keren Dalyot** Weizmann Institute of Science, Israel
2027	**Tim Hartelt** University of Kassel
2027	**Argyris Nipyrakis** University of Crete, Greece
2027	**Giulia Tasquier** University of Bologna, Italy
2028	**Keren Dalyot** Weizmann Institute of Science, Israel
	Board Member Liaison
2026	**Sara Salloum** Ohio University

NARST Standing Committees

Program Committee	
Final Year	**Committee Leadership**
2027	**Jennifer D. Adams** (Co-Chair) University of Calgary, Canada
2028	**Maria Varelas** (Co-Chair) University of Illinois Chicago
Continuing	**Mackenzie Kelley** NARST Executive Director
	Members
2026	**Rouhollah Aghasaleh** Polytechnic University, Humboldt
2026	**Rachel van Aswegen** University of Virginia
2026	**Selina Lynn Bartels** Valparaiso University
2026	**Julie C. Brown** University of Florida
2026	**Sanlyn Buxner** University of Arizona
2026	**Mila Rosa Librea Carden** University of North Texas
2026	**Robbie L. Higdon** James Madison University
2026	**TingTing Li** Michigan State University
2026	**Stefanie L. Marshall** Michigan State University
2026	**Kelli Paul** Indiana University
2026	**Quentin Sedlacek** Southern Methodist University
2026	**Anita Schuchardt** University of Minnesota
2026	**Jill Wertheim** WestEd
2026	**Moyu (Molly) Zhang** New York University
2027	**Xornam Apedoe** University of San Francisco
2027	**Christine Bernhardt** University of Maryland
2027	**Jason Buell** Northwestern University
2027	**Sanlyn Buxner** University of Arizona
2027	**Uma Ganesan** University of Texas Rio Grande Valley
2027	**Christa Haverly** Chicago Public Schools
2027	**Erdogan Kaya** The University of Texas at Arlington
2027	**Kathryn Lanouette** William & Mary School of Education
2027	**Wonyong Park** University of Southampton
2027	**Takeshia Pierre** Tufts University
2027	**Elizabeth Xeng de los Santos** CA Commission on Teacher Credentialing
2027	**Ryan Summers** University of North Dakota
2027	**Hong H. Tran** Purdue University
2027	**Moyu (Molly) Zhang** New York University

NARST Standing Committees

Professional Learning and Institutes Committee	
	Committee Leadership
2026	**Amelia W Gotwals** (Immediate Past-Chair) Michigan State University
2027	**David Owens** (Chair) Alabama School of Fine Arts
2028	**Stephen B. Witzig** (Incoming-Chair) University of Massachusetts Dartmouth
	Members
	Maram Al Aqra Sharajh Educational Academy
	Courtney Benal University of South Carolina
	Shondricka Burrell Morgan State University
	Kason Cheung Ka Ching The Education University of Hong Kong
	Cole Hatchard STEM Innovation Academy High School
	Jing LIN Beijing Normal University
	Vanessa Louis Marsal Family School of Education | University of Michigan
	Justin McFadden University of Louisville
	Sara Wilmes Member Univ. of Luxemburg
	Alexander Paulchell-Lehan University of Arizona
	Fredyrose Ivan Pinar De La Salle Medical and Health Sciences Institute
	Swagata Sarkar Purdue University
	Cheyenne Woods California State University, Fresno
	Ella Yonai University of Georgia
	Yang Zhang Northwestern University
	Bo Zhu, Ph.D American Institute for Research
	Board Liaison
2026	**Shiang-Yao Liu** National Taiwan Normal University

Support NARST

NARST is able to continue its mission because of your support and generosity. By contributing, you'll help ensure that our work continues. We welcome donations of all sizes and payment plans – whether it's a one-time gift, a monthly contribution or part of a matching gifts program.

https://members.narst.org/donations/

NARST Standing Committees

Research Committee

Final Year	Committee Leadership
2026	**Bryan H. Nichols** (Immediate Past-Chair) Florida Atlantic University
2027	**Colby Tofel-Grehl** (Chair) Utah State University
2028	**Alexander Bohn** (Incoming-Chair) Northern Virginia Community College
	Members
2026	**Michael Giamellaro** Oregon State University
2026	**Cesar Delgado** North Carolina State University
2026	**Mina Sedaghatjou** Rowan University
2026	**Carrie-Anne Sherwood** Southern Connecticut State University
2027	**Beth A. Covitt** Univeristy of Montana
2027	**Alexander Bohn** Northern Virginia Community College
2027	**Saramma Chandy** Mumbai University
2028	**Yurdagül Bogar** Hakkari University
2028	**Melissa Mendenhall** Utah Valley State
2028	**Maiza de Albuquerque Trigo** University of Luxembourg
2028	**Karen Woodruff** Kean University
2028	**Ezgi Yesilyurt, Ph.D.** Weber University
	Board Liaison
2026	**Meredith Park Rogers** Indiana University

Scholarships Committee

Final Year	Committee Leadership
2026	**Jennifer Bateman** (Immediate Past-Chair) Georgia Southern University
2027	**Jomo Mutegi** (Chair) Old Dominion University
	Members
2026	**Christina Baze** Northern Arizona University
2027	**Julie Bianchini** University of California, Santa Barbara
2027	**Nivedh Jayanth** Purdue University
2027	**Marcus Kubsch** Freie Universität Berlin
2027	**Clara Mabour** Tufts University
2027	**Alexis Markavage** Indiana University
2027	**James Minogue** NC State University
2027	**Hopegay Williams** University of West Indies, Mona
2028	**Jonathan M. Barcelo** Saint Louis University (Philippines)
2028	**Danielle Malone** Purdue University
2028	**Jonathan Mccausland** Iona University
2028	**Peter Oyewole** Kent State University
2028	**Adepeju Prince** Kent State University
2028	**Senay Purzer** Purdue University
2028	**Rona Robinson-Hill** Ball State University
2028	**Jorge Solís** University of Texas at San Antonio
	Board Liaison
2027	**Kristin Gunckel** University of Arizona

NARST Standing Committees

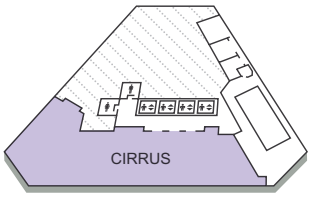
Social Media, Website and Communications Committee	
Final Year	**Committee Leadership**
2026	**Gary Weiser** (Immediate Past-Chair) Bill and Melinda Gates Foundation
2027	**Stephanie Teeter** (Chair) North Carolina State University
2028	**Suzanne Poole Patzlelt** (Incoming-Chair) Touro University, New Jersey
	Members
2026	**Linsey Brennan** Michigan State University
2026	**Marti Canipe** Northern Arizona University
2026	**Steven Worker** University of California, Agriculture and Natural Resources
2027	**Katerina Pia Gunter** San Francisco State University
2027	**Olayinka Mohorn** University of Memphis
2027	**Christina Schwarz** Michigan State University
2028	**Tyler Harper-Gampp** North Carolina State University
2028	**Ryan Summers** University of North Dakota
2028	**Carol C. Waters** University of Houston-Clear Lake
	Board Member Liaison
2026	**Patrick Enderle** Georgia State University

Future NARST Meeting Dates

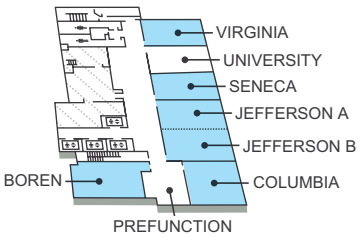
2027	March 14 - 17	Boston, MA
2028	March 19 - 22	Montreal, CA

Floor Plans and Capacity Charts

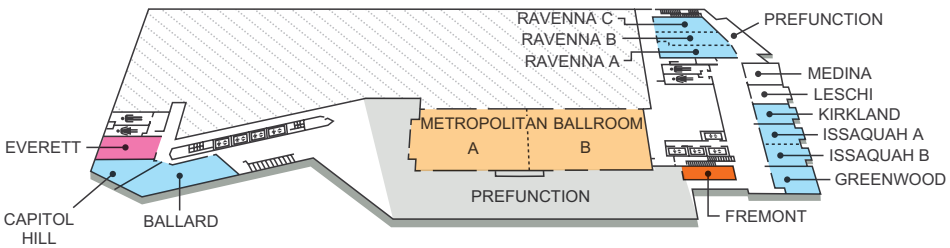
35th Floor – Pike Street Tower



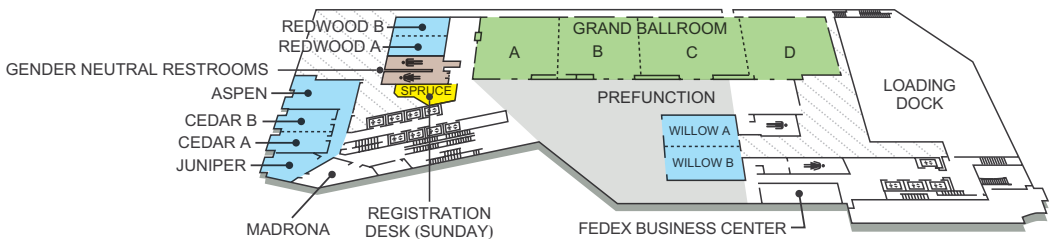
Fourth Floor – Union Street Tower



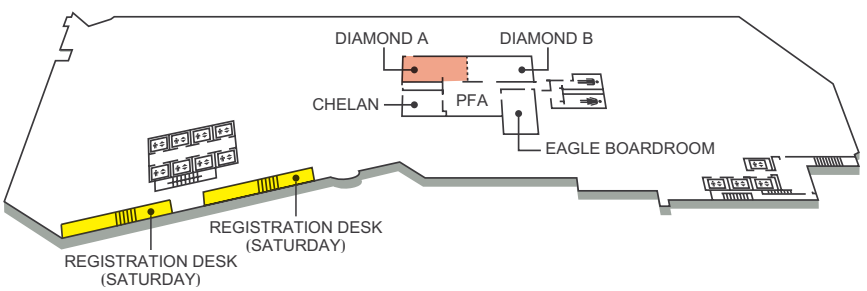
Third Floor



Second Floor



First Floor – Lobby Level



- **Registration Desks**
- **General Session/ Keynote Presentations/ Awards Presentation**
- **Networking and Exhibits/ Breakfast (only on 2nd Floor)**
- **NARST Board Meeting/ Graduate Student Forum/ SKAIDS Reception (Invitation Only)**
- **Graduate Student Lunch and Posterboard Session**
- **Education Breakout Session Rooms**
- **JRST Dinner (Invitation Only)**
- **Gender Neutral Restrooms**
- **Lactation Room**
- **Prayer Room**

NARST Conference and Virtual Events Accessibility Guidelines for Presenters

Slide Deck Presentations

(Adapted from AERA, AAAS, and the American Anthropological Association)

Design & Readability

- Use high-contrast text on solid backgrounds
- Use sans-serif fonts (minimum 18 pt)
- Keep slides clean and uncluttered
- Limit to ≤5 bullet points per slide
- Keep bullet points short (ideally one line)

Presentation Practices

- Read all text directly as presented on slides before expanding
- Clearly describe all visuals, including:
  - Images
  - Graphs & charts
  - Maps
  - Videos
- Provide context and meaning, not just description

Multimedia & Accessibility

- Use closed captions when spoken language is essential
- Provide audio description OR pause to explain visuals
- **Note:** ASL interpreters do not translate video content

Accessibility Check

Run an accessibility check to ensure:

- Proper color contrast
- Logical reading order (title → text → visuals)
- Alt text for all images
- Accessible tables

Poster Presentations

(Adapted from Yale Library Accessibility Guidelines)

Color & Visual Design

- Ensure strong contrast between text and background
- Do NOT rely on color alone to convey meaning → Use patterns, labels, or textures
- Avoid red/green-only distinctions (colorblind accessibility)

Typography

- Use sans-serif fonts
- Recommended sizes:
  - Title: 72 pt+ (ideal 158 pt)
  - Headings: 42 pt+ (ideal 56 pt)
  - Body: 24 pt+ (ideal 36 pt)
  - Captions: 18 pt+ (ideal 24 pt)

Layout & Organization

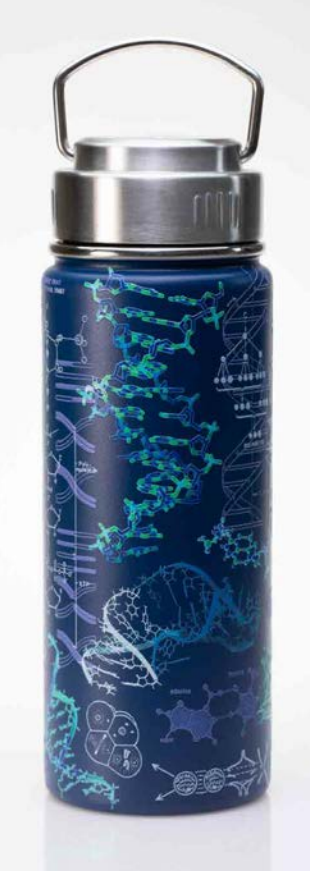
- Use spacing (negative space) to create structure
- Group related content clearly
- Guide readers using:
  - Numbering
  - Arrows
  - Clear section flow

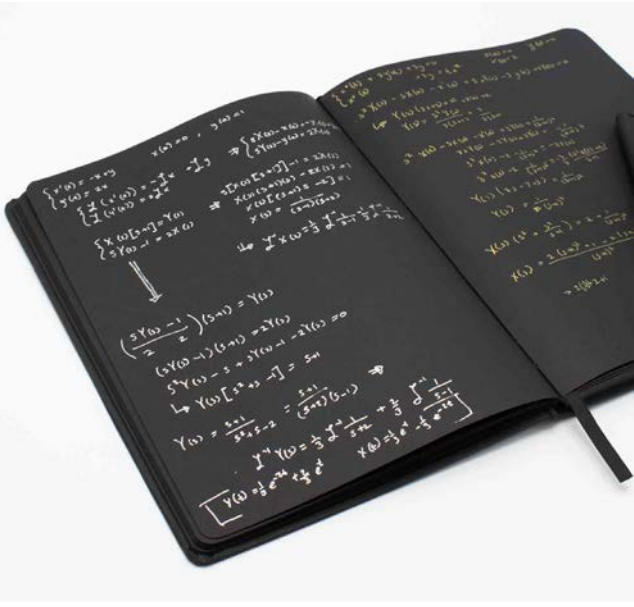
Cultural & Navigation Considerations

- Be mindful of different reading directions
- Use visual cues to support navigation across audiences

Digital & Shared Posters

- Use built-in accessibility features (PowerPoint, Word, etc.)
- Ensure correct reading order:
  - PowerPoint: *Arrange → Selection Pane*
- Add alt text to all visuals
- Use “Save as Adobe PDF” (NOT “Print to PDF”) to preserve accessibility
- Use document styles for screen reader compatibility





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NARST 2027 Conference Theme

Prepared by Maria Varelas, NARST President-Elect

Braiding Pasts, Presents, and Futures: Crossing Borders in Performing Science Education Research

NARST is turning 100 years old! As our association is reaching its centennial milestone, we are all called to reflect, to act, and to imagine the future of science education and science education research. This invites us to rekindle commitments to diversity of people, scholarship, communities, approaches, and journeys that constitute our collective pursuit of strengthening science literacy. It is a time to celebrate our varied histories, trajectories, identities, languages, geographies, and ways of being and engaging in the world, learn from the past, and envision spaces and places where science education transforms lives.

The Akan people's *sankofa*, the Greeks' *anamnisi*, the Māori people's *ka mua, ka muri*, the Jewish people's *l'dor v'dor*, the Arab culture's *irji' lita'khudh al-hikma,* Latin America's *rescate de la memoria movements*, and ample other cultural wisdom inspire us to reach back to construct what we may have forgotten, silenced, lost, missed, and achieved. These ways of remembering illuminate our present praxis and craft the promise of imagined new futures. Considering science education as practices that can empower life and liberty for all peoples compels us to embrace expansive views of how knowledge is produced, valued, and used. It challenges us to disrupt hierarchies that constrain access and transformation and to uphold the axiom that high-quality science education is a human right. The Greek song O Thromos / The Street–"The street had its own history; Someone wrote it with paint on the wall; It was only one word, 'freedom'; And then they said children wrote it"– invigorates for me this calling. It inspires interrogating our pasts, learning from children, youth, adults, and elders with whom we live, work, teach, and study, and pondering how science education scholarship contributes to vibrant communities, to freedom in all its forms, and to hope for humanity.

At the NARST centennial conference, let us ponder about knowledges and identities, share wide-ranging scholarship, elevate varied voices, grapple with challenges and opportunities, and leverage the arts as a way of knowing and being. Let us engage with realities while problem posing and problem solving, support one another through mentorship, learn from each other, and consider critical love in our research and in our interactions to re-collect and re-cognize. Science education and the research pursued by NARST members have shaped, and been shaped by, who we have been, who we are becoming, and who we will be as an association entering its second century. It is my hope that the 2027 centennial conference creates places and spaces for our growing, diverse, global community to perform collaboration, mutual learning, the wisdom of many, and border crossing in topics, framings, methods, and presentation formats. In doing so, we can amplify goals and aspirations of science education scholarship and practice that strive toward transformation.

> ***"Science education and the research pursued by NARST members have shaped, and been shaped by, who we have been, who we are becoming, and who we will be as an association entering its second century."***
>
> ***- Maria Varelas, NARST President***

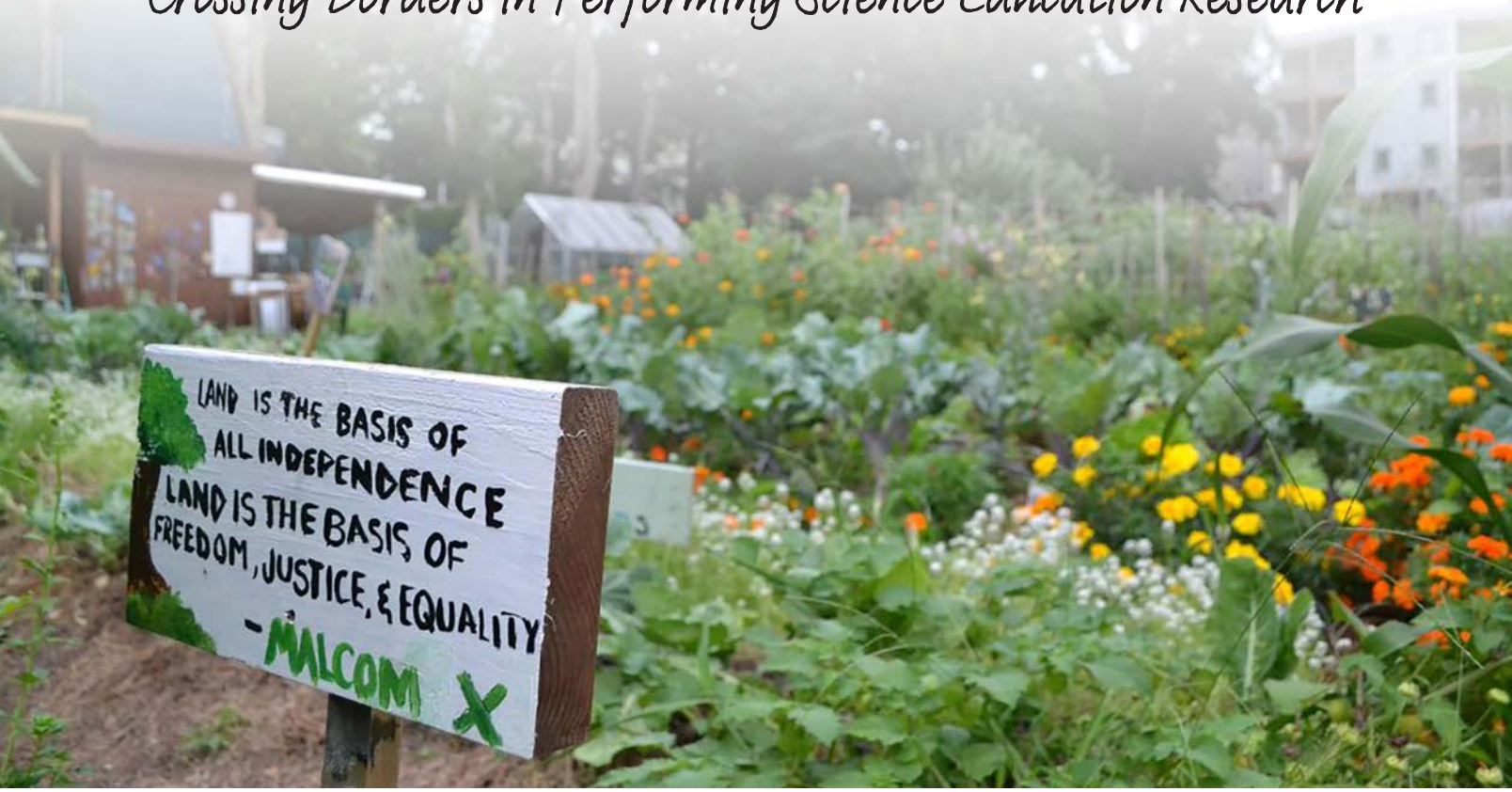
NARST
A global organization for improving science education through research

100th NARST Annual International Conference

Boston, MA | March 14-17, 2027

Braiding Pasts, Presents, and Futures:

Crossing Borders in Performing Science Education Research



Virtual Conference Day 9 April 2026

Strand 11 Stand-alone Paper Set 1

Strand 1: Science Learning: Development of student understanding
9-Apr-26, 8:30-10:00
Location: Zoom 1

Stand-Alone Paper
Uncovering the effect of drawing and self-explanation strategies on learning outcomes in science education
shuwen yu*, beijing normal university, China
manman Tian, Zhuhai Wanzai Primary school, China
sihui zhu, beijing normal university, China

Stand-Alone Paper
Mapping Systems Thinking Pedagogies in Social Science Education: Implications for Science Teaching and Learning
Roee Peretz*, The Technion, Israel

Stand-Alone Paper
Challenging Marginalization: Intersectional Counter-narratives of Undergraduate Minoritized Women in Engineering
Nicola Law*, Teachers College, Columbia University, USA
Felicia Mensah, Teachers College, Columbia University, USA

Stand-Alone Paper
Relationships to STEM Knowledge in an Elite School
Majd Zouda*, University of Toronto, Canada

Stand-Alone Paper
Fostering Young Women's Physics Identity: Longitudinal Analysis of an Inquiry-Based Intervention Program on Climate Physics
Paula Becker*, Heidelberg University of Education, Germany
Peter Wulff, Ludwigsburg University of Education, Germany

Multi-Strand (1/2/3) Stand-alone Paper Set

9-Apr-26, 8:30-10:00
Location: Zoom 2

Strand 1: Science Learning: Development of student understanding
Stand-Alone Paper
The impacts of media-multitasking on the use of reading strategies and effects in science reading
Yajing Gu*, BNU, China
Lei Huang, CCNU, China

Strand 1: Science Learning: Development of student understanding
Stand-Alone Paper
Tipping the Balance: Sources of Confusion in Understanding Dynamic Equilibrium
Tamara Dawud*, University of Haifa, Israel
Sebahat Gok, Northwestern University, USA
Sharona T. Levy, University of Haifa, Israel
Uri Wilensky, Northwestern University, USA

Strand 1: Science Learning: Development of student understanding
Stand-Alone Paper
Development and Application of Electric Circuit Models in Electric Vehicle Design
Cynthia Lima*, The University of Texas at San Antonio, USA
Jorge Solis, The University of Texas at San Antonio, USA
Nikolaos Gatsis, The University of Texas at San Antonio, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Stand-Alone Paper
"Be Humane": Care Shaping Epistemic Negotiations in Scientific Experimental Design
Wenya Yang*, Ruixiang Experimental School, China
Wanjun Ding, Ruixiang Experimental School, China
Kangni Chen, Ruixiang Experimental School, China
Hua Hu, East China Normal University, China

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Stand-Alone Paper
Unpacking Modeling-Based Learning in Kindergarten: A Micro-Level Discourse Analysis
Loucas Louca*, European University Cyprus, Cyprus

Strand 12 Stand-alone Paper Set
Strand 12: Technology for Teaching, Learning, and Research
9-Apr-26, 8:30-10:00
Location: Zoom 3

Stand-Alone Paper
Differences in Teachers' Artificial Intelligence Behavioral Intentions: A Comparative Study of Vietnam and Taiwan
Xuan-Cuong Trinh*, National Dong Hwa University, Taiwan
Shih-Wen Chen, National Dong Hwa University, Taiwan
Xuyen Nguyen Thi My, National Dong Hwa University, Taiwan

Stand-Alone Paper
An Open versus Commercial Digital Biology Textbook: Student Performance, Access, Use and Textbook Purchasing Trends
Christine Schlendorf*, Farmingdale State College, USA
Janaiyah Hipps, Farmingdale State College, USA
Denise Lopez, Farmingdale State College, USA

Stand-Alone Paper
Enhancing High School Students' Self-Regulation with an AI-supported Engineering Design Process
Esen Uzuntiryaki Kondakci, Middle East Technical University, Turkey
Irem Incecay, Middle East Technical University, Turkey
Elif Yilmazoglu, Middle East Technical University, Turkey
Selcuk Kilinc*, Texas A&M University, USA

Stand-Alone Paper
When AI is Involved: An Exploratory Study of Pre-service Teachers Planning Science Lessons with ChatGPT
Xinyu He, University of Georgia, USA
Emily Adah Miller, University of Georgia, USA
Tingting Li, Washington State University, USA

Multi-Strand (14/12) Stand-alone Paper Set
9-Apr-26, 8:30-10:00
Location: Zoom 4

Strand 12: Technology for Teaching, Learning, and Research
Stand-Alone Paper
Core Competencies of Teachers in the Age of AI: Teacher as Designer in Science Education
Taesoo An*, Seoul National University, Korea, Republic of
Sonya Martin*, Seoul National University, Korea, Republic of

Strand 12: Technology for Teaching, Learning, and Research
Stand-Alone Paper
Should We Use Artificial Intelligence for Science Learning Assessment?
Eunbyul Cho*, Seoul National University, Korea, Republic of
Sonya Martin*, Seoul National University, Korea, Republic of

Strand 14: Environmental Education and Sustainability
Stand-Alone Paper
Youth Disorientation in Times of Climate Crises: A Three-Lenses Framework for Agency
Giulia Tasquier*, University of Bologna, Italy
Francesca Pongiglione, University Vita-Salute San Raffaele, Italy
Elena Ricci, University of Verona, Italy

Strand 14: Environmental Education and Sustainability
Stand-Alone Paper
Clicking Toward Climate Justice: Reimagining Digital Platforms for Collective Action
Andrea Weinberg*, Arizona State University, USA
Michelle Jordan*, Arizona State University, USA
Victoria Desimoni, Arizona State University, USA
Iveta Silova, Arizona State University, USA
Rajul Pandya,Arizona State University, USA

Strand 14: Environmental Education and Sustainability
Stand-Alone Paper
Through different eyes: Intuitive and cultural worldviews as predictors of learning in a climate exhibit
Indiana Plant*, University of Utah, USA
Catie Nielson, University of Nevada, Las Vegas, USA
Jordan Giron, University of Utah, USA
Lynne Zummo, University of Utah, USA

Multi-Strand Poster Session (breakout rooms)
9-Apr-26, 10:30-12:00
Location: Zoom 1

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Making Space for Science: How a STEM Makerspace Shapes Elementary Students' Science Attitudes.
Anthony Timpano*, Curtin University, Australia
Rachel Sheffield, Curtin University, Australia
Rekha Koul, Curtin University, Australia

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Characterizing the Ecological Factors Influencing First-Year STEM College Students' Engagement
Uche Osuji*, Georgia State University, USA
Suazette Mooring, Georgia State University, USA
Ciara Glover, Georgia State University, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Scoping Citizen Science for formal science education connection-making
Erin Sperling, Wilfrid Laurier University, Canada
G. Michael Bowen*, Mount Saint Vincent University, Canada

Strand 7: Pre-service Science Teacher Education
Poster
Design-Based Research for Fostering Criticality Through a One Health Perspective: A Microbiota-Focused Learning Sequence
Irene González-Costa*, Universidade De Santiago de Compostela, Spain
Blanca Puig, Universidade De Santiago de Compostela, Spain
Paloma Blanco-Anaya, Universidade De Santiago de Compostela, Spain

Strand 7: Pre-service Science Teacher Education
Poster
Development of MORE-Link schema and its validation in enhancing pre-service chemistry teachers' scientific information reasoning
Like Deng*, the Faculty of Artificial Intelligence in Education, Central China Normal University, China

Strand 8: In-service Science Teacher Education
Poster
Examining the impact of teachers' beliefs about student ability to their changes in practice
Andrea Phillips*, Utah Valley University, USA
Meredith Park Rogers, Indiana University, USA

Strand 8: In-service Science Teacher Education
Poster
When students' literacy proficiency frames the negotiation of care ethics in planning for science education
Rafael Lopes*, USP, Brazil
Daniela Scarpa, USP, Brazil
Danusa Munfurd, UFABC, Brazil

Strand 10: Curriculum and Assessment
Poster
Do instructors' learning assessment practices align with the course's expected learning outcomes?
Hong Tran*, Virginia Tech, USA
Edward Berger, Virginia Tech, USA
Anyerson Cuervo-Basurto, Virginia Tech, USA

Strand 12: Technology for Teaching, Learning, and Research
Poster
Transitioning Cognitive Acceleration through Science Education to Digital: Exploring Alternatives to Experimental Tools
Mourad El Karkri*, University of Jaén, Spain
Marta Romero-Ariza, University of Jaén, Spain
Antonio Quesada, University of Jaén, Spain
Israel Díaz-Santibañez, University of Jaén, Spain

Strand 12: Technology for Teaching, Learning, and Research
Poster
Empowering Equity in STEM: A Research-Based Robotics Camp for Equity-Deserving Youth in Southwestern Ontario
David Potocek*, St. Clair College, Canada
Karamjeet Dhillon, St. Clair College, Canada
John Lopez, St. Clair College, Canada
Sonja Popovski, St. Clair College, Canada

Strand 12: Technology for Teaching, Learning, and Research
Poster
Evaluating AI Technology's Potential and Limitations in Formative Assessment for Elementary Science Projects
Irit Hof-Nahor*, Oranim Academic College, Israel

Strand 13: History, Philosophy, Sociology, and Nature of Science
Poster
Case Study of Preservice Teachers' NOS-Specific PCK in a History and Philosophy of Science Course
Connor Taylor*, Appalachian State University, USA
Nathan Rocheleau, Appalachian State University, USA
Khadija Fouad, Appalachian State University, USA

Strand 13: History, Philosophy, Sociology, and Nature of Science
Poster
Integrating Drama into Family Resemblance Approach-Based NOS Teaching: Insights from Pre-service Teachers
Demet Sahin Kalyon*, Tokat Gaziosmanpasa University, Turkey
Zoubeida R. Dagher, University of Delaware, USA

Strand 14: Environmental Education and Sustainability
Poster
Drama Practices in Science Education: A Review of Graduate Theses on Sustainable Development Goals
Sakine Çiftaslan*, Yıldız Technical University, Turkey
Bülent Güven, Canakkale Onsekiz Mart University, Turkey
Fatih Kana, Canakkale Onsekiz Mart University, Turkey

Strand 14: Environmental Education and Sustainability
Poster
Pre-service Teachers' Perspectives in Response to their Climate Emotions
Emily Olsen*, The Pennsylvania State University, USA
Aubrey Grzywacz, The Pennsylvania State University, USA
Julia Plummer, The Pennsylvania State University, USA

Multi-Strand Roundtable Discussions (breakout rooms)
9-Apr-26, 10:30-12:00
Location: Zoom 2

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable
Science Interest: Elementary and Middle School Science Experiences Inside and Outside the Classroom
Katherine Dabney*, Virginia Commonwealth University, USA
Gerhard Sonnert, Harvard-Smithsonian Center for Astrophysics, USA
Susan Sunbury, Harvard-Smithsonian Center for Astrophysics, USA
Philip Sadler, Harvard-Smithsonian Center for Astrophysics, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
Roundtable
Sustaining Academic Motivation Among Science Education Master's Students During the Pandemic: Perceptions and Adaptations
Nurcan SARIASLAN, Ministry of National Education, Turkey
Cansel Kadioglu Akbulut*, Tokat Gaziosmanpasa University, Turkey

Strand 11: Cultural, Social, and Gender Issues
WIP Roundtable
Parenting while pursuing STEM degrees in Higher education: experiences and institutional practices
Tirza Vargas Giron*, Southern Illinois University, USA

Strand 11: Cultural, Social, and Gender Issues
Roundtable
Photovoicing the affective journeys of women science teachers in Bangladeshi secondary schools
Shamnaz Arifin Mim*, McGill University, Canada

Strand 11: Cultural, Social, and Gender Issues
Roundtable
Underrecognized: Examining Underrepresented Physics, Astronomy, and Engineering Students' Perceived Recognition
Christy Metzger*, University of Delaware, USA

Strand 12: Technology for Teaching, Learning, and Research
Roundtable
Who Gives Better Feedback—Humans or AI?Integrating AI into Science Microteaching Feedback Cycles
Franklin Allaire*, University of Houston-Downtown, USA

Strand 13: History, Philosophy, Sociology, and Nature of Science
9-Apr-26, 10:30-12:00
Location: Zoom 2

Roundtable
The Nature of Science in Physics Education: Perspectives from Malaysian Secondary Teachers
Siti Hidayana Nassiri, Universiti Teknologi Malaysia, Malaysia
Muhammad Abd Hadi Bunyamin*, Universiti Teknologi Malaysia, Malaysia
Noorzana Khamis, Universiti Teknologi Malaysia, Malaysia

Multi-Strand (2/7) Stand-alone Paper Set
9-Apr-26, 10:30-12:00
Location: Zoom 3

Strand 7: Pre-service Science Teacher Education
Stand-Alone Paper
Mindset in Physics and AI Use Behaviors in the Digital Transformation Era
İpek Derman*, Hacettepe University, Turkey
Sevim Bezen, Hacettepe University, Turkey

Strand 12: Technology for Teaching, Learning, and Research
Stand-Alone Paper
From Tool to Teammate: Reimagining Student-AI Collaboration in Engineering Design-Based STEM
Selcuk Kilinc*, Texas A&M University, USA
Elif Yilmazoglu, Middle East Technical University, Turkey
İrem İncecay, Middle East Technical University, Turkey
Esen Uzuntiryaki Kondakci, Middle East Technical University, Turkey

Strand 12: Technology for Teaching, Learning, and Research
Stand-Alone Paper
Enhancing STEM Education with Generative AI: Insights from Students and a Teacher in Thailand
Parin Chawalit*, California State University, San Bernardino – MA in STEM Education (Class of 2025), USA
Xinying Yin*, California State University-San Bernardino, USA

Strand 12: Technology for Teaching, Learning, and Research
Stand-Alone Paper
Generative AI as Science Tutors: Can LLMs Combine High-Level Problem Solving and Advanced Tutoring?
Paul Tschisgale*, Leibniz Institute for Science and Mathematics Education, Germany
Peter Wulff, Ludwigsburg University of Education, Germany

Strand 12: Technology for Teaching, Learning, and Research
Stand-Alone Paper
A Friend, Instructor, Browser, Partner? Interaction Modes in Student–AI Science Learning Conversation
Carolina Sotério*, Teachers College, Columbia University, USA
Tamar Fuhrmann, Teachers College, Columbia University, USA
Jonathan Pang, Teachers College, Columbia University, USA
Paulo Blikstein, Teachers College, Columbia University, USA

Strand 5 Stand-alone Paper Set

Strand 5: College Science Teaching and Learning (Grades 13-20)
9-Apr-26, 10:30-12:00
Location: Zoom 4

Stand-Alone Paper
A Systematic Review of Theoretical and Conceptual Frameworks in STEM Education Research
Dhanya Attipetty*, University of Minnesota, USA
Anita Schuchardt, University of Minnesota, USA

Stand-Alone Paper
What does our curriculum allow for? Exploring the lived curriculum in science education
Shauna Schechtel*, Queen's University, Canada
Amanda Bongers, Queen's University, Canada

Stand-Alone Paper
Enhancing Conceptual Understanding with an AI Tutor: A Field Study in Undergraduate Physics
Tilmann Steinmetz*, University of Tübingen, Germany
Burde Jan-Philipp, University of Tübingen, Germany
Peter Gerjets, The Leibniz-Institut für Wissensmedien, Germany

Stand-Alone Paper
Negotiating social and epistemic participation in undergraduate physics group work
Tom Reshef-Israeli*, Technion - Israel Institute of Technology, Israel
Shulamit Kapon, Technion - Israel Institute of Technology, Israel

Stand-Alone Paper
Active Learning Through Reflection Journals in Introductory Biology
Christel Whitehead*, University of Alabama Birmingham, USA
Peggy Biga, Texas State University, USA
Mary Ann Bodine Al-Sharif, University of Alabama Birmingham, USA

Multi-Strand (3/6/13) Stand-alone Paper Set
9-Apr-26, 12:30-14:00
Location: Zoom 1

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Stand-Alone Paper
Developmental Patterns in Early Childhood Scientific Thinking: Critical Inquiry, Hypothesis Testing, Analytical Interpretation and Metacognition
Elif OZTURK*, Giresun University, Turkey

Strand 6: Science Learning in Informal Contexts
Stand-Alone Paper
Impact of Personalized Narrative on Audience Engagement with Light Pollution Planetarium Show
Elise Abbott*, The Pennsylvania State University, USA
Julia Plummer, The Pennsylvania State University, USA
Christopher Palma, The Pennsylvania State University, USA
Hailey Bowers, The Pennsylvania State University, USA
Clinton Kellick,The Pennsylvania State University, USA
Thomas Gaudin, The Pennsylvania State University, USA

Strand 6: Science Learning in Informal Contexts
Stand-Alone Paper
Exploring the Impact of Facilitating Afterschool STEM Activities on College Students' Interest, Confidence, and Skills
Alexandria Hansen, California State University, Fresno, USA
Amaya De Vore*, California State University, Fresno, USA
Myunghwan Shin, California State University, Fresno, USA

Strand 13: History, Philosophy, Sociology, and Nature of Science
Stand-Alone Paper
Mapping the landscape of stem and ssi integration: research trends and educational implications
Dilek Karışan*, aydin adnan menderes uni, Turkey
Dana Zeidler, university of south florida, USA

Strand 13: History, Philosophy, Sociology, and Nature of Science
Stand-Alone Paper
Learning about Science by Doing Real Science: Fostering NOS Understanding through Citizen Science
Haya Ben Simon*, Technion, Israel
Leah Yifrach*, Technion, Israel
Dina Tsybulsky, Technion, Israel

Strand 4 Stand-alone Paper Set
Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
9-Apr-26, 12:30-14:00
Location: Zoom 2

Stand-Alone Paper
Improving Students' Conceptual Understanding of Cell Division and CT through Unplugged CT Science Module

Ceren Çem*, Yıldız Technical University, Turkey
Mustafa Topçu, Yıldız Technical University, Turkey

Stand-Alone Paper

The Effects of Web 2.0-Supported Argumentation on Students' Science Achievement and Attitude toward Technology

Birsu Bozkurt*, Yildiz Technical University, Turkey
Mustafa Topçu, Yildiz Technical University, Turkey

Stand-Alone Paper

Effect of Educational Digital Game-Supported Science Lessons on Middle School Students' Academic Achievement in Science

Sakine Çiftaslan*, Yıldız Technical University, Turkey
Aslı Görgülü Arı, Yıldız Technical University, Turkey

Strand 11 Stand-alone Paper Set 2

Strand 11: Cultural, Social, and Gender Issues
9-Apr-26, 12:30-14:00
Location: Zoom 3

Stand-Alone Paper

The roles of epistemological versus factual security in evolution acceptance by religious students

Andrea Phillips*, Utah Valley University, USA
Jade Sorensen, Brigham Young University, USA
Jamie Jensen, Brigham Young University, USA
Traegan Webb, Brigham Young University, USA

Stand-Alone Paper

Breaking STEM Barriers Through Robotics, Team Roles, and Gender Dynamics

Shani Goldstein*, Technion, Israel Institute of Technology, Israel
Shahaf Rocker Yoel, Technion, Israel Institute of Technology, Israel
Yehudit Judy Dori, Technion, Israel Institute of Technology, Israel

Stand-Alone Paper

Using Emotion to Understand a Black Woman Preservice Teacher's Justice-oriented Science Teaching and Identity Development

Erin Cox*, University of Michigan, USA
Elizabeth Davis, University of Michigan, USA

Stand-Alone Paper

Are We Telling the Right Stories? The Narrative Effect's Role in Developing Equitable Science Pedagogy

Megan Allen*, Harvard Graduate School of Education, USA
Enrique Suárez, University of Massachusetts Amherst, USA

Stand-Alone Paper

Women's Belonging and Longing: The Affective Push and Pull Within and Beyond Physics

Shamnaz Arifin Mim*, McGill University, Canada
Allison Gonsalves*, McGill University, Canada

Strand 6 Stand-alone Paper Set

Strand 6: Science Learning in Informal Contexts
9-Apr-26, 14:30-16:00
Location: Zoom 1

Stand-Alone Paper
Reimagining Science Capital through Accessible Museum Experiences for Brazilian Blind and Deaf Visitors
Gabriela Heck, Federal University of Rio Grande do Sul (UFRGS), Brazil
Jessica Norberto Rocha*, CECIERJ foundation, Brazil

Stand-Alone Paper
"Look, I Am Bendy": Embodied, Constructionist STEM Learning During a Biomedical Engineering Activity
Zahra Baradaran Shoraka*, University of Iowa, USA
Kay Ramey*, University of Iowa, USA

Stand-Alone Paper
Barriers and Supports in Rural Informal STEM Learning: A Sociocultural and Structural Perspective
Julia Moro*, University of South Carolina, USA
Devan Jones, University of South Carolina, USA

Stand-Alone Paper
Productive Talk as Identity Work in a Virtual STEM Program for Girls of Color.
Sharon Ndubuisi*, Florida State University, USA
Kadijah Zogheib*, Florida State University, USA
Valerie Dada, Babcock University, Nigeria

Stand-Alone Paper
Capturing chemistry in situ: Student interactions and skills in an energy-themed chemical escape room
Shelley Rap*, Weizmann Institute of Science, Israel
Inbal Salomon-Hai, Weizmann Institute of Science, Israel
Ron Blonder, Weizmann Institute of Science, Israel

Strand 7 Stand-Alone Paper Set

Strand 7: Pre-service Science Teacher Education
9-Apr-26, 14:30-16:00
Location: Zoom 2

Stand-Alone Paper
Integrating Socioscientific Issues and STEM in Microteaching: A Practical Approach for Pre-Service Science Teachers
Dana Zeidler, usf, USA
Dilek Karisan*, aydin adnan menderes uni, Turkey

Stand-Alone Paper
Three Lenses on Learning: Anal"ing Preservice Teacher Model Revision Through Sociocultural, Cognitive, and Multimodal Frameworks
Jaclyn Murray*, Mercer University, USA
Alex St. Louis*, Mercer University, USA

Stand-Alone Paper

Pre-Service Secondary Science Teachers' Ideas About Disinformation and How They Should Address It

Elizabeth Hufnagel*, University of Maine, USA

Stand-Alone Paper

Long-term changes in Elementary BEd students' conceptions of science: Comparing responses across decades

G. Michael Bowen*, Mount Saint Vincent University, Canada
Gerald Tembrevilla, Mount Saint Vincent University, Canada

Stand-Alone Paper

Analysis of elementary PST collaboration during interdisciplinary and inquiry-based curriculum development using design-based thinking approaches

Margery Gardner*, Colgate University, USA
Karen Harpp*, Colgate University, USA
Joyce Zheng*, Colgate University, USA

Strand 8 Strand-alone Paper Set

Strand 8: In-service Science Teacher Education
9-Apr-26, 14:30-16:00
Location: Zoom 3

Stand-Alone Paper

Teachers' Perceptions Following AI-Driven Professional Development in Unmanned Vehicles Instruction

Amona Abu-Younis Ali*, Technion – Israel Institute of Technology, Faculty of Education in Science and Technology, Israel
Shahaf Rocker Yoel, Technion – Israel Institute of Technology, Faculty of Education in Science and Technology, Israel
Dov Dori, Technion – Israel Institute of Technology, Faculty of Data and Decisions Science, Israel
Yehudit Judy Dori, Technion – Israel Institute of Technology, Faculty of Education in Science and Technology, Israel

Stand-Alone Paper

Investigating Secondary Science Teachers' Epistemic Beliefs, Motivations, and Perceptions of Modeling Instruction in Reform-Oriented PD

Khalid Alharbi*, North Carolina State University, USA
Soonhye Park, North Carolina State University, USA
Laura Chalfant, North Carolina State University, USA
Grace Carroll, North Carolina State University, USA
Katherine Glover,North Carolina State University, USA
Matt Reynolds, North Carolina State University, USA
Lynn Huff, North Carolina State University, USA
Scott Ragan, North Carolina State University, USA
Jason Painter, North Carolina State University, USA

Stand-Alone Paper

Developing Effective Strategies for Challenges in Acquiring Relational Reasoning Skills - an Indicator of Teachers' Expertise

Vered Agmon*, Iasi university, Israel

Stand-Alone Paper

Comparing the Burnout Trends of Early Career STEM Teacher Leavers and Stayers

Shannon Navy*, Kent State University, USA
Ella Yonai, Auburn University, USA

Closing Remarks

9-Apr-26, 16:00-
Location: Zoom 1

Conference Day 1
19 April 2026

New Member Welcome Session
19-Apr-26, 7:00-
Location: Willow A (L2)

Social Event

Organizers
Joi Merritt, [1]James Madison University, Harrisonburg, VA, USA
Rebekah Hammack, Purdue University, West Lafayette, IN, USA
Contributors
Rebekah Hammack, Purdue University, West Lafayette, IN, USA

Pre-conference workshops
19-Apr-26, 8:10-11:45

Pre-Conference Workshop
Centering Joyful Transgression and Radical Imagination: Equity and Ethics Considerations
Location: Willow A (L2)

Organizers
María S. Rivera Maulucci, Barnard College Columbia University
Iliana De La Cruz
Dominick Fantacone, SUNY Cortland, USA

Pre-Conference Workshop
Mapping Research for Science Media Literacy: From Why to What and How
Location: Ravenna C (L3)

Organizers
Jonathan Osborne, Stanford University, USA
Douglas Allchin, Stanford University, USA

Pre-Conference Workshop
Behind the editor's desk: Learning to publish and review for the Journal of Research in Science Teaching (JRST)
Location: Ravenna AB (L3)

Organizers
Matthew Kloser, University of Notre Dame, USA
Dana Vedder-Weiss, Ben Gurion University of the Negev
Edna Tan, University of North Carolina Greensboro, USA

Contributors
Dana Vedder-Weiss, Ben Gurion University of the Negev, Israel
Matthew Kloser, University of Notre Dame, USA
Edna Tan, University of North Carolina Greensboro, USA
Elif Ozulku, University of Notre Dame, USA
Till Bruckerman, Leibniz University Hannover, Germany
Miray Tekkumru-Kisa, University of Illinois, USA
Gur Arie Livni Alcasid, University of the Negev, Israel

19-Apr-26, 8:10-11:45
Pre-Conference Workshop
Engaging with Animals: Incorporating Interspecies Empathy into Science Education Research & Pedagogy
Location: Issaquah AB (L3)

Organizers
Bryan Nichols, Florida Atlantic University, FL, USA
Sarah Brenkert, Florida Atlantic University, FL, USA
Emily Bernhardt, Florida Atlantic University, FL, USA

Pre-Conference Workshop
Integrating Science with Machine Learning for Upper Elementary Grades
Location: Greenwood (L3)

Organizers
Ezgi **Yesilyurt**, Utah State University, UT, USA

Contributors
Dilara Kara-Zorluoglu, University of Nevada Las Vegas, NV, USA
Refika Turgut, University of South Carolina-Upstate, SC, USA
Erdogan Kaya, The University of Texas at Arlington, TX, USA
Ezgi Yesilyurt, Utah State University, UT, USA
Elif Adibelli-Sahin
Hasan Deniz, University of Nevada, Las Vegas, NV, USA

Pre-Conference Workshop
Science Education Research as Non-Extractive, Community-Centered Praxis: Responding to Pressing Challenges Together
Location: Capitol Hill (L3)

Organizers
Uma Ganesan, The University of Texas Rio Grande Valley, TX, USA
Miriam Ortiz, The University of Texas Rio Grande Valley, TX, USA

Contributors
Miriam Ortiz, The University of Texas Rio Grande Valley, TX, USA
Angela Chapman, The University of Texas Rio Grande Valley, TX, USA
Alejandro Gallard, Georgia Southern University, GA, USA
Uma Ganesan, The University of Texas Rio Grande Valley, TX, USA
Enrique Suarez, University of Massachusetts-Amherst, USA
María González-Howard, The University of Texas at Austin, USA
Alexander Eden, Salem State University, USA

Pre-Conference Workshop
Cultural and Place-Based Learning from Duwamish Community Members Indigenous Science Knowledge Research Interest Group (ISK RIG)
Location: Ballard (L3)

Organizers
Julie Robinson, University of North Dakota, ND, USA
Filiberto Barajas-Lopez, University of North Dakota, ND, USA

Pre-Conference Workshop
Playful Futurism for Radical Imagination in Science Education

Location: KIrkland (L3)

Organizers
Isis Howard, University of Calgary, Canada
Mindy Chappell, University of Illinois, USA

Pre-Conference Workshop
Contributing to Theory through Science Education Research
Location: Columbia (L4)

Organizers
Katharine Doerr, Malmö University, Sweden

Contributors
Kevin Nguyen, Sonoma State University, USA
Katerina Günter, Umeå Universitet, Sweden
Bjørn Johannsen, University College Copenhagen, Denmark
Tatiane Russo-Tait, University of Georgia Athens, GA, USA
Katharine Doerr, Malmö University, Sweden

Graduate Student Luncheon
19-Apr-26, 11:45-12:45
Location: Metropolitan Ballroom A/B (L3)

Social Event
Graduate Student Luncheon

Organizers
Collins Moga, University of Massachusetts Dartmouth, Massachusetts, USA
Arya Karumanthra, Indiana University Bloomington, Indiana, USA
Xin Xia, University of Virginia, Charlottesville, Virginia, USA

Presidential Welcome
19-Apr-26, 13:00-13:15
Location: Grand Ballroom (L2)

Plenary Session

Keynote Address
19-Apr-26, 13:15-14:30
Location: Grand Ballroom (L2)

Dance as Resistance: Embodiment, Joy, and Radical Imagination

Speaker
***Ms. Melba Ayco**, founder and Artistic director of Northwest Tap Connection*

Cultivating Scientific Explanations and Argumentation
Strand 1: Science Learning: Development of student understanding
19-Apr-26, 14:45-16:15
Location: Ravenna AB (L3)

Stand-Alone Paper
Exploring the Relationship between Changes in Dialogue and Student Language Use in Generative Science Classrooms
Alison Warren*, Purdue University, USA
Brian Hand, University of Iowa, USA
Derek Rodgers, University of Iowa, USA

Stand-Alone Paper
Socially Mediated Metacognition in Socioscientific Issues: How Conversational Dynamics Shape Collaborative Reasoning
Sumaiya Tabassum*, University of Nebraska–Lincoln, USA
Alex Sobotka, Iowa State University, USA

Asghar Gill, University of Nebraska–Lincoln, USA
Jenny Dauer, University of Nebraska–Lincoln, USA

Stand-Alone Paper
Linking Scientific Argumentation and Epistemic Beliefs to Cultivate Informed Learners: Evidence from Survey Analysis
Jing Lin*, Beijing Normal University, China
Letong Zhang, Renmin University of China, China
Knut Neumann*, Leibniz Institute for Science and Mathematics Education at Kiel University, Germany
Mei-Hung Chiu, Taiwan Normal University, Taiwan

Stand-Alone Paper
Moving beyond the claim: Examining how elementary science students construct evidence-based explanations during science gameplay
Georgia Hodges*, University of Georgia, USA
Kayla Flanagan, University of Georgia, USA
Lourdes Gaibisso, University of Mississippi, USA

Talk, Debate, and Collaborative Meaning-Making in Science Education

Strand 2: Science Learning: Contexts, Characteristics and Interactions
19-Apr-26, 14:45-16:15
Location: Jefferson A (L4)

Stand-Alone Paper
Processual Responsiveness in Facilitating the Cogenerative Dialogues between High School Students and Scientists
Pei-Ling Hsu*, University of Texas at El Paso, USA

Stand-Alone Paper
The Relationship Between Argumentation and Debate Opportunities and PISA Performance
Andy Cavagnetto*, Washington State University, USA
Shenghai Dai, Washington State University, USA

Stand-Alone Paper
Tracing Knowledge Construction through Talk Turns in Collaborative CURE Labs: An Evolutionary Perspective
omowumi frieyo*, washington state university, USA
YETUNDE ADARAMOLA, washington state university, USA
Patrick Ochieng, washington state university, USA
Andy Cavagnetto, washington state university, USA

Stand-Alone Paper
Writing (Righting) Ethical Uncertainty? Tracing Young Children's More-than-Human Sensemaking Across an Integrative Science-Literacy Unit
Jon Wargo*, University of Michigan, USA

Organizational Sensemaking and Reframing of Elementary Science Practices

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
19-Apr-26, 14:45-16:15
Location: Seneca (L4)

Stand-Alone Paper
Teachers' Persistence With a Science Education Innovation After Research Incentives and Accountability Are Withdrawn
Patrick Smith*, Horizon Research, Inc., USA
Sarah Carrier*, NC State University, USA
Christine Goforth, North Carolina Museum of Natural Sciences, USA
Lindsey Sachs, Horizon Research,Inc., USA

Stand-Alone Paper
We can't stray outside of our packaged curriculum: Teacher autonomy and elementary science instruction
Laura Wheeler*, Brigham Young University, USA

Stand-Alone Paper
Making Time, Making Sense: Cross-Level Organizational Sensemaking to Re-Frame Elementary Science Practices
Michelle Brown*, State College Area School District, USA
Carla Zembal-Saul, The Pennsylvania State University, USA

Advancing Chemistry and Physics Learning Through Innovative Pedagogies

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
19-Apr-26, 14:45-16:15
Location: Juniper (L2)

Stand-Alone Paper
Integrating Complexity with PCK: Dynamics of Teacher Learning in Chemistry Classrooms
Supawit Kanitjinda*, Kasetsart University, Thailand
Chatree Faikhamta, Kasetsart University, Thailand

Stand-Alone Paper
A Fields-Based Approach to Energy Understanding: An RCT on the Role of Self-Efficacy
Nikola Schild*, IPN, Germany
Knut Neumann*, IPN, Germany
Jeffrey Nordine*, University of Iowa, USA

Stand-Alone Paper
Characteristics of Student Guidance in a Chemistry-based Educational Escape Room
Hagai Zeira*, Technion, Israel Institute of Technology, Israel
Shirly Avargil, Technion, Israel Institute of Technology, Israel

Stand-Alone Paper
Cross-Country Comparison of Chemistry Teachers' Experience with Emergency Remote Teaching
Shirly Avargil*, Technion Israel Institute of Technology, Israel

Anat Shauly, Technion Israel Institute of Technology, Haifa, Israel
Jenna Koenen, Technical University of Munich, Germany

AI and Technology in STEM Learning

Strand 5: College Science Teaching and Learning (Grades 13-20)
19-Apr-26, 14:45-16:15
Location: Aspen (L2)

Stand-Alone Paper

Self-Directed Learning Profiles and the Influence of Technology-Based Interventions Among STEM Undergraduates

Arif Rachmatullah*, SRI International, USA
Krystal Thomas, SRI International, USA
Jessica Mislevy, SRI International, USA

Stand-Alone Paper

Investigating Student Perceptions of AI-Generated Feedback and Scores for Physics Argumentation Essays

Winter Allen*, Department of Physics and Astronomy, Purdue University, USA
Anand Shanker, Purdue University, USA
N. Sanjay Rebello, Department of Physics and Astronomy, Purdue University, USA

Stand-Alone Paper

Game-Based vs. Simulation-Based Instruction: exploring the sequencing effect on the understanding of the Photoelectric Effect

Razan Hamed*, Purdue University, USA
Koushiki Pohit, Purdue University, USA
Sanjay Rebello, Purdue University, USA

Museum Innovation & Transformation

Strand 6: Science Learning in Informal Contexts
19-Apr-26, 14:45-16:15
Location: Virginia (L4)

Stand-Alone Paper

A Framework for Systematic Radical Reimagining of Science Museums

Alexandria Muller, Rowan University, USA

Stand-Alone Paper

Strife as civic practice: Ideational expansion amid social conflict in a climate science exhibit

Lynne Zummo*, University of Utah, USA
Kaitlyn Kinshella, University of Utah, USA
Emma Gargroetzi, University of Texas at Austin, USA
Jordan Giron, University of Utah, USA
Benjamin Janney, University of Utah, USA
Ajla Auker, University of Utah, USA

Stand-Alone Paper

Exploring exhibit development within university informal science learning centers

Hailey Bowers*, Pennsylvania State University, USA
Julia Plummer, Pennsylvania State University, USA

Preparing Preservice teachers for Inclusive Science Teaching

Strand 7: Pre-service Science Teacher Education
19-Apr-26, 14:45-16:15
Location: Columbia (L4)

Stand-Alone Paper
Translanguaging as a Path to Onto-Epistemic Heterogeneity: Preparing Preservice Teachers for Multilingual Science Classrooms
Leticia Garza*, University of Texas, USA
Maria Gonzalez-Howard*, University of Texas, USA

Stand-Alone Paper
All Means All: Lesson Study for Inclusive Elementary Science Teaching
Bianor Valente*, Escola Superior de Educação de Lisboa, Portugal
Paulo Maurício, Escola Superior de Educação de Lisboa, Portugal

Stand-Alone Paper
Exploring Preservice Elementary Science teachers' perception of Inclusive Instruction and Science Identity Formation.
Chike Elue*, University of Nevada, Las Vegas, USA
Samuel Hoque-Fahad, University of Nevada, Las Vegas
Tina Vo, University of Nevada, Las Vegas
Debika Jana, University of Nevada, Las Vegas
Stacy Bird, Southern Nevada Regional Professional Development Program
Grace Njoroge, Las Vegas Natural Science & History Museum

Stand-Alone Paper
Elevating radical hope in how elementary preservice teachers position multilingual learners' multimodal resources for sensemaking
Samuel Lee*, California State University, Long Beach, USA
María González-Howard, University of Texas at Austin, USA

Epistemic Positioning and Practices in Preservice Teachers

Strand 7: Pre-service Science Teacher Education
19-Apr-26, 14:45-16:15
Location: Jefferson B (L4)

Stand-Alone Paper
Exploring Epistemic Orientation to Develop Preservice Teachers' Engagement in Science Practices
Yetunde Adaramola*, Washington State University, USA
Patrick Ochieng, Washington State University, USA
Andy Cavagnetto, Washington State University, USA

Stand-Alone Paper
The Role of Prior Knowledge and Abductive Reasoning in Scientific Experimental Design among Pre-service Teachers
Naeun Lee*, Korea National University of Education, Korea, Republic of
Ilho Yang, Korea National University of Education, Korea, Republic of

Stand-Alone Paper
Grasp the Grasp of Evidence: Science Teachers' Understanding and Use of Evidentiary Reasoning
Won Jung Kim*, Santa Clara University, USA

Stand-Alone Paper
Epistemological Reflections on Using a Scientific Method Heuristic in a Preservice Teacher Module
Annemarie Hattingh, University of Cape Town, South Africa
Angela Stott*, University of the Free State, South Africa

The centrality of emotion in teacher learning

Strand 8: In-service Science Teacher Education
19-Apr-26, 14:45-16:15
Location: Cedar AB (L2)

Stand-Alone Paper
"That's why I remain a teacher": Emotion and professional learning of highly experienced STEM teachers
Michael Mauricio*, The University of Texas at San Antonio, USA
Jorge Solis, The University of Texas at San Antonio, USA
Kristen Lindahl, The University of Texas at San Antonio, USA
Bedrettin Yazan, The University of Texas at San Antonio, USA

Stand-Alone Paper
Frustration as an Asset in STEM Learning: STEM Mentors' Reframing of Frustration into Productive Inquiry
Abiodun Babalola, University of Alabama, USA
Shannon Davidson, University of Alabama, USA
Joy Anogwih, University of Alabama, USA

Stand-Alone Paper
Felt Transgressions and Material Joy: Teacher Learning in Electronic Textiles Professional Development
Joanna Goode*, University of Oregon, USA
Casey Tiemann, University of Oregon, USA
Adrienne Pinsoneault, University of Oregon, USA

Stand-Alone Paper
Emotionally Activating Science Practices: A Study of Teacher Lesson Reflections Based on Control Value Theory
Ella Yonai*, Auburn University, USA
Julie Luft, University of Georgia, USA
Brooke Whitworth, University of South Carolina, USA

Exploring instructional relevance across the assessment system: from classroom to state assessments

Strand 10: Curriculum and Assessment
19-Apr-26, 14:45-16:15
Location: Ravenna C (L3)

Related Paper Set
Alignment Study Methodology for Curriculum-Anchored Assessments
Aneesha Badrinarayan, Education First, USA
Katie Van Horne*, Concolor Research, USA

Related Paper Set
Supporting HQIM Implementation and Science Assessment Through Instructional Relevance at the State Level
Tana Luther*, Louisiana Department of Education, USA

Related Paper Set
Designing 3D performance assessments for instructional relevance
Jill Wertheim*, WestEd, USA
Lauren Stoll, WestEd, USA
Catherine Zozakiewicz, WestEd, USA

Related Paper Set
Designing Curriculum-Embedded Assessment for Instructional Relevance
Amelia Gotwals, Michigan State University, USA

Related Paper Set
Designing Curriculum-Aligned Interim Assessments for Instructional Relevance at the District Level
TJ Heck, Cognia, USA

Community Partnerships within Science Education Research: Building Trust and Reciprocity

Strand 11: Cultural, Social, and Gender Issues
19-Apr-26, 14:45-16:15
Location: Willow A (L2)

Symposium
Community Partnerships within Science Education Research: Building Trust and Reciprocity
Julie Robinson*, University of North Dakota, USA
Sarah Voss*, Western Washington University, USA
Dimitri Smirnoff*, University of Minnesota, USA
Jadda Miller*, University of California Davis, USA
Nicole Chlebek*, Florida International University, USA
Lama Jaber*, Florida State University, USA
Peresang Sukinarhimi*,, National Sun Yat-sen University,, Taiwan
Lin-Chien Tung1*, National Sun Yat-sen University,, Taiwan
Josie Melton, Western Washington University, USA

Gender, interaction, and relationality among youth in STEM

Strand 11: Cultural, Social, and Gender Issues
19-Apr-26, 14:45-16:15
Location: Willow B (L2)

Stand-Alone Paper
Epistemic Tools to Encourage Epistemic Risk Taking in Middle School Science
Kathryn Bateman*, The Pennsylvania State University, Harrisburg, USA

Brandin Conrath*, Virginia Commonwealth University, USA

Stand-Alone Paper

Equal Numbers, Unequal Roles: Gendered Problem-Solving in STEM Digital Games

Xinyao Cai*, The University of Hong Kong, Hong Kong
Chen Chen, The University of Hong Kong, Hong Kong

Stand-Alone Paper

Infrastructuring for Climate Justice in STEM-Rich Making: The Role of Critical Relationality

Angela Calabrese Barton*, University of Michigan, USA
Wisam Sedawi, University of Michigan, USA
Edna Tan, university of north carolina, USA

AI-Supported Scientific Argumentation & Reasoning

Strand 12: Technology for Teaching, Learning, and Research
19-Apr-26, 14:45-16:15
Location: Ballard (L3)

Stand-Alone Paper

From Beliefs to Better Arguments: How Trust in GenAI Shapes Student Improvement in Socio-Scientific Argumentation

Chi-Jung Sui*, National Academy for Educational Research, Taiwan

Stand-Alone Paper

Designing an AI Chatbot Tool to Support Scientific Argumentation

Field Watts*, Educational Testing Service, USA
Lei Liu, Educational Testing Service, USA
Teresa Ober, Educational Testing Service, USA
Yi Song, Educational Testing Service, USA
Euvelisse Jusino-Del Valle, Educational Testing Service, USA
Xiaoming Zhai, University of Georgia, USA

Environmental Identities, Hazard Literacy, and Critical Discourses

Strand 14: Environmental Education and Sustainability
19-Apr-26, 14:45-16:15
Location: Issaquah AB (L3)

Stand-Alone Paper

Assessing Hazard Literacy in adults: Science Education for Disaster Risk Reduction and preparedness

Youngjin Choi*, Hazard Literacy Center, Korea, Republic of
Mikyung Sim, Hazard Literacy Center, Korea, Republic of
Jihee Lee, Hazard Literacy Center, Korea, Republic of
Hyunju Lee, Ewha Womans University, Korea, Republic of
Donghee Shin, Ewha Womans University, Korea, Republic of

Stand-Alone Paper

Latent profiles of Korean adults' hazard literacy: Using the Hazard Literacy Competency Test (HLCT)

Jihee Lee*, Ewha Womans University, Korea, Republic of
Mikyung Sim, Ewha Womans University, Korea, Republic of
Youngjin Choi, Ewha Womans University, Korea, Republic of

Donghee Shin, Ewha Womans University, Korea, Republic of
Su-Young Kim, Ewha Womans University, Korea, Republic of

Stand-Alone Paper
Determinants of Lower Environmental Identity among Asian Communities in Hawai'i
Jhuchun yang*, Institute of Education, National Cheng Kung University, Taiwan
Paichi Pat Shein, Institute of Education, Taiwan

Stand-Alone Paper
Intellectual Virtues for the Capitalocene: A Critical Discourse Analysis of a Science Unit
Ajay Sharma*, University of Georgia, USA
Irem Balta, University of Georgia, USA

Joyful transgressions and radical imaginations with and for Asian and Pacific Islanders through Science Teaching and Learning

19-Apr-26, 14:45-16:15
Location: Redwood AB (L2)

Administrative Session

Organizers
Rishi Krishnamoorthy[1], University of Toronto, Toronto, Canada
Edna Tan, University of North Carolina at Greensboro, Greensboro, NC, USA

Contributors
Soo-Yean Shim, Seoul National University, Korea, Republic of
Hye-eun Chu, Macquarie University, Sydney, NSW, Australia
Sarah Hajama, Macquarie University, Sydney, NSW, Australia
Johan Tabora, Northwestern University, Evanston, Illinois, USA
Jessica Chen, Stony Brook University, USA
Felicia Leammukda, St.Cloud State University, Minnesota, USA
Sarah Fankhauser, Oxford College of Emory University, Oxford, Georgia, USA

Making Science Visible: Connecting Hands-On Projects with Minds-On, Meaning-Oriented Learning

Strand 2: Science Learning: Contexts, Characteristics and Interactions
19-Apr-26, 16:30-18:00
Location: Jefferson A (L4)

Stand-Alone Paper
The Impact of STEM-PBL on Secondary School Students' Scientific Literacy
Chuan Li, Hebei Normal University, China
Qianqian Gao*, Hebei Normal University, China
Jinghua Liu, Hebei Normal University, China

Stand-Alone Paper
Science Fair and Self-Determination: The Case of One Biracial 4th Grade Girl
Scarlett Calvin*, University of Texas, USA
Emma Gargroetzi, University of Texas, USA
Leticia Garza, University of Texas, USA

Stand-Alone Paper
Integrating Hands-On, Open, and Meaning-Oriented Science to Foster Equitable Engagement in K–12 Classrooms
Olayinka Oyewole*, Florida State University, USA
Kolawole Kushimo*, University of Massachusetts Dartmouth, USA
Peter Idowu, Florida State University, USA
Oluwatosin Akande, University of Ibadan, Nigeria

Advancing Instructional Approaches in Elementary Science Education

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
19-Apr-26, 16:30-18:00
Location: Seneca (L4)

Stand-Alone Paper
Effect of 5E Learning Model Integrated With 5R on Elementary Students' Scientific Language Development
Firuze Öztaş*, Hacettepe University, Turkey
Sevgi KINGIR, Hacettepe University, Turkey

Stand-Alone Paper
Adaptation of the Coding Readiness Assesment for Early Childhood Children into Turkish
Nazlı ÜLKER HANÇER, Yıldız Technical University, Turkey
Mustafa TOPÇU*, Yıldız Technical University, Turkey

Stand-Alone Paper
Anal"ing NGSS-Aligned Science Instruction for Multilingual Learners: A Discourse Analysis Using ELPD and WIDA Frameworks
Dan Jin*, University of Georgia, USA
Emily Adah Miller, University of Georgia, USA
Ruth Harman, University of Georgia, USA
Hong H. Tran, Purdue University, USA

Stand-Alone Paper
Developmental Potential of Self-Generated Analogy-Based Modeling in PMM
CHEN CHEN*, Department of Science Education, National Taipei University of Education, Taiwan
Jing Lin, Department of Science Education, National Taipei University of Education, Taiwan

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Bringing NGSS to Life: Standards-Based and Place-Based Science Learning

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
19-Apr-26, 16:30-18:00
Location: Juniper (L2)

Stand-Alone Paper
Bridging Standards and Place: Place-Based PBL in Rural STEM Classrooms
Courtney Bernal*, University of South Carolina, USA
Christine Lotter*, University of South Carolina, USA
DeNae Kizys*, University of South Carolina, USA

Dodie Limberg, University of South Carolina, USA
Bryndle Bottoms, University of South Carolina, USA
Joe Howell, University of South Carolina, USA
Brittany Sandonato, University of South Carolina, USA

Stand-Alone Paper

From Field to Framework: Discovering NGSS Elements in Nature Journals

Jessica Farquhar*, Oklahoma State University, USA
Stephanie Hathcock*, Oklahoma State University, USA

Stand-Alone Paper

A Longitudinal Case Study on Writing-to-learn Strategies in Inquiry-based Middle School Science Classrooms

Raju Ahmmed*, Department of Curriculum & Instruction, University of Houston, USA
Jie Zhang, Department of Curriculum & Instruction, University of Houston, USA
Sissy Wong, Department of Curriculum & Instruction, University of Houston, USA
Laveria Hutchison, Department of Curriculum & Instruction, University of Houston, USA
Samuel Katende, Department of Curriculum & Instruction, University of Houston, USA

Reflective and Real-World Learning in STEM

Strand 5: College Science Teaching and Learning (Grades 13-20)
19-Apr-26, 16:30-18:00
Location: Aspen (L2)

Stand-Alone Paper

Knowing About to Knowing Through: First-Generation College Students' Epistemic Agency in a Field Science Camp

Priyanka Parekh*, Northern Arizona University, USA
Ron Gray*, Northern Arizona University, USA

Stand-Alone Paper

Exploring Joyful Transgressions in STEM: Thematic Analysis of Student Notebooks from a University Sensemaking Course

Thomas McKenna*, Boston University, USA

Stand-Alone Paper

Embedding Citizen Science in an Undergraduate Marine Science Class to Address Climate Change/Biodiversity Issues

Muhammad Ijaz*, University of Massachusetts, USA
Stephen Witzig, University of Massachusetts, USA

STEM Motivation, Pathways & Participation

Strand 6: Science Learning in Informal Contexts
19-Apr-26, 16:30-18:00
Location: Virginia (L4)

Stand-Alone Paper
Motivations of Students from Economically Disadvantaged Backgrounds to Complete a Seven-Month Science Internship
Pei-Ling Hsu*, University of Texas at El Paso, USA

Stand-Alone Paper
Building Big Things for Community: Youth infrastructuring present desires into sustainable futures.
Edna Tan*, University of North Carolina at Greensboro, USA
Angela Calabrese Barton, University of Michigan, USA
Ti'Era Worsley, Northern Virginia Community College, USA
Wisam Sedawi, University of Michigan, USA

Stand-Alone Paper
Transforming STEM Research Access for Third-Year and Transfer Undergraduate Students
Karina Canaba*, The University of Texas at El Paso, USA
Angelica Monarrez*, The University of Texas at El Paso, USA
Jose Banuelos, The University of Texas at El Paso, USA

Stand-Alone Paper
Place-Sustaining STEM Learning, Situated Expectancy-Value Beliefs, and Career Interests
Guan Saw*, Claremont Graduate University, USA
Kimberly Megyesi-Brem, Claremont Graduate University, USA
Ryan Culbertson, Texas Tech University, USA
Jesus Gonzalez, The University of Texas Rio Grande Valley, USA
Eleazar Marquez,The University of Texas Rio Grande Valley, USA

Developing Preservice Teachers' STEM Teaching Competence

Strand 7: Pre-service Science Teacher Education
19-Apr-26, 16:30-18:00
Location: Columbia (L4)

Stand-Alone Paper
Developing Integrated STEM Teaching Self-Efficacy: Insights from U.S. and Australian Preservice Teachers
Deepika Menon*, University of Nebraska-Lincoln, USA
Sarika Kewalramani, Swinburne University of Technology, Australia

Stand-Alone Paper
Do Group Interaction and Engagement in STEM Activities Influence Pre-service Teachers' Acquisition STEM Teaching Competence
Hsiao-Lin Tuan*, National Changhua University of Education, Taiwan
Chi-Chin Chin, National Taichung University of Education, Taiwan

Chien-Ying Chou, National Changhua University of Education, Taiwan
Hui-Yi Peng, National Changhua University of Education, Taiwan

Stand-Alone Paper
Early Childhood Preservice Opportunities to Learn to Teach Science and Engineering During Field Placement Experiences
Rosa Mykyta-Chomsky*, University of Delaware, USA
Jennifer Gallo-Fox, University of Delaware, USA
Maisha Mouli, University of Delaware, USA

From Identity to Instruction: Examining Preservice Teachers' Growth in Science Teaching

Strand 7: Pre-service Science Teacher Education
19-Apr-26, 16:30-18:00
Location: Jefferson B (L4)

Stand-Alone Paper
Beyond the Hook: Research on Elementary Teacher Candidates' Use of Children's Literature in Science Instruction
Alexis Markavage*, Indiana University, USA
John Mensah*, Indiana University, USA
Meredith Park Rogers, Indiana University, USA

Stand-Alone Paper
Case studies of Preservice Teacher Learning to Take Up Storyline Instruction with Critical Intentionality
Sage Andersen*, SUNY Cortland, USA
María González-Howard*, The University of Texas at Austin, USA

Stand-Alone Paper
Motivation and Science Identity Changes in Pre-Service Elementary Teachers Following a Science CURE
Amandeep Kaur*, Texas State University, USA
Sunni Taylor, Texas State University, USA
Kristy Daniel, Texas State University, USA
Carrie Bucklin*, Texas State University, USA

Stand-Alone Paper
Visualizing Dialogic Shifts in Preservice Science Teachers Using Equity Maps
Mandy Dunphy*, Baylor University, USA
Krystle Moos, Baylor University, USA
Brian Hand, University of Iowa, USA

Developing teacher agency through transformative professional learning

Strand 8: In-service Science Teacher Education
19-Apr-26, 16:30-18:00
Location: Cedar AB (L2)

Stand-Alone Paper
Reimagining Science Teaching: Promoting teacher agency through a research-practice partnership for Bee Hunting convergent research
Isabel Delgado*, University of Puerto Rico, USA
Sara Ocasio*, University of Puerto Rico, USA

Stand-Alone Paper

Enacting Agency: An Ecological Perspective on Teachers' Experiences of an Integrated Curriculum

Dilara Kara-Zorluoglu*, University of Nevada, Las Vegas, USA
Ezgi Yesilyurt, Utah State University, USA
Erdogan Kaya, The University of Texas at Arlington, USA
Refika Turgut, University of South Carolina-Upstate, USA
Elif Adibelli-Sahin, Development Workshop, Turkey
Hasan Deniz, University of Nevada, Las Vegas, USA

Stand-Alone Paper

In-Service Teachers Cultivating Student Agency through Safety Science: A Year-Long Fellowship Case Study

Emmanuel Adeloju*, Arizona State University, USA
Michelle Jordan*, Arizona State University, USA
Sarah Suloff, Arizona State University, USA
Nicole Oster, Arizona State University, USA
Andrea Weinberg,Arizona State University, USA

Stand-Alone Paper

Toward Climate Justice: Developing Critical Transformative Teacher Agency

Wisam Sedawi*, University of Michigan, USA
Angela Calabrese-Barton, University of Michigan, USA
Batoul Abdalla, University of Michigan, USA
Rachel Sherwin, University of Michigan, USA

Measurement Innovations for Assessing Science Learning, Identity, and Career Development

Strand 10: Curriculum and Assessment
19-Apr-26, 16:30-18:00
Location: Ravenna C (L3)

Stand-Alone Paper

Measuring Entrepreneurial Career Development in STEM: Validation of the STEM Entrepreneurial Career Development Measure (SECDM)

Gizem Ozyazici*, Syracuse University, USA
Qiu Wang, Syracuse University, USA
John Tillotson, Syracuse University, USA

Stand-Alone Paper

Development and Validation of a Secondary Student Scientific Argumentation Competence Instrument in 'Biology and Environment'

Ying Zhou*, Jiujiang University, China
Jian Wang, Beijing Normal University, China

Stand-Alone Paper

A multifaceted measurement approach reveals student profiles that predict intentions to persist in computing

Austin Zuckerman*, Cornell University, USA
Gena Sbeglia, San Diego State University, USA
Ashley Juavinett, University of California San Diego, USA

Considering Researcher-Participant Relations in How We Approach STEM Education Research

Strand 11: Cultural, Social, and Gender Issues
19-Apr-26, 16:30-18:00
Location: Redwood AB (L2)

Related Paper Set
Mapping STEM Education Co-Design Relationships with Community Organizations
Brian Gravel, Tufts University, USA
Dionne Champion, TERC, USA
Eli Tucker-Raymond, Boston University Wheelock College, USA
Amon Millner, Olin College of Engineering, USA
Christopher Wright*, Drexel University, USA
Ayanna Allen-Handy, Drexel University, USA
L. Clara Mabour, Tufts University, USA

Related Paper Set
From Participant to Partner: Empowering Students as Partners in Research and Dissemination Through Storytelling Workshops
Monica Cardella*, Florida International University, USA
Dorothy Gocol, Florida International University, USA

Related Paper Set
Learning from Multilingual and Multidialectal Communities: The Everyday Origins of Engineering Practices
Greses Perez*, Tufts University, USA
G.R. Marvez, Tufts University, USA
Philippa Eshun, Tufts University, USA
Clara Mabour, Tufts University, USA
Taisha Pierre, Tufts University, USA
Mia Jimenez, Tufts University, USA
Pragyee Shrestha, Tufts University, USA
Luis Suarez, Tufts University, USA

Student belonging, identity, and rightful presence in STEM

Strand 11: Cultural, Social, and Gender Issues
19-Apr-26, 16:30-18:00
Location: Willow B (L2)

Stand-Alone Paper
A Socially Transformative Approach to Teaching Genetics Among Secondary School Biology Students
Umar Adam*, Lagos State University, Nigeria
Samuel Okenla, Lagos State University, Nigeria
Jomo Mutegi, Old Dominion University, USA
Mujibat Akorede, Old Dominion University, USA
Mary Olayanju, Federal College of Education (Technical)), Nigeria
Seth Cudjoe, Old Dominion University, USA
Steevenson Rosema, Old Dominion University, USA

Stand-Alone Paper
Rightful Presence to Foster Educator Reflection and Student Belonging in STEM
Katherine King*, Georgia Institute of Technology, USA
Justina Jackson*, Georgia Institute of Technology, USA
Meltem Alemdar, Georgia Institute of Technology, USA

Stand-Alone Paper
A Structural Equation Model for Youths' STEM Identity Development: Impact of Contextual STEM Learning Experiences
Amdad Ahmed Awsaf*, Florida International University, USA
Remy Dou, University of Miami, USA
Susan Sunbury, Harvard University, USA
Gerhard Sonnert, Harvard University, USA
Philip Sadler,Harvard University, USA

Stand-Alone Paper
Between Two Worlds: Physics Students Building Belonging and Identity through Equity Work
Carolina Cruz-Vinaccia*, McGill University, Canada

AI-Enhanced Assessment & Automated Scoring

Strand 12: Technology for Teaching, Learning, and Research
19-Apr-26, 16:30-18:00
Location: Ballard (L3)

Stand-Alone Paper
Prompted AI-Tutors to support experimental problem solving
Hendrik Maas*, Leibniz University Hannover, Germany
Gunnar Friege, Leibniz University Hannover, Germany

Stand-Alone Paper
Automated Scoring of Constructed Responses: BERT Performance on Near- and Far-Transfer Biochemistry Problems
Cheng-Wen He*, University of Georgia, USA
Peng He, Washington State University, USA
Tingtin Li, Washington State University, USA
Logan Fiorella, University of Georgia, USA
Paula Lemons, University of Georgia, USA

Stand-Alone Paper
AI-Driven Analysis of Free-Response Questions regarding Pedagogical Content Knowledge in Questioning
Jianlan Wang*, Texas Tech University, USA
Ibrahim Akdilek, Texas Tech University, USA
Margarita Flores-Sicich, Texas Tech University, USA

"It Doesn't Have to Be This Way": Confronting Epistemic Injustice in Science Education

Strand 13: History, Philosophy, Sociology, and Nature of Science
19-Apr-26, 16:30-18:00
Location: Willow A (L2)

Symposium
"It Doesn't Have to Be This Way": Confronting Epistemic Injustice in Science Education
Ayça Fackler, The University of Missouri, USA
David Stroupe*, The University of Utah, USA
Déana Scipio, Islandwood, USA
Enrique Suárez, UMass Amherst, USA
Osnat Atias, University of Haifa, Israel
Ayelet Shavit, Israel Institute of Technology, Israel
Ayelet Baram-Tsabari, Institute of Technology, Israel
Yael Kali, University of Haifa, Israel

Christina Baze, Northern Arizona University, USA
María González-Howard, The University of Texas at Austin, USA
Chris Jadallah, UCLA, USA
Heidi Ballard, UC Davis, USA
Wisam Sedawi, University of Michigan, USA
Christina Krist, Stanford University, USA
Eve Manz, Boston University,
Angela Calabrese Barton, University of Michigan, USA

Educating for Environmental Action: Innovative Pedagogies and Learner Transformation

Strand 14: Environmental Education and Sustainability
19-Apr-26, 16:30-18:00
Location: Issaquah AB (L3)

Stand-Alone Paper

Developing competencies to action: Curriculum design and implementation in environmental education at the master's level

Shih-Yeh Chen*, Department of Science Education and Application, National Taichung University of Education, Taiwan
Han-Yu Wang, Department of Chemistry, National Taiwan Normal University, Taiwan
Shiang-Yao Liu, Graduate Institute of Science Education, National Taiwan Normal University, Taiwan

Stand-Alone Paper

Facilitating Ocean Sustainability Education through Immersive VR and Pre-training Strategies

Hsing-Ying Tu*, National Taiwan Normal University, Taiwan
Silvia Lee, National Taiwan Normal University, Taiwan
Tai-Sheng Hung, National Taiwan Normal University, Taiwan

Mentor/Mentee Nexus

19-Apr-26, 18:00-19:00
Location: Willow A (L2)

Social Event

Organizers

Khadija Zogheib, Florida State University
Joi Merritt, James Madison University, USA

Contributors

Joi Merritt, James Madison University, USA
Khadija Zogheib, Florida State University

President's Welcome Reception and Dance

19-Apr-26, 19:00-22:00
Location: Grand Ballroom (L2)

Social Event

Conference Day 2
20 April 2026

Mind and Sole Fun Run
20-Apr-26, 6:30-8:00
Location: Offsite

Social Event

Organizers
Angela Calabrese Barton, University of Michigan, USA
Julie Luft, University of Georgia, USA

Early Career Forum
20-Apr-26, 7:00-8:00
Location: Aspen (L2)

Social Event

Organizers
Grant Gardener, Middle Tennessee State University, Murfreesboro, TN, USA
Theila Smith, Brooklyn College (CUNY) and NYC Public Schools, Brooklyn, NY, USA
Joi Merritt, James Madison University, Harrisonburg, VA, USA

Contributors
Theila Smith, Brooklyn College (CUNY) and NYC Public Schools, Brooklyn, NY, USA
Joi Merritt, James Madison University, Harrisonburg, VA, USA
Grant Gardener, Middle Tennessee State University, Murfreesboro, TN, USA
USA. [3] Middle Tennessee State University, Murfreesboro, TN, USA

Research Interest Group (RIG) Meetings
20-Apr-26, 7:00-8:00

Continental and Diasporic Africa in Science Education RIG (CADASE) Meeting
Location: Willow B (L2)

Latino/a RIG (LARIG) Meeting
Location: Cedar AB (L2)

Contemporary Methods for Science Education Research RIG Meeting
Location: Juniper (L2)

Engineering Education RIG (ENE-RIG) Meeting
Location: Ravenna AB (L3)

Indigenous Science Knowledge Research Interest Group (ISK-RIG) Meeting
Location: Ravenna C (L3)

Asian and Pacific Islander Science Education Research (APISER) Meeting
Location: Issaquah AB (L3)

Lesbian, Gay, Bisexual, Transgender, Queer, Plus Science Education Research Group (LGBTQ + RIG) Meeting
Location: Greenwood (L3)

Research in Artificial Intelligence-Involved Science Education (RAISE) Meeting
Location: Capitol Hill (L3)

Computational Science Practices Research Interest Group (CSP-RIG) Business Meeting
Location: Ballard (L3)

Exploring Professional Avenues in Science Education in Nontraditional Domains (EXPAND RIG) Business Meeting
Location: Columbia (L4)

Empowering Students Through Metacognitive Strategies
Strand 1: Science Learning: Development of student understanding
20-Apr-26, 8:15-9:45
Location: Ravenna AB (L3)

Stand-Alone Paper
Promoting Self-Regulated Learning in Chemistry Education Through Transparent Learning Objectives
Nils Bergander*, TU Dortmund University, Germany
Insa Melle, TU Dortmund University, Germany

Stand-Alone Paper
Should we individualize the way we deal with students' conceptions?
Tim Hartelt*, University of Kassel, Germany
Joelina Henniges, University of Kassel, Germany

Reimagining Power: Supporting Marginalized Participation and Resilience in Science Education
Strand 2: Science Learning: Contexts, Characteristics and Interactions
20-Apr-26, 8:15-9:45
Location: Jefferson A (L4)

Stand-Alone Paper
Distributions of Authority in Peer-to-Peer Interactions
Etta Pope*, Northwestern University, USA
Olga Vaskova, Northwestern University, USA
Jason Buell, Northwestern University, USA
Brian Resier, Northwestern University, USA

Stand-Alone Paper
Student Norms and Power Dynamics in Small-Group Modeling: Fostering or Constraining Marginalized Students' Participation
Soo-Yean Shim*, Seoul National University, Korea, Republic of
Sunghee Kim, Seoul National University, Korea, Republic of
Hun Jeong, Seoul National University, Korea, Republic of

Stand-Alone Paper
Using worlding to create spaces for joy for a more equitable and inclusive science education

Catherine Milne*, New York University, USA

Stand-Alone Paper
Teacher Boundaries and Student Resilience in Nature-Based Science Learning
Amy Crowell*, University of Iowa, USA
Kay Ramey*, University of Iowa, USA

Playful Pathways to Science Practices: Supporting Early Childhood Educators Through Professional Learning and Hybrid Spaces

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
20-Apr-26, 8:15-9:45
Location: Seneca (L4)

Related Paper Set
Professional Learning to Empower Early Childhood Educators in Science and Engineering Practices Through Play-Based Learning
Rachel Larimore*, Samara Early Learning, USA
Alison Miller*, Bowdoin College, USA

Related Paper Set
Harnessing Hybrid Spaces: Bringing Outdoors In and Indoors Out to Support Play-Based Science and Engineering
Samantha Stevenson*, Bowdoin College, USA

Related Paper Set
From Direction to Facilitation: How Professional Learning Transforms Early Childhood Educators' Conceptions of Science & Play
Lauren Poniatowski, Bowdoin College, USA
Hildah Makori*, Bowdoin College, USA

Designing Science Learning for Future-Ready Students

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
20-Apr-26, 8:15-9:45
Location: Ravenna C (L3)

Stand-Alone Paper
A Comparative Study of Knowledge Maps and Ontological Scaffolding in Complex Systems Thinking
Yi-Chen Lin*, Graduate Institute of Science Education, National Taiwan Normal University, Taiwan
Ting-Kuang Yeh, Department of Earth Sciences, National Taiwan Normal, Taiwan

Stand-Alone Paper
Science Classroom Goals and Defaults: Powerful Levers for Building Alternative Futures
Christopher Irwin*, Florida International University, USA
Nicholas Oehm, Florida International University, USA
Joshua Ellis, Louisiana State University, USA
Darryl Dickerson, University of New Mexico, USA

Stand-Alone Paper
Designing and Assessing a Science Unit for Improving Media Literacy
Mitchell Klocke*, Drake University, USA
Jerrid Kruse*, Drake University, USA
Lucas Menke, Drake University, USA
Sarah Borzo, Drake University, USA
Sarah Hunt, Drake University, USA
Maddie Kampf, Drake University, USA

Stand-Alone Paper
Examination of Changes in Students' Epistemological Beliefs, Critical Thinking Skills, and Science Process Skills
Feral Ogan-Bekiroglu*, Marmara University, Turkey
Erol Suzuk, Marmara University, Turkey
Cansu Sivgin, Marmara University, Turkey

Measuring and Tracking STEM Identity and Beliefs

Strand 5: College Science Teaching and Learning (Grades 13-20)
20-Apr-26, 8:15-9:45
Location: Aspen (L2)

Stand-Alone Paper
The Student Science Identity (SSI) Questionnaire: A Multi-Group Validation Study Among US College Students
Ava Breitbeck*, Syracuse University, USA
Gizem Ozyazici, Syracuse University, USA
John Tillotson, Syracuse University, USA
Qiu Wang, Syracuse University, USA

Stand-Alone Paper
Measurement Invariance of the Community of Inquiry Survey Framework Across DiverseIn-person College Chemistry Environments
Regis Komperda*, San Diego State University, USA
Jungwon Kim, San Diego State University, USA

Stand-Alone Paper
Disciplinary Beliefs, Perceptions, and Performance: A Within-Student Comparison of Introductory Chemistry and Physics
Lindsay Wheeler*, University of Virginia, USA
Lynn Mandeltort, University of Virginia, USA
Eric Bredder, University of Virginia, USA
Josipa Roksa, University of Virginia, USA

Visitor Experience, Emotion & Engagement

Strand 6: Science Learning in Informal Contexts
20-Apr-26, 8:15-9:45
Location: Virginia (L4)

Stand-Alone Paper
What Engages Us in the Museum? Revisiting Science Museum Education through the Lens of Engagement
Yael Eshed silver*, Technion Israel Institute of Technology, Israel
Tali Tal, Technion Israel Institute of Technology, Israel

Stand-Alone Paper
AI and Human Thematic Mapping of Volunteer Motivation and Sustained Engagement in Citizen Science Program.

Meena Kharatmal, Texas State University, USA
Kristy Daniel*, Texas State University, USA
Kristi Becker*, Texas State University, USA
Jill Zipperer*, Texas State University, USA

Stand-Alone Paper
Emotional Experiences of Visitors in a Science Centre
Neta Shaby*, University of Southampton, United Kingdom
Nancy Staus*, Oregon State University, USA

Stand-Alone Paper
Relational Methodologies in Natural History Museum Evaluation: Visitor Learning through Embodiment and Cultural Storytelling
Rachel Chaffee*, American Museum of Natural History, USA
Gladys Rowe*, Indigenous Insights Collective, USA
Albeliza Perez*, American Museum of Natural History, USA
Ida Ayu Sakira Hermawan, American Museum of Natural History, USA

Preparing Culturally Responsive, Socioscientific Decision-Makers in Science Teacher Education

Strand 7: Pre-service Science Teacher Education
20-Apr-26, 8:15-9:45
Location: Columbia (L4)

Stand-Alone Paper
Exploring Preservice Science Teachers' Decision-Making Processes and Influencing Factors regarding Socioscientific and Sociotechnical Scenarios
Mustafa Topcu*, Yildiz Technical University, Turkey
Nejla Atabey, Mus Alparslan University, Turkey

Stand-Alone Paper
Growth of Personal Pedagogical Content Knowledge in Elementary Preservice Teachers Engaged with Socioscientific Issues Instruction
Melanie Kinskey*, Texas A&M University, USA
Crista Banks*, University of Alabama, USA
Jeff Papa*, Kent State University, USA

Stand-Alone Paper
Reviewing Design Principles to Develop Culture-Based Socio-Scientific IssuesTraining Programme for Indonesian Pre-service Science Teachers
Aprillyana Utami*, University of Southampton, United Kingdom
Andri Christodoulou, University of Southampton, United Kingdom
Marcus Grace, University of Southampton, United Kingdom

Stand-Alone Paper
"I Am a Researcher": Authentic Research Shaping Pre-Service Teachers' Researcher Identity and NOS/NOSI Understanding
Heidi Turcotte*, Georgia State University, USA
Renee Schwartz, Georgia State University, USA

Resources and challenges for emerging STEM teachers

Strand 8: In-service Science Teacher Education
20-Apr-26, 8:15-9:45
Location: Cedar AB (L2)

Stand-Alone Paper
Challenges or Assets: Early Career STEM Teachers' Perception of Students as Resources
Adepeju Prince*, Kent State University, USA
Shannon Navy, Kent State University, USA

Stand-Alone Paper
Teacher Movers: Longitudinal Study of Early Career Science and Math Teachers' Migration Decisions
Lisa Borgerding*, Kent State University, USA
Shannon Navy, Kent State University, USA
Adepeju Prince*, Kent State University, USA
Paulo Loureiro*, University of Georgia, USA

Stand-Alone Paper
Social Resource Access and Use for Early Career STEM Teachers.
Emily Hamada*, Eastern Washington University, USA
Robert Idsardi, Eastern Washington University, USA

Stand-Alone Paper
Mapping resilience: How summer break activities influence resilience trajectories of newly hired STEM teachers
Jose Pavez*, Western Illinois University, USA
Ella Yonai, Auburn University, USA
Shanon Navy, Kent State University, USA

Reimagining Science Education with Global and Societal Challenges at the Center

Strand 10: Curriculum and Assessment
20-Apr-26, 8:15-9:45
Location: Greenwood (L3)

Stand-Alone Paper
Exploratory Content Analysis: Food-Energy-Water Nexus in Chinese High School Biology Textbooks for Systems Thinking
Rudan Wang*, Purdue University, USA
Hui Hui Wang, Purdue University, USA
Hezhe Li*, Purdue University, USA
Shuangting Li, Purdue University, USA

Stand-Alone Paper
Astro-sociology Curriculum to Promote Science Identity and Global Citizenship
Chen Chen*, The University of Hong Kong, Hong Kong
Zeyu Han, The University of Hong Kong, Hong Kong
Kejian Qiu, Warwick University, United Kingdom
Gerhard Sonnert, Harvard University, USA

Stand-Alone Paper
Dialogic Argumentation about Health Equity in a Text-Based NGSS Biology Seminar
Jeanne Chowning*, Fred Hutchinson Cancer Center, USA
Regina Wu, Fred Hutchinson Cancer Center, USA

Kristen Bergsman, Fred Hutchinson Cancer Center, USA
Kristin Bass, Rockman et al Cooperative Inc., USA
Maggie Deagon,Rockman et al Cooperative Inc., USA
Shelley Stromholt, Aspect Research + Evaluation, USA

Stand-Alone Paper

Reimagining school science: Harnessing scientific thinking and socio-scientific issues for student engagement and empowerment

Crystal Menzies*, University of California Berkeley, USA
Kelly Grindstaff*, University of California Berkeley, USA
Eric Greenwald*, University of California Berkeley, USA
Janet Bellantoni*, University of California Berkeley, USA
Ben Koo*, University of California Berkeley, USA

Justice-Centered and Arts-based Science Teaching and Learning Across Spaces & Places

Strand 11: Cultural, Social, and Gender Issues
20-Apr-26, 8:15-9:45
Location: Willow A (L2)

Symposium

Justice-Centered and Arts-based Science Teaching and Learning Across Spaces & Places

Mindy Chappell*, University of Illinois Urbana Champaign, USA
Jonathan McCausland, Iona University, USA
Maria Varelas, University of Illinois Chicago, USA
Argyris Nipyrakis, University of Crete, Greece
Betzabe Torres-Olave, University of Groningen, Netherlands
Stephanie Batres Spezza, University of Illinois Chicago, USA

Beyond Survival: Joyful Transgressions and Radical Imagination of Black Girls and Black Women Science Teachers

Strand 11: Cultural, Social, and Gender Issues
20-Apr-26, 8:15-9:45
Location: Willow B (L2)

Related Paper Set

Centering Spirit and Science: Black Women Teachers Resisting Anti-Blackness in the Curriculum

Karin Mason*, Georgia State University, USA
Renee Schwartz, Georgia State University, USA
Natalie King, Georgia State University, USA
Patrick Enderle, Georgia State University, USA

Related Paper Set

I Should Know, I Once Was Her: Black Women Science Teachers Engaging Black Girls

Teresa Massey*, Georgia State University, USA
Renée Schwartz*, Georgia State University, USA
Natalie King*, Georgia State University, USA
Patrick Enderle*, Georgia State University, USA

Related Paper Set

Sustainable Self-Care as Radical Resistance for Early Career Black Women Science Teachers

Jelissa Wright, Georgia State University, USA
Meagan Naraine, Georgia State University, USA
Natalie King, Georgia State University, USA
Andrea Dziengue, Georgia State University, USA

Related Paper Set

Dreaming Beyond the Lab Coat: Black Girls' Experiences in Advanced Science Courses

Jessica Snead*, Georgia State University, USA
Natalie King*, Georgia State University, USA
Renée Schwartz*, Georgia State University, USA
Patrick Enderle*, Georgia State University, USA

Learning Progression and GenAI for Supporting Teacher Instructional Adaptations and Student Three-Dimensional Learning

Strand 12: Technology for Teaching, Learning, and Research
20-Apr-26, 8:15-9:45
Location: Ballard (L3)

Related Paper Set

Toward Development: From Customizing Classroom Assessments with ADAPT-AI to Further Supporting 3D Learning Progression

Lalith Midde, Washington State University, USA
Hyeonji Lee, Washington State University, USA
Zeyuan Wang, Washington State University, USA
Tingting Li*, Washington State University, USA

Related Paper Set

Teachers Use of 3D Learning Progression to Adapt Local Instructional Materials: A Multiple Case Study

Zeyuan Wang*, Washington State University, USA
Peng He, Washington State University, USA
Timothy Fiser, Washington State University, USA
Yu Xue, Washington State University, USA
Namsoo Shin, Michigan State University, USA
Joseph Krajcik, Michigan State University, USA

Related Paper Set

Supporting Student 3D Learning Development with Learning Progression-based Classroom Assessments

Timothy Fiser*, Washington State University, USA
Peng He, Washington State University, USA
Zeyuan Wang, Washington State University, USA
Yu Wue, Michigan State University, USA
Joseph Krajcik,Michigan State University, USA

Related Paper Set

Leveraging GenAI to Generate Actionable Feedback on Student 3D

Learning: A Human-Centered Design Approach
Peng He*, Washington State University, USA
Kaiqi Yang, Michigan State University, USA
Honglu Liu, Washington State University, USA
Hang Li, Michigan State University, USA
Yucheng Chu,Michigan State University, USA
Jiliang Tang, Michigan State University, USA
Tingting Li, Washington State University, USA

New approaches and methods to NOS and scientific literacy

Strand 13: History, Philosophy, Sociology, and Nature of Science
20-Apr-26, 8:15-9:45
Location: Jefferson B (L4)

Stand-Alone Paper
Comparing Approaches of Anal"ing Nature of Science Understandings Collected Using Open-Ended Measures
Jeanne Brunner*, University of Massachusetts Amherst, USA
Ryan Summers*, University of North Dakota, USA
Fouad Abd-El-Khalick, University of Massachusetts Amherst, USA

Stand-Alone Paper
A Case Study of Mentorship in a High School STEMM Research Internship
Bridget Mulvey*, Kent State University, USA

Graduate Student Research Symposium

20-Apr-26, 8:15-9:45
Location: Redwood AB (L2)

Administrative Session

Organizers
Georgie Schafer, Drexel University, Philadelphia, Pennsylvania, USA
Stephanie Tracey, Clemson University, Clemson, South Carolina, USA
Arya Karumanthra, Indiana University Bloomington, Indiana, USA

Presenters
Aakriti Bisht, University of California, Irvine.
Aidyn Intykbekov, University of Massachusetts Dartmouth.
Chelsea Mateu, Florida International University
Cheyenne Woods, California State University, Fresno
Dana Haine, NC State University
Dimitri Smirnoff, University of Minnesota Twin Cities
Elizabeth Andrew Thiel, Purdue University
Emmanuel Dwamena, University of Connecticut
Glory Saidu, University of Minnesota
Hun Jeong, Seoul National University
João Pedro Santos Coutinho, University of São Paulo
Khadija Zogheib, Florida State University
Lisa Archuleta, Stanford University
London Williams, UCLA
Lorena Caballero, Northern Arizona University
Maria A. Moreno Vera, Boston College
Myeongji Kim, The Ohio State University
Natália Machado Carvalho, University of São Paulo

Paige Prescott. New Mexico State University
Peter Oyewole, Kent State University
Sarah Hajama, Macquarie University
Sarah Lu, University of Toronto
Savvy Demers, University of Massachusetts Boston
Seth Cudjoe. Old Dominion University
Sevde Nur Yeerisenoglu, Bogazici University
Shuochian Joe Shiu, National Sun Yat-sen University
Téa Pusey, UC Davis
Yaa Dankwa, Ohio State University
Yaxin Luo, Beijing Normal University
Yong Xie, Beijing Normal University

Writing, Publishing, and Reviewing for Science Education Journals

20-Apr-26, 8:15-9:45
Location: Issaquah AB (L3)

Administrative Session

Organizers
Edna Tan, UNC Greensboro, Greensboro, NC, USA
Dana Vedder-Weiss, Ben Gurion University of the Negev, Israel
Matthew Kloser, University of Notre Dame, Notre Dame, IN, USA

Contributors
Dana Vedder-Weiss, Ben Gurion University of the Negev, Israel
Matthew Kloser, University of Notre Dame, Notre Dame, IN, USA
Edna Tan, UNC Greensboro, Greensboro, NC, USA
David Stroupe, University of Utah, USA
Ron Gray, Northern Arizona University, USA
Scott McDonald, Pennsylvania State University, USA
M. Gail Jones, North Carolina State University, USA

Technology-Supported Learning for Engagement and Interdisciplinary Sensemaking

Strand 2: Science Learning: Contexts, Characteristics and Interactions
20-Apr-26, 10:00-11:30
Location: Jefferson A (L4)

Stand-Alone Paper
Interdisciplinary sensemaking with ChatGPT - Evidence for extended cognition
Ada Abes*, Technion, Israel
Asnat Zohar, Tehcnion, Israel
Yam Arieli, Hebrew University, Israel
Shulamit Kapon, Technion, Israel

Stand-Alone Paper
When Context Is Constructed: Positioning Virtual Learning Environments on the Contextualization Spectrum
Michael Giamellaro*, Oregon State University, USA

Stand-Alone Paper
The Impact of Gamification on Student Motivation in Science Education: A Meta-Analysis
Kübra BAĞRIYANIK*, Artvin Coruh University, Turkey
Ulaş ÜSTÜN, Middle East Techinical Universty, Turkey
Meral HAKVERDİ CAN, Hacettepe Universitty, Turkey

Making Thinking Visible: Reasoning, Representation, and Classroom Discourse

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
20-Apr-26, 10:00-11:30
Location: Ravenna C (L3)

Stand-Alone Paper
Students' Epistemic Modelling through Multimodal Representations
Kason Ka Ching Cheung*, The Education University of Hong Kong, China
Lan Yang, The Education University of Hong Kong, China

Stand-Alone Paper
Making Students' Reasoning Visible through a Novel Assessment Format: Claim-REAson TEst (CREATE)
Thineshan Puspanathan*, National Institute of Education, Nanyang Technological University, Singapore
Yann Shiou Ong*, National Institute of Education, Nanyang Technological University, Singapore
Huifen Xu, National Institute of Education, Nanyang Technological University, Singapore
Yew Jin Lee, National Institute of Education, Nanyang Technological University, Singapore

Stand-Alone Paper
Examining Science Teachers' Questioning Patterns for Learning Support : A Computational Grounded Theory Approach
Tongtong Guan*, Research Institute of Science Education, Faculty of Education, China
Jie Yang*, Research Institute of Science Education, Faculty of Education, China
Yonghe Zheng, Research Institute of Science Education, Faculty of Education, China

Stand-Alone Paper
Visible and Invisible Self-Regulation: Observational Scenarios from Science Classrooms
Katrin Saks, University of Tartu, Estonia
Kõue Heintalu*, University of Tartu, Estonia

Science Identity Development Across Undergraduate Pathways

Strand 5: College Science Teaching and Learning (Grades 13-20)
20-Apr-26, 10:00-11:30
Location: Aspen (L2)

Stand-Alone Paper
External Validation of Undergraduate Research Leads to Gains in Science Identity, Value, and Self-Efficacy
Mary Whitfield*, Edmonds College, USA
J. Shlichta*, Edmonds College, USA
Julia Smith*, University of Washington, USA

Stand-Alone Paper
High Stress, High Support: Scientific Conferences, Interactions and Identity Development for Undergraduate Women in Science
Stacy Olitsky*, Saint Joseph's University, USA

Stand-Alone Paper
Development of Science Identity through Student-Work
Gabriel LeBlanc*, The University of Tulsa, USA
Maivi Nguyen, The University of Tulsa, USA
Kathryn Hosbein, Middle Tennessee State University, USA

Stand-Alone Paper
Justice-Centered STEM Pedagogy and STEM Identity: Exploring Links Across Intersectional Identities in Higher Education
Juan Garibay, University of Virginia, USA
Lindsay Wheeler, University of Virginia, USA

Beyond the Tenure Track: A Workshop Exploring Career Opportunities in Non-Traditional and Informal Settings

Strand 6: Science Learning in Informal Contexts
20-Apr-26, 10:00-11:30
Location: Willow A (L2)

Symposium
Beyond the Tenure Track: A Workshop Exploring Career Opportunities in Non-Traditional and Informal Settings
Christa Haverly*, Chicago Public Schools, USA
Karen Hammerness*, American Museum of Natural History, USA
Ti'Era Worsley*, NOVA SySTEMic, USA
Jennifer Richards*, Northwestern University, USA
Déana Scipio*, IslandWood, USA

Preparing Future STEM Teachers for Deeper, Justice-Oriented Learning

Strand 7: Pre-service Science Teacher Education
20-Apr-26, 10:00-11:30
Location: Columbia (L4)

Stand-Alone Paper
Influence of Teacher Education on Science Teaching: The Role of High-Leverage Practices, Equity, and Sensemaking
Amber Bismack*, Oakland University, USA
Patricia Bills, Oakland University, USA
Boyun Kim, Oakland University, USA

Strand 7: Pre-service Science Teacher Education
20-Apr-26, 10:00-11:30
Location: Columbia (L4)

Stand-Alone Paper
Prospective Teachers Learning to Teach About Climate Justice: A Case Study
Julie Bianchini*, University of California, Santa Barbara, USA
Devon Azzam, University of California, Santa Barbara, USA
Kaylee Laub*, University of California, Santa Barbara, USA
Danielle Harlow, University of California, Santa Barbara, USA
Karin Lohwasser, University of California, Santa Barbara, USA

Strand 7: Pre-service Science Teacher Education
20-Apr-26, 10:00-11:30
Location: Columbia (L4)

Stand-Alone Paper
Preservice Science and Math Teachers Conceptions of and Teaching Practices for Deeper Learning
Matthew Bennett*, UC Santa Barbara, USA
Jing Su, UC Santa Barbara, USA
Yvette Doss, UC Santa Barbara, USA
Ying Gao, UC Santa Barbara, USA
Oishee Mujtaba, UC Santa Barbara, USA
Daniel Santana, UC Santa Barbara, USA
Mian Wang, UC Santa Barbara, USA
Danielle Harlow, UC Santa Barbara, USA

Science teachers' approaches to climate, energy, and justice

Strand 8: In-service Science Teacher Education
20-Apr-26, 10:00-11:30
Location: Cedar AB (L2)

Stand-Alone Paper
Science Teachers' Uptake of Multispecies Justice in Designing Phenology Lessons on Climate Change Impacts
Asli Sezen-Barrie*, University of California, USA
Mary Stapleton, Towson University, USA
Emily Cohen, University of Maryland Center for Environmental Science, USA

Stand-Alone Paper
Discursive Roles in Climate Science+Data Professional Learning: An Analysis of Learner Hat
Kimberly Jones*, University of Tennessee - Knoxville, USA
Kerri Wingert, Good Question Research, USA
Kristin Hunter-Thomson, Dataspire, USA
Anne Gold, CIRES CEEE - University of Colorado Boulder, USA
Karla Citlali Lemus Gordillo, CIRES CEEE - University of Colorado Boulder, USA
Jonathan Griffith, CIRES CEEE - University of Colorado Boulder, USA
Annette Brickley, Dataspire, USA
Joshua Rosenberg, University of Tennessee - Knoxville, USA
Jessica Bean, University of California Berkeley, USA

Stand-Alone Paper
Water as a Conduit for Exploring Environmental Justice in K-12 Classrooms
Kathryn Ribay*, San Jose State University, USA

Restructuring the Science Curriculum around Grand Challenges

Strand 10: Curriculum and Assessment
20-Apr-26, 10:00-11:30
Location: Greenwood (L3)

Related Paper Set
Teachers' Implementation of the Grand Challenge Curriculum
Rebecca Lesnefsky*, SUNY Cortland, USA
Natasha Segal*, Weizmann Institute, Israel

Related Paper Set
Centering Student Voices on Grand Challenges: A Cross-National Study
Heewoo Lee*, University of North Carolina at Chapel Hill, USA
Shira Passentin*, Weizmann Institute, Israel

Related Paper Set
Theoretical Foundations and Design Principles for a Grand Challenge Curriculum
David Fortus*, Weizmann Institute, Israel
Troy Sadler*, University of North Carolina at Chapel Hill, USA
Keren Dalyot, Weizmann Institute, Israel

Related Paper Set
Assessing Modeling Competencies in the Grand Challenges Curriculum
Nannan Fan*, University of North Carolina at Chapel Hill, USA
David Fortus, Weizmann Institute, Israel
Adi Moskovits, Weizmann Institute, Israel

Black youth, faculty, and curricular considerations

Strand 11: Cultural, Social, and Gender Issues
20-Apr-26, 10:00-11:30
Location: Juniper (L2)

Stand-Alone Paper
Centering Black Girls in STEM: A Culturally Relevant and BlackCrit Approach
Raketa Thomas*, University of North Carolina at Charlotte, USA
Uchenna Emenaha Miles*, University of Texas San Antonio, USA

Stand-Alone Paper
Understanding impostor phenomenon among Black faculty members in STEM: A US-based exploratory study
Devasmita Chakraverty*, Indian Institute of Management Ahmedabad, India

Stand-Alone Paper
Curious about Black Hair: A Study of the STEM Curriculum Interest of African Americans
Jomo Mutegi*, Old Dominion University, USA

Stand-Alone Paper
Synthesizing the Synthesis: A Review of Researcher Positionality in STEM Education Research about Black girls
Olayinka Mohorn-Mintah*, University of Memphis, USA
Monica Miles*, University at Buffalo, USA
Demetrice Smith-Mutegi*, Old Dominion University, USA
Alexis Riley*, New York University, USA
Catherine Quinlan,North Carolina Central University, USA
Joi Merritt, James Madison University, USA
Crystal Morton, Indiana University Indianapolis, USA

Cultural Considerations to Radically (Re)-Imagine STEM Education and Research

Strand 11: Cultural, Social, and Gender Issues
20-Apr-26, 10:00-11:30
Location: Willow B (L2)

Related Paper Set
Maintaining communalistic values to support the STEM matriculation of Black Diasporic men
Takeshia Pierre*, Tufts University, USA

Related Paper Set
Cross-Cultural Interactions in Community-Based Engineering Projects: Financial and Reputational Borders in Engineering Study Abroad Programs
Trevion Henderson*, Tufts University, USA
Collette Higgins, Tufts University, USA

Related Paper Set
Rooted in Resistance: Cultivating Critical Consciousness Through Pláticas in Engineering
Joel Mejia*, University of Cincinnati, USA

Related Paper Set
Climate Tech Journalism: Engineering Climate Futures through the Voices of Multilingual and Multidialectal Youth
Clara Mabour, Tufts University, USA
Greses Perez, Tufts University, USA
Kristen Wendell, Tufts University, USA
Fatima Rahman, Tufts University, USA
Chelsea Andrews, Tufts University, USA

Hybrid/AI-Enhanced Investigations & Model-Based Learning

Strand 12: Technology for Teaching, Learning, and Research
20-Apr-26, 10:00-11:30
Location: Ballard (L3)

Stand-Alone Paper
Exploring the implementation of GenAI in STEM education through the co-creation of learning activities
Federico Valeri*, Halmstad University, Sweden
Pernilla Nilsson, Halmstad University, Sweden
Anne-Marie Cederqvist, Halmstad University, Sweden

Stand-Alone Paper
Understanding Generative AI through the SOLO Taxonomy: An Example from Nanotechnology Education
Yael Feldman-Maggor*, Ben gurion university of the Negev, Israel

Stand-Alone Paper
Challenging the advantage of hybrid investigations in the context of electric circuits
Elon Langbeheim*, Ben-Gurion University of the Negev, Israel
David Krein, Ben-Gurion University of the Negev, Israel

Stand-Alone Paper
Integrating biomimicry into middle school STEM: Using structure-function analysis and modeling to inspire engineering design
Debra Bernstein*, TERC, USA
Kathryn Hobbs, TERC, USA
Michael Cassidy, TERC, USA
Kristen Wendell, Tufts University, USA
Gillian Puttick, TERC, USA
Ethan Danahy, Tufts University, USA
Geling Xu, Tufts University, USA
Tyrine Pangan, Tufts University, USA
William Church, CRCS, USA

Teacher learning in nature of science

Strand 13: History, Philosophy, Sociology, and Nature of Science
20-Apr-26, 10:00-11:30
Location: Jefferson B (L4)

Stand-Alone Paper
Nonformal Learning, Worlding, and the Future of Science Education for Preservice Childhood Educators
Leah Master*, New York University, USA

Stand-Alone Paper
Science Teachers' Incorporation of NOS-based Activities into Their Lesson Planning
Büşra Aksöz*, Bogazici University, Turkey
Ebru Kaya, Bogazici University, Turkey

Stand-Alone Paper
Pre-service science teachers' perceptions of epistemic knowledge when using experiments in chemistry lessons
Janne-Marie Bothor*, University of Kassel, Germany
David-Samuel Di Fuccia, University of Kassel, Germany

Stand-Alone Paper
Exploring the Nature of Science through AI-Based Experiments: A Look into Pre-Service Teachers' Learning
Jua Lee, Korea National University of Education, Korea, Republic of
Suna Ryu*, Korea National University of Education, Korea, Republic of

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Environmental Identities, Cultural Contexts, and Education for Sustainability

Strand 14: Environmental Education and Sustainability
20-Apr-26, 10:00-11:30
Location: Issaquah AB (L3)

Stand-Alone Paper
'Civilized Behavior' Signs versus Nature-Friendly Education: A Cross-Cultural Analysis from a Science Education Perspective
Haoxuan Du*, UCL Institute of Education, United Kingdom
Michael Reiss, UCL Institute of Education, United Kingdom
Joanne Nicholl, UCL Institute of Education, United Kingdom
Kate Greer, UCL Institute of Education, United Kingdom

Stand-Alone Paper
Political Ecology of Environmental Education: Moral Narratives of Living in a Protected Indonesian Forest
Patricia Patrick*, Columbus State University, USA

Stand-Alone Paper
Ecological Presence in Education: Using Technology to Support Student Identity and Connection with Nature
Tyler Hansen*, Washington State University, USA
Colby Tofel-Grehl, Teachers College, USA

Equity, Identity, and Policy in Science Education

Strand 15: Policy, Reform, and Program Evaluation
20-Apr-26, 10:00-11:30
Location: Capitol Hill (L3)

Stand-Alone Paper
Surface Learning by Design: An Analysis of Texas Science Standards
Allison Esparza*, South Dakota State University, USA
Joanne Olson, Texas A&M University, USA

Stand-Alone Paper
Does Research Count in Shaping Science Education Policy? Evidence from England
Wonyong Park*, University of Southampton, United Kingdom
Carys Hughes, University of Southampton, United Kingdom
Chris Downey, University of Southampton, United Kingdom

Stand-Alone Paper
Bridging Boundaries: How State Computer Science Leader Networks Advance Equity
Stefanie Marshall*, Michigan State University, USA
Ain Grooms*, University of Wisconsin-Madison, USA
Joshua Childs*, University of Texas-Austin, USA
Grace Tukurah*, Michigan State University, USA
SJ Hemmerich, University of Wisconsin-Madison, USA

Stand-Alone Paper
Investigating Science Identity Development in a STEM Summer Program
Manal Almalki*, Walter Reed Army Institute of Research, USA
Debra Yourick, Walter Reed Army Institute of Research, USA

Stand-Alone Paper
Toward an Organizational, Professional, and Community Theory of Science Teacher Retention
Douglas Larkin*, Montclair State University, USA
Suzanne Patzelt*, Touro University, USA
Liz Carletta, Montclair State University, USA
Khadija Ahmed, Montclair State University, USA
Mayra Muñoz, Montclair State University, USA

A Case for Joyful Transgressions and Radical Imagination in Science Education Within the African Diaspora

20-Apr-26, 10:00-11:30
Location: Redwood AB (L2)

Administrative Session

Organizers
Rona Robinson-Hill, Ball State University, Muncie, IN, USA
Jonathan Hall, California State University, San Bernardino, CA, USA

Contributors
Malcolm Butler, University of North Carolina at Charlotte, USA

NARST Connects
20-Apr-26, 10:00-11:30
Location: KIrkland (L3)

Discussion Session

Advancing Literacy and Innovation in Science Ed
20-Apr-26, 10:00-11:30
Location: Virginia (L4)

Administrative Session

Organizers
John Pecore, University of West Florida, USA

Contributors
Laura Jacobs, Towson University, USA
Katherine Sharp, Missouri University of Science and Technology, USA
Carly Carron, Missouri University of Science and Technology, USA
Keira Walker, Missouri University of Science and Technology, USA
Carson Dudley, Missouri University of Science and Technology, USA

Awards Ceremony
20-Apr-26, 12:30-13:30
Location: Grand Ballroom (L2)

Joy as Method, Community as Praxis: Reimagining Science Education as Collective Flourishing
20-Apr-26, 13:30-14:30
Location: Grand Ballroom (L2)

Speakers:
Prof. Edwin Lindo
Dr. Kaleb Germinaro
Dr. Estell Williams

Co-Moderated by:
Dr. Terrell Morton
Dr. Daniel Morales-Doyle

Advancing Systems Thinking and Climate Literacy in K-12
Strand 1: Science Learning: Development of student understanding
20-Apr-26, 14:45-16:15
Location: Ravenna AB (L3)

Stand-Alone Paper
High School Students' Knowledge-in-Use of Energy Through the Systems-Transfer Approach
Weiwei He*, CREATE for STEM Institute, Michigan State University, USA
Steve Bennett, CREATE for STEM Institute, Michigan State University, USA
Jeffrey Nordine, Department of Teaching and Learning, University of Iowa, USA
David Fortus, Weizmann Institute of Science, Israel
Joseph Krajcik, CREATE for STEM Institute, Michigan State University, USA

Stand-Alone Paper
Three-Dimensional Learning about Water as a Limited and Threatened Resource

Kristin Gunckel*, University of Arizona, USA
Linda Morell, University of California Berkeley, USA
Mingfeng Xue, University of North Carolina Greensboro, USA
Paulchell-Lehan Alexander, University of Arizona, USA
Malissa Hubbard, University of Arizona, USA
Anna MacPherson, American Museum of Natural History, USA
Dozier Sara, California State University Long Beach, USA
Mark Wilson, University of California Berkeley, USA

JuST in the World- Expanding Justice-Centered Ambitious Science Teaching and Learning across contexts

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
20-Apr-26, 14:45-16:15
Location: Redwood AB (L2)

Symposium

JuST in the World- Expanding Justice-Centered Ambitious Science Teaching and Learning across contexts

Déana Scipio*, IslandWood, USA
April Luehmann*, University of Rochester, USA
Priya Pugh*, IslandWood, USA
Chris Jadallah*, University of California Los Angeles, USA
Hannah Cooke*, University of Connecticut, USA
Scott McDonald*, Pennsylvania State University, USA
Elizabeth Starks, University of Washington, Bothell, USA
Veronica McGowan*, University of Washington, Bothell, USA
Symone Gyles, University of California, Irvine, USA
Molly Wilson, University of Rochester, USA

Cultivating Joyful Transgression in Elementary Science Methods: A Collaborative Self-Study of AI Integration & Radical Imagination

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
20-Apr-26, 14:45-16:15
Location: Willow A (L2)

Symposium

Cultivating Joyful Transgression in Elementary Science Methods: A Collaborative Self-Study of AI Integration & Radical Imagination

Thomas McKenna*, Boston University, USA
Deepika Menon*, University of Nebraska-Lincoln, USA
Badri Adhikari*, University of Missouri-St. Louis, USA
Carolyn Colley*, Sartori Elementary, USA
Meenakshi Sharma*, Mercer, USA
Christina Schwarz*, Michigan State University, USA
Emily Adah, University of Georgia, USA
Tingting Li*, Washington State University, USA
Melissa Luna, West Virginia University, USA
Min Sun, University of Washington, USA

Complexity in Science Education: Perspectives from Systems Thinking and Modeling

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
20-Apr-26, 14:45-16:15
Location: Ravenna C (L3)

Related Paper Set
Connecting Classrooms to Climate Change:Teaching Building Energy Systems Through Systems Thinking and Modeling
Laura Zangori*, University of Missouri, USA
Jessica Justice, University of Missouri, USA
Delaney O'Brien, Colorado State University, USA
Jong Kim, University of Missouri, USA
Aysegul Akturk,Gebze Technical University, Turkey
Laura Cole, Colorado State University, USA

Related Paper Set
Systems Thinking and Modeling in Climate Education: A System Dynamics Approach for Middle School Students
Melda Demirtas, Inonu University, Turkey
Gaye Ceyhan*, Bogazici University, Turkey
Ibrahim Unal, Inonu University, Turkey

Related Paper Set
Scaffolding for Systems Thinking: Challenges and Mitigations
Ram Tamir, Ben Gurion University of the Negev, Israel
Tom Bielik*, Radboud University, Netherlands
Orit Ben-Zvi Assaraf, Ben Gurion University of the Negev, Israel

Related Paper Set
Relationships between pre-service science teachers' modeling metaknowledge and modeling practices
Kim Lobner*, IPN, Germany
Tom Bielik, Radboud University, Netherlands
Moritz Krell, IPN, Germany

Context Matters: Using a Resources Perspective to Model Learner Reasoning

Strand 5: College Science Teaching and Learning (Grades 13-20)
20-Apr-26, 14:45-16:15
Location: Aspen (L2)

Related Paper Set
Shifting into Sensemaking: Fluidity in biology students' epistemic cognition
Julia Svoboda*, Tufts University, USA
Sugat Dabholkar, Tufts University, USA
Scott Benjamin, Bunker Hill Community College, USA
Yiru Wang, Mount Holyoke College, USA

Related Paper Set
How Metacognition and Principle-based Reasoning Co-develop: A Case Study of Learning Flux in Biology
Alexander Waugh, Michigan State University, USA
Aeryn VanDerSlik, Michigan State University, USA
Safana Ismeal, University of Wisconsin Madison, USA
Hana Zhou, Michigan State University, USA
Sheela Vemu, Waubonsee Community College, USA

Mary Pat Wenderoth, University of Washington, USA
Janet Branchaw, University of Wisconsin Madison, USA
Jennifer Doherty, Michigan State University, USA

Related Paper Set

Students' Knowledge Resources in a Problem-Solving-First Lesson

Paula Lemons*, University of Georgia, USA
Cheng-Wen He, University of Georgia, USA

Related Paper Set

More than meets the eye: The impact of context in scientific observation

Adrian Adams*, University of Utah, USA
Lauren Barth-Cohen, University of Utah, USA

Roundtables Session 1
20-Apr-26, 14:45-16:15
Location: Grand Ballroom (L2)

Strand 1: Science Learning: Development of student understanding
WIP Roundtable

Hearing the Stars, Seeing Our Words: A Science-SEL Journey Through Sonification

Shanel Lightfoot*, The University of Alabama College of Engineering, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable

Laughing to learn: Humor as a gateway to epistemic safety in high school chemistry

Elizabeth Harris*, Stanford University, USA
Tracy Poulsen*, Brigham Young University, USA
Erin Whiting*, Brigham Young University, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable

Connecting Creativity with PCK: Creating a Framework for Science Teacher Education

William Veal*, University of Charleston, USA
Vanessa Kind, University of Leeds, United Kingdom

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable

Research on the influencing factors of scientific critical thinking of junior high school students

Chaochao Jia*, China Research Institute for Science Popularization, China
Xiuju Li, China Research Institute for Science Popularization, China
Ren Lei, China Research Institute for Science Popularization, China
Yuele Huang, China Research Institute for Science Popularization, China
Mengqian Wang,China Research Institute for Science Popularization, China
Tao Yang, Beijing Normal University, China

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable

Leveraging Science Communication in Fostering Science Literacy and Science Identity Among Biology Graduate Students.

Meena Kharatmal, Texas State University, USA
Tyler Harper-Gampp, Texas State University, USA
Tiara Thompson, Texas State University, USA
Carolyn Jess, Texas State University, USA
Jill Zipperer, Texas State University, USA
Kristy Daniel*, Texas State University, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable
Exploring Teacher Tolerance for Ambiguity: Implications for Authentic and Equitable Science Instruction
Christopher Wilson*, BSCS Science Learning, USA
Cynthia Passmore*, University of California, Davis, USA
Molly Stuhlsatz, BSCS Science Learning, USA
Cari Herrmann Abell, BSCS Science Learning, USA
Jeffrey Snowden,BSCS Science Learning, USA
Dennis Lee, BSCS Science Learning, USA
Chris Griesemer, University of California, Davis, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable
Exploring Multimodal Meaning-Making in Multilingual Science Classrooms: The Case of Lebanon
Salwa Ali*, Saint Joseph University, Lebanon

Strand 2: Science Learning: Contexts, Characteristics and Interactions
WIP Roundtable
What Added Value Do Neurophysiological Measures of Engagement Bring to Science Learning Research?
Yushuang Liu*, Boston College, USA
Xiaorui Xue*, Boston College, USA
Ido Davidesco*, Boston College, USA
Bruce McLaren, Carnegie Mellon University, USA
J Elizabeth Richey, University of Pittsburgh, USA
Hayden Stec, Carnegie Mellon University, USA
Leah Teffera, Carnegie Mellon University, USA
Jiayi Zhang, University of Pennsylvania, USA
Elana Zion-Golumbic, Bar-Ilan University, Israel

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Roundtable
A Teacher's Philosophical Messages in Science Classrooms to Support Student Engagement in Knowledge Generation
Jale Ercan Dursun*, Baylor University, USA
JEE SUH, Baylor University, USA

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Roundtable
Co-Creating Change: Building Authentic Collaborations Between Primary School Parents, Teachers, and University Researchers

Caitlyn Ishaq*, University of California, Davis, USA
Becca VanArnam*, University of California, Davis, USA
María Godoy, Independent Researcher, USA
Margarita Jiménez-Silva, University of California, Davis, USA

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Roundtable
Elementary Preservice Teachers ' Investigation Planning using a Toolkit to Support Responsive 3D Sensemaking
Anna Arias*, Kennesaw State University, USA
Soon Lee*, Kennesaw State University, USA
Preethi Titu, Kennesaw State University, USA
Rasheda Likely, Kennesaw State University, USA
Jessica Stephenson Reaves, Kennesaw State University, USA

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
WIP Roundtable
Empowering Students Through Integrating Culturally Responsive Pedagogy with Evidence-Based Approaches to Teaching Science Writing
Yewon Lee*, University of Maryland at College Park, USA
Jooyoung Lee, University of Maine, USA

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
Roundtable
Problems and Possibilities: Understanding an Early Career Science Teacher's Identity Development using the DSMRI
J. Elisabeth Kasner*, Florida State University, USA

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
Stand-Alone Paper
A Framework for Understanding Students' Experiences of Uncertainty during Scientific Sensemaking: Agency x Uncertainty Matrix
Bukola Akinbadewa*, Arizona State University, USA
Michelle Jordan, Arizona State University, USA
Ying-Chih Chen, Arizona State University, USA
Andrea Weinberg, Arizona State University, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
WIP Roundtable
Linking Academia and Industry: Exploring SSRL, 21st Century Skills, and Knowledge Construction in Collaborative Learning
Shirly Avargil*, Technion Israel Institute of Technology, Israel
Avida Shoham, Technion Israel Institute of Technology, Israel

Strand 5: College Science Teaching and Learning (Grades 13-20)
Roundtable
Exam Previews: Evidence for Complexity and Related Learning within Undergraduate Assessment
Kerri Wingert*, Good Question Research, USA
Gregory Crowther, Everett Community College, USA
Ben Wiggins, Shoreline Community College, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
WIP Roundtable
Civic Engagement among STEM Majors: Exploring Self-Determination and Identity through an Explanatory Sequential Mixed-Methods Study
Blessing Soyebi, Illinois State University, USA
Rebekka Darner, Illinois State University, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
WIP Roundtable
Use of Video Role Models in Undergraduate Biology: A Focus on Career Pathways and Identities
Sierra Morandi*, Florida State University Schools, USA
Roxanne Hughes*, Florida State University, USA
Monica Paniagua Montoya, Florida State University, USA
David McNutt, Florida State University, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
WIP Roundtable
Computational modeling for all? A study of AI-generated computational models in physics education
David Perl-Nussbaum*, University of Colorado Boulder, USA

Strand 6: Science Learning in Informal Contexts
WIP Roundtable
Mapping Joy and Justice: Black Girl Cartography and Radical Imagination in Informal Science Spaces
Tajma Cameron*, Morgan State University, USA

Strand 6: Science Learning in Informal Contexts
Roundtable
From Compliance to Commitment: Science Identity and Persistence in Afterschool Robotics
Shikhar Kashyap*, Virginia Tech, USA
Brenda Brand, Virginia Tech, USA
Lezly Taylor, Virginia Tech, USA

Strand 6: Science Learning in Informal Contexts
Roundtable
Beyond the Classroom: Exploring Teachers' Roles in Extracurricular Stem Programs
HELEN SEMILARSKI*, University of Tartu, Estonia
HELIN SEMILARSKI, University of Tartu, Estonia

Strand 6: Science Learning in Informal Contexts
WIP Roundtable
Reimagining Contact with Science: A Freirian Perspective on Science Museums
Paula Silva Ribeiro Ferreira*, University of Nevada, Reno, USA

Strand 6: Science Learning in Informal Contexts
WIP Roundtable
Reimagining Evaluation Through Relationality: Joyful Transgressions in Family STEM Learning
Diana Ballesteros, New York Hall of Science, USA
Franklin Aucapina*, New York Hall of Science, USA
Delia Meza*, New York Hall of Science, USA
Sarah Ketani, New York Hall of Science, USA
Alyssa Whu, New York Hall of Science, USA
Sylvia Perez, New York Hall of Science, USA
Susan Letourneau, New York Hall of Science, USA

Strand 6: Science Learning in Informal Contexts
WIP Roundtable
Exploring the Integration of Place-Based Education and Environmental Interpretation at an Informal Science Institution
Ryan Spencer*, Texas State University, USA
Meena Kharatmal, Texas State University, USA
Kristy Daniel, Texas State University, USA

Strand 6: Science Learning in Informal Contexts
WIP Roundtable
Developing Wicked Learners for a World of Wicked Problems
Shawn Rowe*, Exploratorium, USA

Strand 7: Pre-service Science Teacher Education
Roundtable
Developing Elementary Teacher Candidates' AI Assessment Literacy through STEMLEAD Self-Assessment Tool
Athena Hui Jiang, Iowa State University, USA
E.J. Bahng*, Iowa State University, USA
Stephen Fieffer, Iowa State University, USA
Omar Abudagga, Iowa State University, USA
Stephen Gilbert ,Iowa State University, USA
Silmi Zafira, Iowa State University, USA
Syeda Chowdhury, Iowa State University, USA
Clark Coffman, Iowa State University, USA
Mack Shelley, Iowa State University, USA

Strand 7: Pre-service Science Teacher Education
WIP Roundtable
Connecting Creativity with PCK: Creating a Framework for Science Teacher Education
William Veal*, The College of Charleston, USA
Vanessa Kind*, The University of Leeds, United Kingdom

Strand 7: Pre-service Science Teacher Education
Roundtable
Embedding Systems Thinking in Pre-Service Science Education to Promote Inquiry-Based Teaching
Azka Kiran*, Virginia Tech, USA
Monday Moju, Virginia Tech, USA
Lezly Taylor, Virginia Tech, USA

Strand 7: Pre-service Science Teacher Education
Roundtable
Empowering Pre-Service Teachers to Bridge Research and Secondary STEM Education
Katherine King*, Georgia Institute of Technology, USA
Heidi Turcotte*, Georgia Institute of Technology, USA
Meltem Alemdar, Georgia Institute of Technology, USA

Strand 7: Pre-service Science Teacher Education
Roundtable
Non-formal Education Pedagogy and Practices in K-12 Science Classrooms: A Phenomenological Study
Liz Carletta*, Rutgers University-Newark, USA

Strand 8: In-service Science Teacher Education
Roundtable
Science Teachers' Evolving Perceptions of Scientific Uncertainty Across Two Years of Practice-Based Professional Development
Yiwen Li*, Arizona State University, USA
Ying-Chih Chen, Arizona State University, USA
Michelle Jordan, Arizona State University, USA
Carlos Meza-Torres, Arizona State University, USA
Jongchan Park, University of Georgia, USA
Yu Ye, Arizona State University, USA

Strand 8: In-service Science Teacher Education
Roundtable
Exploring In-Service Science Teachers' Understanding of Systems Thinking Approach and Pedagogical Strategies to Foster it
Monday Moju*, Virginia Tech, USA
Akza Kiran*, Virginia Tech, USA
Olusegun Fashakin, University of Lagos, Nigeria

Strand 8: In-service Science Teacher Education
WIP Roundtable
Impacts of a Professional Development Program on Biology Teachers' Scientific Argumentation Competency and PCK
Shan LIN*, Beijing Normal University, China
Jian WANG, Beijing Normal University, China

Strand 11: Cultural, Social, and Gender Issues
Roundtable
Broadening "Queering" in STEM: Advancing a Relational Paradigm Through Queer Cultural Praxis
K. Mendoza*, University of Nebraska at Omaha, USA
Khanh Tran*, Utah State University, USA

Strand 11: Cultural, Social, and Gender Issues
Roundtable
School and racial climate in the context of Science and Mathematics Teaching in Puerto Rico
Maria Medina, University of Puerto Rico, USA
Isabel Delgado*, University of Puerto Rico, USA
Sara Ocasio, University of Puerto Rico, USA
Melitza Nieves*, University of Puerto Rico, USA

Strand 11: Cultural, Social, and Gender Issues
Roundtable
Cultural and Linguistic Diversity in STEM Education: NARST and NSTA Perspectives
Narendra Deshmukh*, Ret. from Homi Bhabha Centre for Science Education, TIFR, India

Strand 11: Cultural, Social, and Gender Issues
Roundtable
Negotiating Cultural Expectations and Career Agency: East Asian Americans' STEM Career Choices
Layla Zang*, Virginia Tech, USA
Brenda Brand*, Virginia Tech, USA
Lezly Taylor*, Virginia Tech, USA

Strand 15: Policy, Reform, and Program Evaluation
WIP Roundtable
Identifying High-Quality Teachers and Their Job Satisfaction in TALIS 2018
Elif Ozulku*, University of Notre Dame, USA
Sebnem Atabas, University of St. Joseph, USA

Celebrating the Everyday in Science Learning Across Contexts and Lifespans

Strand 6: Science Learning in Informal Contexts
20-Apr-26, 14:45-16:15
Location: Virginia (L4)

Related Paper Set
Science in the Strands: An Ethnographic Study of the Natural Hair Community
Grace Tukurah*, Michigan State University, USA

Related Paper Set
A Right to Repair: The Navigation of a Black Learner's STEM Identity
Brandi Cannon-Force*, Stanford University, USA

Related Paper Set
Fractal Thinking with Poly-Epistemic Families about Tortilla-Making
Alejandra Frausto Aceves*, Northwestern University, USA

Building Preservice Teachers' Computational Thinking and AI-Integrated Modeling Practices
Strand 7: Pre-service Science Teacher Education
20-Apr-26, 14:45-16:15
Location: Columbia (L4)

Stand-Alone Paper
Pre-service science teacher learning about computational thinking through computational modeling practices
Amanda Peel*, New Mexico State University, USA

Stand-Alone Paper
Pre-service Teachers' Learning and Reflection Computational Thinking and Transdisciplinarity in an Out-of-School Project
Camila Gasparin, Georgia State University, USA
Sudha Awasthi, Georgia State University, USA
Patrick Enderle*, Georgia State University, USA

Stand-Alone Paper
Pre-service Science Teachers' Use of AI for NGSS Teaching and 3D Learning
Emil Eidin*, University of Wyoming, USA
Peng He, Washington State University, USA
Tingting Li, Washington State University, USA

Stand-Alone Paper
How Preservice Teachers Simplify Computational Thinking Concepts During Elementary Science Lessons: Strategies and Challenges
Drew Gossen*, University of South Alabama, USA
Shenghua Zha, University of South Alabama, USA
Na Gong, University of South Alabama, USA
Sanju Chhetri G C, University of South Alabama, USA
Kelly Byrd,University of South Alabama, USA
Jennifer Simpson, University of South Alabama, USA

Exploring STEM educators' professional learning pathways
Strand 8: In-service Science Teacher Education
20-Apr-26, 14:45-16:15
Location: Cedar AB (L2)

Stand-Alone Paper
Discrepancies in Feedback Perceptions of STEM Teachers and their Students: Giving or Discussing Feedback
Josine Görtzen*, Eindhoven University of Technology, Netherlands
Gonny Schellings, Eindhoven University of Technology, Netherlands
Nienke Nieveen, Eindhoven University of Technology, Netherlands

Stand-Alone Paper
Evolving Educator Practices: Integrating Professional Learning in the STEM for All Project
Melissa Livingston*, Oregon State Unversity, USA
Cory Buxton, Oregon State Unversity, USA

Stand-Alone Paper
Interaction among Pedagogical Content Knowledge Components for Teaching STEMIn High School Science Teachers
Mustakeem Awae*, Kasetsart University, Thailand
Chatree Faikhamta, Kasetsart University, Thailand

Stand-Alone Paper
Rural high school teachers' experience with micro-credential-based professional development: A collective case study
Madeline Stallard*, North Carolina State University, USA
M. Gail Jones, North Carolina State University, USA
Kathleen Bordewieck, North Carolina State University, USA
Amber Meeks, North Carolina State University, USA

Elementary teacher development in science and engineering
Strand 8: In-service Science Teacher Education
20-Apr-26, 14:45-16:15
Location: Juniper (L2)

Stand-Alone Paper
"You can learn the science together": Insights from bright spot elementary teachers
Ryan Nixon*, Brigham Young University, USA
Stefan Sorge, IPN - Leibniz Institute for Science and Mathematics Education, Germany

Stand-Alone Paper
Teacher Identity Development in Elementary Science Education: A Longitudinal Study through an Identities-In-Practice Lens
Selin Akgün*, University of Minnesota, USA

Stand-Alone Paper
Impacts of Professional Learning on Elementary Teachers' Engineering Teaching Self-Efficacy to Support Multilingual Learners
Meghan Macias*, WestEd, USA
Ashley Iveland, WestEd, USA

Using content analysis to advance equity
Strand 11: Cultural, Social, and Gender Issues
20-Apr-26, 14:45-16:15
Location: Willow B (L2)

Stand-Alone Paper
Proposing Evidence-based STEM Curriculum for Latinx Students' Success: A Meta-Synthesis of Effective Intervention Elements
Noushin Nouri*, University of Texas Rio Grande Valley, USA
Maryam Saberi, Ministry of Education, Iran, Islamic Republic of
Amir Hossein Karimi Aghbolagh, University of Texas Rio Grande Valley, USA

Stand-Alone Paper
Feminist men of science: The better roles for men that feminist research suggests
Bjørn Johannsen*, University College Copenhagen, Denmark

Stand-Alone Paper
Science for Whom? Examining Teachers Pay Teachers Materials Using a Culturally Relevant Science Teaching Framework
Jennifer Simons*, George Mason University, USA

Stand-Alone Paper
Exploring Approaches to Equity: A Content Analysis of Two Scripted Curricula in Science Education
Adrianne Dizon*, University of Nevada, Las Vegas, USA
Dilara Kara-Zorluoglu*, University of Nevada, Las Vegas, USA
Debika Jana*, University of Nevada, Las Vegas, USA
Ambreen Islam, University of Nevada, Las Vegas, USA
Sameul Hoque Fahad,University of Nevada, Las Vegas, USA
Chike Elue, University of Nevada, Las Vegas, USA
Burak Sahin, University of Nevada, Las Vegas, USA
Katherine Wade-Jaimes*, University of Nevada, Las Vegas, USA

Stand-Alone Paper
Discourse of Power and Gender in STEM: A Feminist Discourse Analysis of General Chemistry Textbooks
Lauren Dudley*, Western Washington University, USA

AI, Identity, Representation, & Science Culture

Strand 12: Technology for Teaching, Learning, and Research
20-Apr-26, 14:45-16:15
Location: Ballard (L3)

Stand-Alone Paper
Artificial Intelligence Generates Stereotypical Images of Scientists But Can Also Detect Them: A Draw-A-Scientist Test
Gyeonggeon Lee*, National Institute of Education, Singapore

Stand-Alone Paper
Prompt Engineering for Mathematics Disciplinary Literacy: A Qualitative Case Study of an Elementary Bilingual Teacher
Magdalena Pando, Southern Methodist University, USA
Maricela Leon*, The University of Texas at Arlington, USA

Science Education in the Age of Uncertainty: Epistemic and Pedagogical Perspectives

Strand 13: History, Philosophy, Sociology, and Nature of Science
20-Apr-26, 14:45-16:15
Location: Jefferson B (L4)

Symposium
Science Education in the Age of Uncertainty: Epistemic and Pedagogical Perspectives
Benedikt Heuckmann*, University of Münster, Germany
Kostas Kampourakis, University of Geneva, Switzerland

Marcus Kubsch, Freie Universität Berlin, Germany
Eve Manz, Boston University, USA
Genelle Diaz-Silveira, Boston University, USA
Ayelet Baram-Tsabari, Technion – Israel Institute of Technology, Israel
Yael Rozenblum, Technion – Israel Institute of Technology, Israel
Orli Wolfson, Technion – Israel Institute of Technology, Israel
Douglas Allchin, University of Minnesota, USA
Jonathan Osborne, Stanford University, USA

Climate Justice, Civic Action, and Imagining Just Futures

Strand 14: Environmental Education and Sustainability
20-Apr-26, 14:45-16:15
Location: Issaquah AB (L3)

Stand-Alone Paper
Youth Pursuing a Just, Sustaining and Thriving Future through Climate Civic Action
Hosun Kang*, University of California Irvine, USA
Nelly Tsai*, Northwood High School, USA
Tesha Sengupta-Irving, University of California Berkeley, USA

Stand-Alone Paper
Seeing the System: Grade-6 Learners Navigate Components, Mechanisms, and Phenomena in Climate Change
QINGNA JIN*, Cape Breton University, Canada
Mijung Kim*, University of Alberta, Canada
Josh Markle*, University of Alberta, Canada

Stand-Alone Paper
Feet in the Field, Joy in the Heart: Designing Climate Change Education Through Photovoice
Imogen Herrick, University of Kansas, USA
Michael Lawson*, Kansas State University, USA
Jaclyn Dudek, University of Kansas, USA

Stand-Alone Paper
Urban Gardens as Educational & Speculative Technologies for a more Just and Joyful Futures
Colin Hennessy Elliott*, Drexel University, USA
Christopher Wright, Drexel University, USA

Science in Relationship: A Radical Reset for Science Education

20-Apr-26, 14:45-16:15
Location: Seneca (L4)

Administrative Session

Organizers
Lucy Avraamidou, University of Groningen, Groningen, Netherlands
Betzabe Torres Olave, University of Groningen, Netherlands

Contributors
Alejandra Frausto Aceves, Northwestern University, USA
Sara Tolbert, Monash University, Australia
Tatiane Russo Tait, University of Georgia, USA
Mindy Chappell, University of Illinois Urbana-Champaign, USA
Olayinka Mohorn-Mintah, University of Memphis, USA
Jonathan (JD) McCausland, Iona University, USA

Identifying Mechanisms and Networks for Senior Scholar Support of Early-Career NARST Researchers

20-Apr-26, 14:45-16:15
Location: Jefferson A (L4)

Administrative Session

Organizers
Sharon Nelson-Barber[1], WestEd, USA
Gail Richmond[2], Michigan State University, USA
Troy Sadler, University of North Carolina Chapel Hill, USA
Greg Kelly, University of Massachusetts Amherst, USA
Stefanie Marshall, Michigan State University, USA
Travis York, AAAS, USA
Patrick Enderle, Georgia State University, USA

Contributors
Bhaskar Upadhyay, University of Minnesota, USA
Tali Tal, Technion - Israel Institute of Technology, Israel
Noemi Waight, University at Buffalo, USA
Jessica Thompson, University of Washington, USA

Graduate Student Forum

20-Apr-26, 14:45-16:15
Location: Cirrus Ballroom (35th fl)

Discussion Session

Organizers
Muhammad Guntur Purwanto, University of Minnesota, Minnesota, USA
Collins Moga, UMass Dartmouth, Massachusetts, USA
Souhaila Nassar, Boston University, Massachusetts, USA

Outdoor Science Teaching and the "Not-So-Hidden" Curriculum of Schools

Strand 2: Science Learning: Contexts, Characteristics and Interactions
20-Apr-26, 16:30-18:00
Location: Willow A (L2)

Symposium
Outdoor Science Teaching and the "Not-So-Hidden" Curriculum of Schools
Gail Richmond*, Michigan State University, USA
Kara Haas, Michigan State University, USA
Grace Tukurah, Michigan State University, USA
Cory Miller, Michigan State University, USA
Ly Duong, Michigan State University, USA

How Teachers' Epistemological Framing Shapes Science Learning

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
20-Apr-26, 16:30-18:00
Location: Ravenna C (L3)

Stand-Alone Paper
A Case Study of Biomimicry-Focused Professional Development and Implementation of Teacher-Designed Integrated Units
Michael Cassidy*, TERC, USA
Kathryn Hobbs, TERC, USA

Debra Bernstein, TERC, USA
Kristen Wendell, Tufts University, USA
Bill Church, CRCS, USA
Xu Geling, Tufts University, USA
Tyrine Pangan, Tufts University, USA
Ethan Danahy, Tufts University, USA

Stand-Alone Paper

Authenticity and entomology knowledge in science classrooms

David Stroupe*, University of Utah, USA
Megan Walser*, Michigan State University, USA
Sarah Haavind, Independent, USA

Stand-Alone Paper

Teachers' Strategies for Supporting Epistemic Practices in Small-Group Middle School STEM Design

Muhammad Purwanto*, University of Minnesota-Twin Cities, USA
Gillian Roehrig, University of Minnesota-Twin Cities, USA
Jeanna Wieselmann, Southern Methodist University, USA

Stand-Alone Paper

The Role of Affect in Science Teachers' Workplace Discourse

Dana Vedder-Weiss*, Ben Gurion University of the Negev, Israel
Tal Meltz, Ben Gurion University of the Negev, Israel

Stand-Alone Paper

Phenomenon- or Concept-Focused: Differences in Teachers' Epistemological Framing in an Integrated Computational Modeling Chemistry Unit

J. Elisabeth Kasner*, Florida State University, USA
Aditi Wagh, Massachusetts Institute of Technology, USA

Quantitative Problem-Solving and Reasoning Across STEM

Strand 5: College Science Teaching and Learning (Grades 13-20)
20-Apr-26, 16:30-18:00
Location: Aspen (L2)

Stand-Alone Paper

The role of metacognition and confidence in quantitative reasoning in college biology courses

Joseph Dauer*, University of Nebraska-Lincoln, USA
Brian Couch, University of Nebraska-Lincoln, USA
Anum Khushal, University of Nebraska-Lincoln, USA
Robert Mayes, Georgia Southern University, USA
Kent Rittschof, Georgia Southern University, USA

Stand-Alone Paper

Blending Science and Mathematics Sensemaking: Exploring Undergraduate Responses to Biological Quantitative Problem Solving Prompts

Amber Armstrong, University of Minnesota, USA
Kevin Haudek*, Michigan State University, USA
Michael Fleming, California State University, Stanislaus, USA
Anita Schuchardt*, University of Minnesota, USA

Stand-Alone Paper
A Study of Exploring Undergraduate Students' Interpretations of Biological Sense-Making with Equations Using Eye Movements
Mallika Saha*, Texas State University, USA
Kristy Daniel, Texas State University, USA
Anita Schuchardt, University of Minnesota, USA

Place-Based Environmental Learning

Strand 6: Science Learning in Informal Contexts
20-Apr-26, 16:30-18:00
Location: Virginia (L4)

Stand-Alone Paper
Citizen/Crowd-sourced Science as a Gateway to Education, Outreach, & Research at a Nature Center
Syed Nauman Wazir*, University of Massachussetts, USA
Hamza Malik, Lloyd Center for the Environment, USA
Stephen Witzig, University of Massachussetts, USA

Stand-Alone Paper
Teeth in the Tide: Advancing Ocean Literacy Through After-School Programs in Underrepresented Coastal Communities
Cameron Shaw*, University of Miami, USA

Stand-Alone Paper
Mining in the Mountains: Problem-based Learning in Informal Education to Support Perspective and Argumentation
Katherine Sharp*, Missouri University of Science and Technology, USA
Carson Dudley, Missouri University of Science and Technology, USA
Carly Carron, Missouri University of Science and Technology, USA

Stand-Alone Paper
Expansive Perspectives on Children's Environmental Advocacy During a Critical, Place-Based Podcasting Unit
Lauren Connelly*, Vanderbilt University, USA
Heidi Carlone, Vanderbilt University, USA
Hannah Ziegler, Vanderbilt University, USA

Examining the Pedagogical Praxis of Science Teacher Educators and Professional Learning Facilitators

Strand 7: Pre-service Science Teacher Education
20-Apr-26, 16:30-18:00
Location: Columbia (L4)

Related Paper Set
Exploring science teacher educators' language orientations and their approaches for teaching science with multilingual learners
María González-Howard*, The University of Texas at Austin, USA
Leticia Garza*, The University of Texas at Austin, USA
Nazia Tasnim*, The University of Texas at Austin, USA

Related Paper Set
Attending to Complexity in Science Teacher Educator Self-Study
Kerri Wingert*, Good Question Research, USA
Shelley Stromholdt, Aspect Research and Evaluation, USA

Related Paper Set

Facilitators learning to cultivate interpretive power: The need for race-explicit facilitation

Bethany Daniel, Vanderbilt University, USA
D. Teo Keifert, University of North Texas, USA
Ashlyn Pierson, The Ohio State University, USA

Related Paper Set

Pedagogically strategic uses of generative AI in science methods courses

Christina Krist*, Stanford University, USA
Polly Diffenbaugh*, Stanford University, USA

Related Paper Set

Shifting Worldviews: How Science PL Facilitators Support Teachers to Adapt Science Curricular Materials for Equity.

Enrique Suárez*, University of Massachusetts, Amherst, USA
Rachel Hale, University of Massachusetts, Amherst, USA
Danielle Crabtree, University of Massachusetts, Amherst, USA

Innovative professional learning networks and contexts

Strand 8: In-service Science Teacher Education
20-Apr-26, 16:30-18:00
Location: Cedar AB (L2)

Stand-Alone Paper

Rural Science Teachers' Professional Networks and Instructional Growth During Multi-Year Hybrid PD: An Ego-Network Analysis

Syahrul Amin*, Texas A&M University, USA
Magda Villwock, Texas A&M University, USA
Rebecca Sansom*, Texas A&M University, USA

Stand-Alone Paper

"Iron Sharpens Iron:" Making Sense of Equity in a Teacher-driven Professional Learning Community

Karen Woodruff*, Kean University, USA

Stand-Alone Paper

From Creekbeds to Confidence: How Place-Based Professional Learning Expands Teacher Perspectives on Place and Data

Amanda Garner*, University of Tennessee, USA
Leah Rosenbaum, Columbia University, USA
Joshua Rosenberg, University of Tennessee, USA
Zhen Xu, University of Tennessee, USA
Kimberly Jones, University of Tennessee, USA

Reexamining PCK and Its Roles in Researching Science Teacher Expertise Required for 21st-Century Science Education

Strand 8: In-service Science Teacher Education
20-Apr-26, 16:30-18:00
Location: Juniper (L2)

Symposium
Reexamining PCK and Its Roles in Researching Science Teacher Expertise Required for 21st-Century Science Education
Janet Carlson*, Stanford University, USA
Jan van Driel, The University of Melbourne, Australia
Soonhye Park, North Carolina State University, USA
Hanna Stammes, Radboud University, Netherlands
Ineke Henze,Radboud University, Netherlands
Pernilla Nilsson, Halmstad University, Sweden
Amanda Berry, RMIT University, Australia
William Veal, College of Charleston, USA
Moritz Krell, IPN – Leibniz Institute for Science and Mathematics Education, Germany
Melanie Kinskey, Texas A & M University, USA
William Romine*, Wright State University, USA
Amelia Whorton, Wright State University, USA
Delinda VanGarderen, University of Missouri, USA
Amy Lannin, University of Missouri, USA
William Folk, University of Missouri, USA

Enhancing Science Learning Through Curriculum Design

Strand 10: Curriculum and Assessment
20-Apr-26, 16:30-18:00
Location: Greenwood (L3)

Stand-Alone Paper
Using multi-modal texts to improve middle school students' argumentation related to vaping

Stand-Alone Paper
A Case Study Comparing Primary/Middle School Science Teachers' Use of Scripted Science Curriculum
Tina Vo*, University of Nevada, Las Vegas, USA
Chike Elue, University of Nevada, Las Vegas, USA
Mayra Marquez-Mendez, University of Nevada, Las Vegas, USA
Adjoa Mensah, University of Nevada, Las Vegas, USA

Stand-Alone Paper
Science Curriculum Standards and Teacher Development: A Comparative Study of Australia, Indonesia, and the US
Rika Mardiana*, The Ohio State University, USA
Lin Ding, The Ohio State University, USA

Stand-Alone Paper
The Performance and Cultivation Strategies of Students' Collaborative Problem Solving in Project-based Learning
Yanan ZHAO*, Shandong Provincial Institute of Educational Sciences, China
Lei WANG, Beijing Normal University, China

Advancing activism, equity, and justice in science education

Strand 11: Cultural, Social, and Gender Issues
20-Apr-26, 16:30-18:00
Location: Willow B (L2)

Stand-Alone Paper
Embodying STEM teacher activism in uncertain sociopolitical terrains: An autoethnographic exploration of queer radical allyship
Olivia Magnuson*, HL Harshman Middle School, USA
Khanh Tran, Utah State University, USA

Stand-Alone Paper
Science as White Property in a Behavior-Focused Alternative School
Maizie Dyess*, University of Rhode Island, USA

Stand-Alone Paper
Establishing Radical Spaces for Pluriversal Reimagining of Science Education
Isis Howard*, University of Calgary, Canada
Sheliza Ladhani, University of Calgary, Canada
Kristal Turner, University of Calgary, Canada
Kristen Schaffer, Mount Royal University, Canada
Jennifer Adams, University of Calgary, Canada

Stand-Alone Paper
Extending Justice-Centered Science Through Trauma-Informed Praxis
Symone Gyles*, University of California, Irvine, USA
Sharim Hannegan-Martinez, University of Michigan, USA

Designing and Implementing AI-Generated Feedback to Support Science Learning

Strand 12: Technology for Teaching, Learning, and Research
20-Apr-26, 16:30-18:00
Location: Ballard (L3)

Related Paper Set
The Impact of Tailored Feedback on Students' Movement along a Learning Progression
Wenxiu Tang*, South China Normal University, China
Clare Franovic, Michigan State University, USA
Leonora Kaldaras, Texas Tech University, USA
Kevin Haudek, Michigan State University, USA
Yangyi Qian, South China Normal University, China
Joseph Krajcik, Michigan State University, USA

Related Paper Set
Training AI To Produce Guiding and Meaningful Feedback To Support Learning and Foster Knowledge-In-Use
Leonora Kaldaras*, University of Houston, USA
Clare Franovic, Michigan State University, USA
Yucheng Chu, Michigan State University, USA
Jiliang Tang, Michigan State University, USA
Joseph Krajcik, Michigan State University, USA

Kevin Haudek, Michigan State University, USA

Related Paper Set

How Do Biology Undergraduates Engage with AI Feedback On Research Proposals?

Michele Weston*, Michigan State University, USA
Tammy Long, Michigan State University, USA

Related Paper Set

Designing and validating three-dimensional, learning-progression-aligned cognitive feedback for AI-generation

Clare Franovic, Michigan State University, USA
Leonora Kaldaras, University of Houston, USA
Wenxiu Tang, South China Normal University, China
Selin Akgun, University of Minnesota Twin Cities, USA
Joe Krajcik, Michigan State University, USA
Kevin Haudek*, Michigan State University, USA

Teacher Technology Integration & EdTech Adoption

Strand 12: Technology for Teaching, Learning, and Research
20-Apr-26, 16:30-18:00
Location: Capitol Hill (L3)

Stand-Alone Paper

Understanding Pre-Service Teachers' Barriers and Decisions Around Educational Technology Use in Science Teaching

Emmanuel Atiatorme*, Indiana University, USA
Meredith Park Rogers, Indiana University, USA

Stand-Alone Paper

Toward Developing a Valid and Reliable Questionnaire to Assess Nature of Technology Views

Isaiah Kent-Schneider*, Purdue, USA
Jerrid Kruse, Drake, USA
Lucas Menke, Drake, USA

Stand-Alone Paper

Technology as a Gateway to Sensemaking in Science: Secondary Science Professional Development

Adam Bennion*, Brigham Young University, USA
Julio Escobedo, Oak Canyon Jr High, USA

Trust and social justice perspectives

Strand 13: History, Philosophy, Sociology, and Nature of Science
20-Apr-26, 16:30-18:00
Location: Jefferson B (L4)

Stand-Alone Paper

Functions of Epistemic Trust Within the Narratives of Scientists with Disabilities

Mila Rosa Carden*, University of North Texas, USA
Jonathan Hall*, California State University San Bernardino, USA

Stand-Alone Paper

Reframing Nature of Science as Methodology: Public-Health Scientific

Literacy Through Stories and Curricular Mapping
Zachary Patterson*, University of Calgary, Canada

Stand-Alone Paper
What if cooking isn't chemistry? The harm in metaphorical connections between science and everyday activities
Noah Weeth Feinstein*, University of Wisconsin-Madison, USA
Ryan Stowe*, University of Wisconsin-Madison, USA

How and Why Teach about Indigenous Self-Determination Through Science Education: Lessons from the Fish Wars

Strand 14: Environmental Education and Sustainability
20-Apr-26, 16:30-18:00
Location: Redwood AB (L2)

Symposium
How and Why Teach about Indigenous Self-Determination Through Science Education: Lessons from the Fish Wars
Kelsie Fowler*, University of Washington, USA
Philip Bell*, University of Washington, USA
Willie Frank III*, Nilly Frank Jr Institute, USA
Megan Bang*, Northwestern University, USA
Pauline Chinn*, University of Hawaii, USA
Shana Brown*, University of Washington, USA
Anastasia Sanchez, PSESD, USA
Dawn Hardison-Stevens*, University of Washington, USA

Advancing Connections Between Research and Practice

20-Apr-26, 16:30-18:00
Location: Issaquah AB (L3)

Administrative Session

Organizers
Carla Zembal-Saul, Penn State University, USA
Meredith Park Rogers, Indiana University - Bloomington, USA
Colby Tofel-Grehl, Teachers College - Columbia University

Poster Session
20-Apr-26, 18:00-19:30
Location: Metropolitan Ballroom A/B (L3)

Strand 1: Science Learning: Development of student understanding
Poster
Mapping Minds: A Comprehensive Review of Conceptual Modeling Methodologies, Methods, and Tools in Education
Roee Peretz*, Technion - Israel Institute of Technology, Israel

Strand 1: Science Learning: Development of student understanding
Poster
First Graders' Reasoning About Celestial Motion and Daylight: Strengths and Challenges Aligned to NGSS PEs
Arif Rachmatullah*, SRI International, USA
Marta Mielicki, SRI International, USA
Nonye Alozie, SRI International, USA
Hui Yang, SRI International, USA
Daisy Rutstein, edCount, LLC, USA
Anna Jennerjohn, SRI International, USA
Doug Gagnon, SRI International, USA

Strand 1: Science Learning: Development of student understanding
Poster
Conceptualizing Core Ideas in Science Education: A Systematic Literature Review
HELEN SEMILARSKI*, University of Tartu, Estonia
HELIN SEMILARSKI, University of Tartu, Estonia

Strand 1: Science Learning: Development of student understanding
Poster
Fourth Graders' Reflections on Engineering During a Rube Goldberg Machine Design Challenge
Lisa Borgerding*, Kent State University, USA
Gözde McLaughlin, Kent State University, USA
Sima Ahmadi, Kent State University, USA
DeNae Kizys, Kent State University, USA
Elena Novak,Kent State University, USA
Rui Liu, Kent State University, USA

Strand 1: Science Learning: Development of student understanding
Poster
Exploring Nutrition Through Multiple Experiential Activities: A 7th Grade Classroom Study
Valeria Vendries*, University of Miami, USA
Ji Shen, University of Miami, USA
Manav Sharma, University of Miami, USA
Wei Xiong, University of Miami, USA
Amylia Wiesner, University of Miami, USA
Arlette Perry, University of Miami, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Students' Learning Characteristics in a Polar Education Program Reducing Psychological Distance
Soyoung Mun*, Department of Science Education, Ewha Womans University, Korea, Republic of
Donghee Shin, Department of Science Education, Ewha Womans University, Korea, Republic of

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Perspectives on Effective Science Teaching: Case studies of Noyce teachers and their students
Dominick Fantacone*, SUNY Cortland, USA
Elizabeth Edmondson*, Virginia Commonwealth University, USA
Aimee Ellington, Virginia Commonwealth University, USA
Sean Nolan, SUNY Cortland, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
A Three-Dimensional Framework for Visualizing Epistemic Agency Patterns in Small-Group Scientific Argumentation
Hun Jeong*, Department of Science Education, Seoul National University, Korea, Republic of
Soo-Yean Shim, Department of Science Education, Seoul National University, Korea, Republic of

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Fostering a Physicist's Mindset: The Influence of Contextual Factors in an Taiwanese Undergraduate Physics Course
Yueh-Chang Li*, National Sun Yat-sen University（NSYSU）, Taiwan
Leo Crisologo*, National Sun Yat-sen University, Taiwan
Yu-Hui Chang*, National Sun Yat-sen University（NSYSU）, Taiwan

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Elaborating How Different Types of Coherence May Influence Science Learning and Transfer: A Theoretical Model
Jeffrey Nordine*, University of Iowa, USA
Marcus Kubsch*, Freie Universität Berlin, Germany

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
The Effects of Frequency and Duration of Thinking Periods on Science Learning
Vishal Easwar*, Boston College, USA
Ido Davidesco, Boston College, USA
Dax Ovid, University of Georgia, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Highschool Students' Coding Strengths and Challenges in a Computational Thinking-Focused Biology Unit
Na'ama Av-Shalom*, Boston College, USA
Ido Davidesco, Boston College, USA
Bianca Montrosse-Moorhead, University of Connecticut, USA
Dylan Boczar, University of Connecticut, USA
Julia Oas, University of Connecticut, USA
Mary-Kate Coburn, University of Connecticut, USA
David Weintrop, University of Maryland, USA
Aaron Kyle, Duke University, USA
Leslie Bondaryk, Concord Consortium, USA

Strand 2: Science Learning: Contexts, Characteristics and Interactions
Poster
Challenges and Affordances in Engaging K-12 Students in Authentic Data Investigations
Zhen Xu*, University of Tennessee Knoxville, USA
Joshua Rosenberg*, University of Tennessee Knoxville, USA
Cody Pritchard*, University of Tennessee Knoxville, USA
David Krebs, West High School, USA
Jennifer Sauer,South Doyle Middle School, USA
Audry Parker, South Doyle Middle School, USA
Kathryn Hensley, West High School, USA

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Poster
Teacher Adaptations to Curriculum as a Window into Culturally Responsive Instruction: A Case Study
Sarah Voss*, Western Washington University, USA
Josie Melton*, Western Washington University, USA
Deborah Hanuscin*, Western Washington University, USA

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Poster
Theory-Informed Design of an XR Wildfire Education Program Based on Hazard Literacy and PPRR
Jin Yun*, Ewha Womans University, Korea, Republic of
Soyoung Mun, Ewha Womans University, Korea, Republic of
Donghee Shin, Ewha Womans University, Korea, Republic of

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Poster
Fostering young scientists: How educators and families communicate to support preschool science learning.
Tamara Turski*, University of Delaware, USA

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Poster
Investigating the Development of Science Literacy Skills
Heba EL-Deghaidy*, American University in Cairo, Egypt
Basant Hegazy, American University in Cairo, Egypt

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Poster
Elementary teachers' and students' perceptions of quantum and its relevance in elementary school
Nancy Holincheck*, George Mason University, USA
Jennifer Simons*, George Mason University, USA
Julia Lipman, Purdue University, USA
Stephanie Dodman, George Mason University, USA

Jessica Rosenberg, George Mason University, USA
Benjamin Dreyfus, George Mason University, USA
Laura Akesson, George Mason University, USA
Xiaolu Zhang, George Mason University, USA

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
Poster
Iterative Growth and Persistent Barriers: Navigating the Realities of Elementary Science in NGSS-Aligned Classrooms
Amy Belcastro*, BSCS Science Learning, USA
Susan Gomez Zwiep*, BSCS Science Learning, USA

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
Poster
How do learners solve an optical black box made up of combinations of polarization filters?
Hendrik Maas*, Leibniz University Hannover, Germany
Gunnar Friege, Leibniz University Hannover, Germany

Strand 5: College Science Teaching and Learning (Grades 13-20)
Poster
Designing and Evaluating a Digital Learning Unit for Undergraduate Chemistry: Impacts on Learning and Perception
Jasmin Kneuper*, TU Dortmund University, Germany
Sebastian Henke, TU Dortmund University, Germany
Insa Melle, TU Dortmund University, Germany

Strand 5: College Science Teaching and Learning (Grades 13-20)
Poster
Bridging Perception and Physiology in Undergraduate Physiology Courses: Investigating Cognitive Reengagement Following Interruptions
Richard Lamb*, University of Georgia, USA
Caitlin Volante, Vanderbilt University, USA
Viviane Ito, UNC Chapel Hill, USA
lindy Hernandez, Pennsylvania State University, USA
Ashley Anderson, Virginia Polytechnic Institute and State University, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
Poster
Undergraduate students' engagement in cross-disciplinary learning of energy concepts
Emily Borda*, Western Washington University, USA
Andrew Boudreaux, Western Washington University, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
Poster
Monitoring students' understanding and assignment design through formative assessment in a nutritional science course

Yonarki Garcia-Varela*, University of Arizona, USA
Olivia Anderson, University of Arizona, USA
Patricia Moreira*, University of Arizona, USA

Strand 5: College Science Teaching and Learning (Grades 13-20)
Poster
Building a Sustainable Community College Course-Based Undergraduate Research Experience Program
Melanie Harvey*, Johnson County Community College, USA
Heather Seitz*, Johnson County Community College, USA

Strand 6: Science Learning in Informal Contexts
Poster
Competencies and Confidence: Mapping Hiring Priorities and Self-Efficacy Among Informal Science Educators
K. Mendoza*, University of Nebraska at Omaha, USA
Megan Ennes*, University of Florida, USA

Strand 6: Science Learning in Informal Contexts
Poster
Addressing STEM Skill Obsolescence in a Technologically Advanced Economy
Beatrice Quiroz, University of South Carolina, USA
Devan Jones*, University of South Carolina, USA

Strand 6: Science Learning in Informal Contexts
Poster
Leading STEMM: An Ecological Systems Analysis of Science Education Leadership in Urban Schools
Taylor Mule*, The University of Memphis, USA
Robyn Pennella, St. Jude Children's Research Hospital, USA
Katherine Ayers, St. Jude Children's Research Hospital, USA

Strand 6: Science Learning in Informal Contexts
Poster
Coding with ChatGPT: High School Students' Experiences in a STEM Camp
Sheikh Ahmad Shah*, Boston College, USA
Wenfei Pei, Boston College, USA
Jaai Uday Phatak, Boston College, USA
Mobina Beheshti, Boston College, USA
Avneet Hira,Boston College, USA
Helen Zhang, Boston College, USA
Michael Barnett, Boston College, USA

Strand 7: Pre-service Science Teacher Education
Poster
Bridging Science and Engineering: Evaluating Engineering Design Lesson Quality in Preservice Teacher Preparation
John Ojeogwu*, Desert Research Institute, USA
Frackson Mumba, University of Virginia, USA

Strand 7: Pre-service Science Teacher Education
Poster
Testing Times: Agency and Identity in a Competitive Science Teacher Selection System
Wonyong Park*, University of Southampton, United Kingdom
Heesoo Ha, Pusan National University, Korea, Republic of

Strand 7: Pre-service Science Teacher Education
Poster
POSTER - "Empowering us to teach science": Future elementary teachers' perceived relevance of college science coursework
Ryan Nixon*, Brigham Young University, USA
Drew Gossen, University of South Alabama, USA
Jesse Wilcox, University of Northern Iowa, USA

Strand 7: Pre-service Science Teacher Education
Poster
Exploring the Link between Student Teachers' Decision-Making for SDG Lessons and their Executive Functions
Fang-Ying Yang*, National Taiwan Normal University, Taiwan
Chia-Hui Cheng, National Taiwan Normal University, Taiwan
Hush-Chih Chen, National Taiwan Normal University, Taiwan
Pei-Zhen Chen, National Taiwan Normal University, Taiwan

Strand 7: Pre-service Science Teacher Education
Poster
Examining Elementary Pre-Service Teacher Learning of Science Content through Learning Progression-based Models
Matthew Adams*, National Louis University, USA
Amanda Harwood, Alma College, USA
Julie Christensen, Michigan State University, USA
James Hancock, Alma College, USA

Strand 7: Pre-service Science Teacher Education
Poster
Clarifying our shared commitments across science education reform approaches to support pre-service teacher learning
Benjamin Lowell, University at Albany, USA
Daniel Pimentel*, The University of Alabama, USA
Daeun Jung, The University of Alabama, USA

Strand 7: Pre-service Science Teacher Education
Poster
Integrating Participatory Science into Secondary English Writing Methods
Richard Bex*, Illinois State University, USA
Shelby Boehm, Illinois State University, USA

Strand 7: Pre-service Science Teacher Education
Poster
Transformative Learning Through Place and Pedagogy: Preservice

Teachers' Reflections on the Deepwater Horizon Oil Spill
Lauren Wagner*, University of North Alabama, USA

Strand 7: Pre-service Science Teacher Education
Poster
Citizen Science: Learning Context for Teaching and Learning the Nature of Science
Christopher Long*, University of North Texas, USA
Mila-Rosa Carden*, University of North Texas, USA
Karthigeyan Subramaniam*, University of North Texas, USA
Nazia Khan, University of North Texas, USA

Strand 7: Pre-service Science Teacher Education
Poster
Pre-service Science Teachers' Epistemic Beliefs about Biotechnology
Selvet Ece Genek*, The Ohio State University, USA
Lin Ding, The Ohio State University, USA

Strand 7: Pre-service Science Teacher Education
Poster
Orienting Towards Linguistic Justice: An Exploration of Preservice Teachers' Language Orientations for Scientific Sensemaking
Sage Andersen*, SUNY Cortland, USA
María González-Howard, The University of Texas at Austin, USA

Strand 7: Pre-service Science Teacher Education
Poster
From Sage to Negotiator: Preservice Teachers Reimagining Voice and Authority in Science Classrooms
Mandy Dunphy*, Baylor University, USA
Brian Hand, University of Iowa, USA

Strand 7: Pre-service Science Teacher Education
Poster
Conceptual Infrastructures for Culturally Ambitious Science Development in Novice Teachers: Supporting Learning and Resistance
Christopher Mangogna*, University of Washington, USA

Strand 8: In-service Science Teacher Education
Poster
Spiraling Student Understanding and Agency: Supporting Teacher Instructional Design for SSI
Lisa Marco-Bujosa*, Villanova University, USA
Nicholas Kennedy, Villanova University, USA
Kristina Perez, Villanova University, USA

Strand 8: In-service Science Teacher Education
Poster
Reconceptualizing Collaborative Pedagogical Reasoning of Middle School Science Teachers in a Professional Learning Community
Jisu Kim*, Ewha Womans University, Korea, Republic of

Aeran Choi*, Ewha Womans University, Korea, Republic of
Jiye Kim, Ewha Womans University, Korea, Republic of

Strand 8: In-service Science Teacher Education
Poster
Navigating Contradictions in Teacher-Scientist Collaboration: An Activity Theory Analysis of Curriculum Co-Development Across Grade Bands
Rebecca Hite*, Texas Tech University, USA
Taylor Darwin, Texas Tech University, USA

Strand 8: In-service Science Teacher Education
Poster
Urban-Rural Disparities in Chinese Primary Science Teachers' Interdisciplinary Competence
Mengqian Wang*, CRISP, China
Xiuju Li*, CRISP, China
Hongbin Gao, CRISP, China
Junping Hu, CRISP, China
Chaochao Jia, CRISP, China

Strand 8: In-service Science Teacher Education
Poster
A Longitudinal Study of Mentor Teachers' Implementation of Educative Mentoring to Support Model-Based Science Teaching
Soonhye Park*, North Carolina State University, USA
Amanda Hall, Cullowhee Valley School, USA
Georgia Alexander, North Carolina State University, USA
Amelia Harris, North Carolina State University, USA
Seung Elsun, Indiana State University, USA
Grace Carroll, North Carolina State University, USA
Laura Chalfant, North Carolina State University, USA
Katherine Glover, North Carolina State University, USA
Khalid Alharbi, North Carolina State University, USA
Lynn Huff, North Carolina State University, USA

Strand 8: In-service Science Teacher Education
Poster
Customizing for Sustainability: How Teacher Beliefs, Values, and Challenges Influence K-12 Teachers' Customization Work
Julia Poel*, Stanford University, USA
Nicholas Leonardi*, University of Illinois Urbana-Champaign, USA
Barbara Hug*, University of Illinois Urbana-Champaign, USA

Strand 8: In-service Science Teacher Education
Poster
Early Career STEM Teachers' Access to and Use of Resources Over Three Years
Robert Idsardi*, Eastern Washington University, USA
Emily Hamada, Eastern Washington University, USA
Ella Yonai, Auburn University, USA
Shannon Navy, Kent State University, USA
Julie Luft, University of Georgia, USA
Lisa Borgerding, Kent State University, USA

Strand 8: In-service Science Teacher Education
Poster
Two Years of Online Professional Learning: Elementary Teachers' Professional Growth in Science and Engineering Teaching
Min Jung Lee*, University of North Dakota, USA
Martha Inouye, University of Wyoming, USA
Rebekah Hammack, Purdue University, USA
Jenna Gist, Purdue University, USA

Strand 8: In-service Science Teacher Education
Poster
Understanding Math and Science Teachers' STEM Epistemologies and Implementations of Integrated STEM
Daeun Jung*, The University of Alabama, USA
Daniel Pimentel, The University of Alabama, USA

Strand 8: In-service Science Teacher Education
Poster
Teacher Perceptions of Authority: Understanding how to Support Generative Learning Environments
Alison Warren*, Purdue University, USA
Brian Hand, University of Iowa, USA
Derek Rodgers, University of Iowa, USA

Strand 8: In-service Science Teacher Education
Poster
Supporting Elementary School Teachers' Computational Thinking Integration in Science: Efforts, and Opportunities
Wanjoo Ahn*, Michigan State University, USA
Christina Schwarz*, Michigan State University, USA
Aman Yadav, Michigan State University, USA

Strand 8: In-service Science Teacher Education
Poster
Tracking Science Teacher Leader Ego Networks
Jennifer Bateman*, Georgia Southern University, USA
Julianne Wenner, Clemson University, USA
Brooke Whitworth, University of South Carolina, USA

Strand 8: In-service Science Teacher Education
Poster
Tracking Change: Evolving Support Practices of District Science Coordinators for Novice Secondary Science Teachers
Khushbu Singh*, University of Virginia, USA
Jennifer Bateman, University of Georgia, USA
Brooke Whitworth, University of South Carolina, USA
Julie Luft, University of Georgia, USA

Strand 8: In-service Science Teacher Education
Poster
Emotional Labor in Science Teaching: Connecting Resilience and Exhaustion Among Early Career Teachers

Ella Yonai*, Auburn University, USA
Lisa Borgerding, Kent State University, USA
Shannon Navy, Kent State University, USA

Strand 8: In-service Science Teacher Education
Poster
Impacts of collaborative science research on teacher learning in a cohort-based ecology RET program
Rebecca Van Tassell*, Cary Institute of Ecosystem Studies, USA
Alan Berkowitz, Cary Institute of Ecosystem Studies, USA
Jane Lucas, Cary Institute of Ecosystem Studies, USA
Kari O'Connell, Oregon State University, USA
Matthew Nyman, Oregon State University, USA

Strand 8: In-service Science Teacher Education
Poster
Exploring How Instructional Tools Mediate Student Participation and Sensemaking in Science Classrooms
Meenakshi Sharma*, Mercer University, USA
Chloe Chambers, Mercer University, USA
Kathy Jarzynka, Mercer University, USA

Strand 10: Curriculum and Assessment
Poster
Teachers' Approaches to Fostering Relevance in Localized Storyline Units on Climate Change: Three Examples
Monica Sircar*, Stanford University, USA

Strand 10: Curriculum and Assessment
Poster
Analytical Chemistry PBL in Action: Gender-Differentiated Gains in Integrated Quantitative and Analytical Experimentation Skills
Chunmei ZHANG*, The University of Hong Kong, Hong Kong
Logan CHEN, The University of Hong Kong, Hong Kong

Strand 10: Curriculum and Assessment
Poster
Science and Engineering Practices in Kuwait's 10th Grade Biology Curriculum: A Content Analysis
Fatma Alherz*, Pennsylvania State University, USA
Julia Plummer, Pennsylvania State University, USA
Amy Voss Farris, Pennsylvania State University, USA

Strand 10: Curriculum and Assessment
Poster
Promoting Critical AI Literacy in Informal STEM Education: Community-Centered Curriculum Design
Selin Akgün*, University of Minnesota, USA
Heerin Lee, Michigan State University, USA
Kahyun Choi, University of Illinois Urbana-Champaign, USA

Strand 10: Curriculum and Assessment
Poster
Document Analysis of SSI-Based Climate Change Educational Resources for Nature of Science Representation
Jeff Papa*, Kent State University, USA

Bridget Mulvey, Kent State University, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
Exploring Success Factors for Underserved Graduate Students in STEM
Karen Collier*, Augusta University, USA
Wayne Hickman, Augusta University, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
(Un)Becoming-Scientists-With: A Poststructuralist Approach to Understanding Science Identity Development
Katherine Ayers*, St. Jude Children's Research Hospital, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
Inclusive life science curriculum can shift student attitudes and reduce bioessentialism
Charlie Blake*, Southern Illinois University Edwardsville, USA
Onyebuchi Ewa, Southern Illinois University Edwardsville, USA
Emily Eckles, Southern Illinois University Edwardsville, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
First-Generation STEM College Students: Social Capital and Support in Higher Education
Lia Betancourt*, Pepperdine University, USA
Krista Lucas*, Pepperdine University, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
Teacher professional development: Heritage and science in engineering thinking
Bhaskar Upadhyay*, University of Minnesota, USA
Samantha Barragan, University of Minnesota, USA
Lindsey Samaka, University of Minnesota, USA
Cuc Vu, University of Minnesota, USA
Stephanie Erickson, University of Minnesota, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
Translanguaging as Equity Practice: Supporting Science Identity Development Among Multilingual Students in U.S Science Classrooms
Rei Taklal*, University of Florida, USA
Julie Brown*, University of Florida, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
Investigating School STEM Climate and Student Science Attitudes and Interests
Xin Xia*, University of Virginia, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
Heart of the matter: Epistemic love as pedagogical guidance for culturally relevant STEM pedagogies
Khanh Tran*, Utah State University, USA
Takeshia Pierre*, Tufts University, USA

Strand 11: Cultural, Social, and Gender Issues
Poster
Containment Listening: Theorizing the Interactional Choreography of Care That Neutralizes Critique in Trust-Based Academic Relationships
Shahnaz Masani*, Michigan State University, USA

Strand 12: Technology for Teaching, Learning, and Research
Poster
How authentic is an AI-based student chatbot? Investigations into the perception of authenticity
Nina Minkley*, Biology Education, Ruhr-University Bochum, Germany
Alma Bektesi, Biology Education, Ruhr-University Bochum, Germany
Sascha Bernholt, IPN – Leibniz Institute for Science and Mathematics Education, Germany

Strand 12: Technology for Teaching, Learning, and Research
Poster
Identifying the Applications of Artificial Intelligence in Educational Entrepreneurship Development: Implications for Science Education
Mahnaz Zolfaghari*, Indiana University Bloomington, USA
Omid Afsharpour, Iowa State University, USA

Strand 12: Technology for Teaching, Learning, and Research
Stand-Alone Paper
ISACC II Meets ChatGPT: Enhancing Interdisciplinary Science Learning Through AI-Driven Personalized Feedback
Hyesun You*, University of Iowa, USA
Zhenhan Fang, University of Iowa, USA
Li Zhu, University of Iowa, USA
Lauren Kauffman, University of Iowa, USA

Strand 12: Technology for Teaching, Learning, and Research
Poster
Scaffolding Teenagers' AI Career Aspirations in a Microelectronics and Edge Intelligence Museum Summer Program
Yessy Ambarwati*, University of Florida, USA
Andrea Ramirez-Salgado*, University of Florida, USA
Woorin Hwang, University of Florida, USA
Talar Terzian, University of Florida, USA
Lauren Eutsler, University of North Texas, USA
Megan Barnes, University of North Texas, USA
Anany Sharma, University of Florida, USA
Dillon Donihue, Cade Museum, USA
Nicole Dominguez, Cade Museum, USA
Pavlo Antonenko, University of Florida, USA

Strand 12: Technology for Teaching, Learning, and Research
Poster
Science Academic Self-Efficacy, Learning Engagement, and STEM Aspirations: Urban–Rural Comparisons in Technology-Enhanced Science Education
Chin-Shu Yeh*, Department of Education, Taipei City Government, Taiwan
Pin-Chi Huang, National Taiwan Normal University, Taiwan
Min-Hsien Lee, National Taiwan Normal University, Taiwan
Tzung-Jin Lin, National Taiwan Normal University, Taiwan
Chia-Ching Lin, National Kaohsiung Normal University, Taiwan
Hung-Che Lin, National Defense Medical University, Taiwan
Jiun-Yu Wu, Southern Methodist University, USA
Guo-Li Chiou, National Taiwan Normal University, Taiwan
Chin-Chung Tsai, National Taiwan Normal University, Taiwan
Jyh-Chong Liang, National Taiwan Normal University, Taiwan

Strand 12: Technology for Teaching, Learning, and Research
Poster
Beyond the Optical Bench: Implementing a VR Interferometer in Physics Education
Gunnar Friege*, Leibniz University Hannover, Germany
Dirk Brockmann-Behnsen, Leibniz University Hannover, Germany
André Meyer, Leibniz University Hannover, Germany
Matthias Klassen, Leibniz University Hannover, Germany

Strand 12: Technology for Teaching, Learning, and Research
Poster
Mapping Readiness: Developing a Quadrant Analysis Tool to Integrate Advanced Technologies in STEM Lesson Planning
Adam Devitt*, California State University, Stanislaus, USA
Liz Whitewolf, edufab, USA

Strand 12: Technology for Teaching, Learning, and Research
Poster
Assessing Technology's Role in Correcting Misconceptions of High School Students
Narendra Deshmukh*, Ret from Homi Bhabha Centre for Science Education, TIFR, India

Strand 12: Technology for Teaching, Learning, and Research
Poster
Pilot Testing the Automated Discourse Analysis System (ADAS) for Science Classroom Discourse Feedback
Soon Lee*, Kennesaw State University, USA

Strand 12: Technology for Teaching, Learning, and Research
Poster
Teachers, Tasks, and Usability: Interpreting User Experience in Molecular Science Education
Minji Yun*, University of Florida, USA
Kent Crippen*, University of Florida, USA
Charles Xie, Institute for Future Intelligence, USA
Dylan Bulseco, Institute for Future Intelligence, USA

Strand 13: History, Philosophy, Sociology, and Nature of Science
Poster
Investigation of the Inclusion of NOS in the Recent Turkish Science Curriculum
Sevde YERİŞENOĞLU*, Bogazici University, Turkey
Ebru KAYA, Bogazici University, Turkey

Strand 14: Environmental Education and Sustainability
Poster
Assessing students' knolwedge regarding green chemistry thinking: test development and evaluation
Laura Freude*, University of Duisburg-Essen, Germany
Mathias Ropohl, University of Duisburg-Essen, Germany

Strand 14: Environmental Education and Sustainability
Poster
A Systematic Literature Review of Ocean Literacy in Non-formal Education
Lisa Coe*, University of Florida, USA
Hada Herring, University of Florida, USA
Julie Brown, University of Florida, USA
Bryndan Durham, University of Florida, USA

Strand 14: Environmental Education and Sustainability
Poster
Framework Development of Disaster Justice Education - Disaster Education Integrating Social Justice -
Minkyeong Mun*, EWHA Womans University, Korea, Republic of
Donghee Shin, EWHA Womans University, Korea, Republic of

Strand 14: Environmental Education and Sustainability
Poster
Critical Thinking Mobilization to Assess Information Regarding Climate Change Denial
João Pedro Coutinho*, Programa de Pós-Graduação Interunidades em Ensino de Ciências da USP, Brazil
Lúcia Sasseron, Faculdade de Educação da USP, Brazil

Strand 14: Environmental Education and Sustainability
Poster
Preservice Childhood Teachers, Children's Literature, and Environmental/Climate Justice Education
Leah Master*, NYU, USA

Strand 14: Environmental Education and Sustainability
Poster
Students' Beliefs, Perceived Barriers, and the Educational Role in Climate Change Mitigation and Adaptation
Helin Semilarski*, University of Tartu, Estonia
Katrin Vaino, University of Tartu, Estonia
Helen Semilarski, University of Tartu, Estonia
Ana Valdmann, University of Tartu, Estonia

Strand 14: Environmental Education and Sustainability
Poster
Testing Cross-National Measurement Invariance of TIMSS 2023 EAB Framework and Implications in Environmental Education Research
Amdad Ahmed Awsaf*, Florida International University, USA
Christopher Irwin*, Florida International University, USA

Strand 14: Environmental Education and Sustainability
Poster
Empowering Young Changemakers: Children Model Ocean Currents and Design Robots to Address Litter Issues
QINGNA JIN*, Cape Breton University, Canada
Enrique Hernandez*, Cape Breton University, Canada

Strand 15: Policy, Reform, and Program Evaluation
Poster
Fidelity of Implementation to Three-Dimensional Critical Components: A Systematic Review
Lauren Browning*, George Washington University, USA
Haley Lowe, George Washington University, USA
Jonathon Grooms, George Washington University, USA

Strand 15: Policy, Reform, and Program Evaluation
Poster
State Politics and Ethical Classroom Tensions: GenAI Initiatives in a Midwestern State
Ali Raza*, Grand Valley State University, USA
Stefanie Marshall*, Michigan State University, USA
Ain Grooms, University of Wisconsin-Madision, USA

JRST Dinner (by invitation only)

20-Apr-26, 18:30-20:00
Location: Diamond A (L1)

Milagritos of the Heart: A Reflective Craft Session for Building Community and Scholarship in Science Education

20-Apr-26, 19:30-21:00
Location: Willow A (L2)

Social Event

Organizers
María González-Howar[1], The University of Texas at Austin, USA
Enrique Suarez, University of Massachusetts-Amherst, USA
Uma Ganesan, The University of Texas Rio Grande Valley, USA
Angela Chapman, The University of Texas Rio Grande Valley, USA
Miriam Ortiz, The University of Texas Rio Grande Valley, USA
Alejandro Gallard, Georgia Southern University, USA
Alexander Eden, Salem State University, USA

Contributors
Uma Ganesan, The University of Texas Rio Grande Valley, USA
Miriam Ortiz, The University of Texas Rio Grande Valley, USA
Alexander Eden, Salem State University, USA
Angela Chapman, The University of Texas Rio Grande Valley, USA
Alejandro Gallard, Georgia Southern University
María González-Howard, The University of Texas at Austin, USA
Enrique Suarez, University of Massachusetts-Amherst, USA

Artificial Intelligence for STEM Education Research: Advanced Methods and Applications

20-Apr-26, 19:30-21:00
Location: Juniper (L2)

Administrative Session

Organizers
Xiaoming Zhai, University of Georgia, Athens, GA, USA
Kent Crippen, University of Florida, USA
Gyeonggeon Lee, Nanyang Technological University, Singapore

Contributors
Shuchen Guo, Nanjing Normal University
Yizhu Gao, University of Georgia, USA
Ehsan Latif, University of Georgia, USA
Lehong Shi, University of Georgia, USA
Matthew Nyaab, University of Georgia, USA

Fireside Chat: Networking, Socializing, and Connecting Among the ISK RIG Membership

20-Apr-26, 19:30-21:00
Location: Ravenna AB (L3)

Administrative Session

Organizers
Stacy Potes, University of Hawai'i at Mānoa, USA
Dimitri Smirnoff, University of Minnesota, USA
Julie Robinson, University of North Dakota, USA

Paichi Pat Shein, National Sun Yat-sen University, Taiwan

Contributors
Sharon Nelson-Barber, WestEd, USA
Bhaskar Upadhyay, University of Minnesota, USA
Pauline Chinn, University of Hawai'i at Mānoa, USA

Conference Day 3
21 April 2026

Committee Meetings
21-Apr-26, 7:00-8:00

Elections Committee Meeting
Location: Willow B (L2)

Awards Committee Meeting
Location: Aspen (L2)

Equity and Ethics Committee (EEC) Meeting
Location: Cedar AB (L2)

Graduate Student Committee Meeting
Location: Juniper (L2)

International Committee Meeting
Location: Ravenna AB (L3)

Membership Committee Meeting
Location: Ravenna C (L3)

Research Committee Meeting
Location: Issaquah AB (L3)

Scholarships Committee Meeting
Location: Greenwood (L3)

Professional Learning and Institutes Committee (PLIC) Meeting
Location: Capitol Hill (L3)

Social Media, Website, and Communications Committee (SMWCC) Meeting
Location: Ballard (L3)

Protect Science Education Research Committee (PSERC) Meeting
Location: Virginia (L4)

Program Committee Meeting
Location: Seneca (L4)

Empowering Science Teachers : PCK, Curiosity, and Speculative Approaches

Strand 2: Science Learning: Contexts, Characteristics and Interactions
21-Apr-26, 8:15-9:45
Location: Columbia (L4)

Stand-Alone Paper
Towards a New Vision of PCK for the 21st Century: Knowing How to Teach Science
Vanessa Kind*, University of Leeds, United Kingdom
Jonathan Osborne, Stanford University, USA

Stand-Alone Paper
Speculative Designs: Reimagining Teaching and Learning Climate Change in a Middle School Classroom
Kaylee Laub*, University of California, Santa Barbara, USA
Jeanice Trat, University of California, Santa Barbara, USA

Stand-Alone Paper
Student Epistemic Curiosity and Curiosity-Focused Teacher Training: Enhancing Engagement and Achievement in Middle School Science
Yu Ye*, arizona state University, USA
Carlos Meza-Torres, arizona state University, USA
jongchan park, arizona state University, USA
ying-chih chen, arizona state University, USA
michelle Jordan, arizona state University, USA

Supporting Effective STEM and Engineering Instruction in Elementary Classrooms

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
21-Apr-26, 8:15-9:45
Location: Juniper (L2)

Stand-Alone Paper
Impacts of Professional Learning on Rural Elementary School Teachers' Enactment of Student Agency
Rasha Elsayed, WestEd, USA
Meghan Macias*, WestEd, USA
Min Lee, University of North Dakota, USA
Ashley Iveland, WestEd, USA
Ryan Summers, University of North Dakota, USA

Stand-Alone Paper
Examining rural elementary teachers' planning and implementation of science and engineering practices within engineering lessons
Jenna Gist*, Purdue University, USA
Rebekah Hammack*, Purdue University, USA
Min Lee*, University of North Dakota, USA
Lauren Cabrera, Purdue University, USA

Stand-Alone Paper
Storybooks as Bridges: Teaching Nature of Engineering Concepts in Primary Grades
Emine Sahin-Topalcengiz*, Mus Alparslan University, Turkey
Cemile Yalc'n, Ministry of Education, Turkey

Engaging Students in Socioscientific Reasoning and Science Practices

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
21-Apr-26, 8:15-9:45
Location: Cedar AB (L2)

Stand-Alone Paper

Convergence Between Responsive Instruction and Science Practices: Insights from Biology Classrooms with Multilingual Learners

Niki Koukoulidis, University of Florida, USA
Rei Taklal*, University of Florida, USA
Julie Brown, University of Florida, USA

Stand-Alone Paper

Integrating scientific and socio-scientific models in addressing socio-scientific issues: A new pedagogical framework

Zeyu Han*, The University of Hong Kong, China
Chen Chen, The University of Hong Kong, China
Kejian Qiu, University of Warwick, United Kingdom
Qinger Song, Hangzhou Yinhu Experimental School, China

Stand-Alone Paper

Anal"ing Grade 6–8 students' socioscientific reasoning and its links to epistemic beliefs

Chengji Luo, Beijing Normal University, China
Hongyan Zhao, Beijing Normal University, China
Jing Lin, Beijing Normal University, China
Mei-Hung Chiu, Taiwan Normal University, Taiwan

Representations, Resources, and Participation in STEM Learning

Strand 5: College Science Teaching and Learning (Grades 13-20)
21-Apr-26, 8:15-9:45
Location: Willow B (L2)

Stand-Alone Paper

Linking Visual Transition to Mental Model Quality: Coordinating Triple Representations in Chemistry Learning

Sylvia Faustine*, National Taiwan University of Science and Technology, Taiwan
Chia-Yu Wang, National Taiwan University of Science and Technology, Taiwan
Sufen Chen, National Taiwan University of Science and Technology, Taiwan

Stand-Alone Paper

The Four I's of Resistance: Tracing Resistance Capital Across Physics and Astronomy Classrooms

Reina Howell, San Francisco State University, USA
Khanh Tran*, Utah State University, USA
Kim Coble, San Francisco State University, USA
Alegra Eroy-Reveles, University of California, Santa Cruz, USA

Stand-Alone Paper

The Utility of Students' Intuitive Resources: Addressing the Tension of Framing Student Ideas as "Unproductive"

Ryan Bowen*, Michigan State University, USA
Nicole Becker, Michigan State University, USA

Stand-Alone Paper
Department Cultural Supports and Barriers for Biology Graduate Student Teaching Professional Development: A Delphi Study
Grant Gardner*, Middle Tennessee State U, USA
Eric Akuoko, St. John's U, USA
Gili Marbach-Ad, U of Maryland, USA
Kristen Miller, U of Georgia, USA
Elisabeth Schussler,U Tennessee Knoxville, USA

Family Learning & Science at Home
Strand 6: Science Learning in Informal Contexts
21-Apr-26, 8:15-9:45
Location: Seneca (L4)

Stand-Alone Paper
Family STEM conversations as community sustaining pedagogy
Cory Buxton*, Oregon State University, USA
Diana Crespo Camacho*, Oregon State University, USA

Stand-Alone Paper
The Family Science Wealth Survey: Development of a Survey to Learn About Families and Science
Julianne Wenner, Clemson University, USA
Christy Brown*, Clemson University, USA

Stand-Alone Paper
A Study on the Design Mobile Learning to Promote Family Learning in Botanical Gardens
Xianqing Bao*, Shanghai Normal University, China
Yue Qian, Shanghai Songjiang District She Shan Foreign Language Experimental School, China

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Innovations in Developing Science Teachers' Competencies
Strand 7: Pre-service Science Teacher Education
21-Apr-26, 8:15-9:45
Location: Boren (L4)

Stand-Alone Paper
A novel mind map to reveal what concepts pre-service science teachers associate with "system"
Nazmiye Ertugrul, Bogazici University, Turkey
Beril Genc, Bogazici University, Turkey
Burak Aricioglu, Balikesir University, Turkey
Emre Goktepe, Systems Thinking Association, Turkey
Burcu Gungor Cabbar*,Balikesir University, Turkey
Gaye Ceyhan, Bogazici University, Turkey

Stand-Alone Paper
Advancing Modeling Competence: A Systematic Review of Interventions for Pre-Service and In-Service Science Teachers
Adam Tricomo*, University of Georgia, USA
Daniel Capps, University of Georgia, USA
Jonathan Shemwell, University of Alabama, USA

Stand-Alone Paper
From Sprint to Success: Implementing Scrum in Higher Education
Dirk Brockmann-Behnsen*, Leibniz University Hannover, Germany

Stand-Alone Paper
Pre-Service Teachers' Understanding of Systems Thinking Characteristics
Ihsan Ghazal*, Boston University, USA
Hayat Hokayem, Texas Christian University, USA

Understanding the richness of student languages and cultures

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 8:15-9:45
Location: Ballard (L3)

Stand-Alone Paper
What Do We Mean by Culture? An Analysis of Teacher Talk
Minjung Ryu*, University of Illinois Chicago, USA
Roshni Bano, University of Illinois Chicago, USA
Mee Na Feng, University of Illinois Chicago, USA
Fatemeh Alipour, University of Illinois Chicago, USA

Stand-Alone Paper
Multilingual Learners' Multimodal Negotiation in College Science Discourse
Adeesha Jayathilaka*, University of Illinois Chicago, USA
Margaret Jeong, University of Illinois Chicago, USA
Minjung Ryu, University of Illinois Chicago, USA

Stand-Alone Paper
Reimagining Refugee Youth and Parents' STEM Aspirations and College Readiness Through an Enrichment Program.
Mohammed Ibrahim*, Arizona State University, USA
Eugene Judson*, Arizona State University, USA

Disrupting Essentialism and Advancing Equity in a Time of Rising Authoritarianism

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 8:15-9:45
Location: Ravenna C (L3)

Symposium
Disrupting Essentialism and Advancing Equity in a Time of Rising Authoritarianism
Quentin Sedlacek, Southern Methodist University, USA
KT Doerr*, Malmö University, Sweden
Sarah Eddy, University of Minnesota, USA
Gareth Gingell, University of Northern Colorado, USA
Tatiane Russo-Tait, University of Georgia, USA
Daniel Soodjinda, California State University Stanislaus, USA
Brie Tripp, University of California Davis, USA
Taylor Pierce, Gender-Inclusive Biology, USA

Teacher AI Use, AI Literacy, & Teacher Reasoning

Strand 12: Technology for Teaching, Learning, and Research
21-Apr-26, 8:15-9:45
Location: Jefferson B (L4)

Stand-Alone Paper
Nueroadaptive AI using Brain Computer Interfaces for Science Text Accessibility
Richard Lamb*, University of Georgia, USA
Danielle Malone, Purdue University, USA
Tosha Owens, East Carolina University, USA
Ikseon Choi, Emory University, USA
Shruti Kundu, University of Georgia, USA

Stand-Alone Paper
Applying the PCK Framework to Educators' Analysis of AI-Generated STEM Problems
Stephen Trembath-Reichert*, North Carolina State University, USA
Cesar Delgado, North Carolina State University, USA
Brayan Diaz, Utah State University, USA

Stand-Alone Paper
K-12 Science Teachers' GenAI Use as Situated in their School Contexts and Pedagogical Orientations
Drew Nucci*, WestEd, USA
Joshua Rosenberg*, University of Tennessee - Knoxville, USA
Sarah Nielsen, WestEd, USA

Stand-Alone Paper
How Science Teachers Use AI: A Descriptive Portrait from a National Survey
Zhen Xu*, University of Tennessee, Knoxville, USA
Joshua Rosenberg*, University of Tennessee, Knoxville, USA
Shawon Sarkar, University of Washington, USA
Lief Esbenshade, University of Washington, USA
Drew Nucci, WestEd, USA
Sarah Nielson, WestEd, USA
Ann Edwards, WestEd, USA
Alex Liu, University of Washington, USA
Zewei (Victor) Tian, University of Washington, USA
Zachory Zhang, Colleague.AI, USA
Min Sun, University of Washington, USA

Epistemic practices and socioscientific issues

Strand 13: History, Philosophy, Sociology, and Nature of Science
21-Apr-26, 8:15-9:45
Location: Virginia (L4)

Stand-Alone Paper
The way from science education to informed decision-making is paved by epistemic humility
Ayelet Baram-Tsabari*, Technion - Israel Institute of Technology, Israel
Yael Rozenblum, Technion - Israel Institute of Technology, Israel

Stand-Alone Paper
Beyond Building: Teacher Discourse and the Development of Elementary Students' Epistemic Engineering Practices
Zoubeida Dagher*, University of Delaware, USA
Maisha Mouli, University of Delaware, USA
Jennifer Gallo-Fox, University of Delaware, USA

Faezeh Vahdat Nia, University of Delaware, USA
Tyler Van Buren, University of Delaware, USA

Stand-Alone Paper
Students' identities as a precursor to accuracy reasoning orientations and evidence evaluation in socioscientific contexts
Jenny Dauer*, University of Nebraska-Lincoln, USA
Rachel Waring-Sparks, Illinois State University, USA
William Romine, Wright State University, USA
Gale Sinatra, University of Southern California, USA

Reasoning, Agency, and Inquiry in Socioscientific and Climate Issues
Strand 14: Environmental Education and Sustainability
21-Apr-26, 8:15-9:45
Location: Jefferson A (L4)

Stand-Alone Paper
Integrating Artificial Intelligence into Gene Editing: A Controversy Mapping Approach to Students' Socio-Scientific Reasoning
Yi-Ning Huang*, Graduate Institute of Science Education, National Taiwan Normal University, Taiwan
Shiang-Yao Liu, Graduate Institute of Science Education, National Taiwan Normal University, Taiwan

Stand-Alone Paper
Knowledge, Reasoning, and Confidence: Developing an Instrument to Assess Understanding of Socioscientific Issues
Melike Hanedar, University of Maryland, USA
Janelle Bailey*, Temple University, USA

Stand-Alone Paper
Inquiry-based climate change education: Kindergarten teachers' enactments of scientific, personal and social inquiry
Jingwen Song*, University of Southampton, United Kingdom
Andri Christodoulou, University of Southampton, United Kingdom
Wonyong Park, University of Southampton, United Kingdom

Sandra K. Abell Institute for Doctoral Students Poster Symposium
21-Apr-26, 8:15-9:45
Location: Redwood AB (L2)

Administrative Session

Organizers
Christa Haverly, Chicago Public Schools, Chicago, IL, USA
Jason Buell, Northwestern University, Evanston, IL, USA
Brian Reiser, Northwestern University, Evanston, IL, USA
Yang Zhang, Northwestern University, Evanston, IL, USA

Contributors
Bolaji Bamidele, Utah State University
Jessica Bautista, University of Michigan
Linsey Brennan, Michigan State University
Brandi Cannon-Force, Stanford University
Bradley Davey, Northwestern University

Genelle Diaz-Silveira, Boston University
Ruth Edri, Technion Israel Institute of Technology

Spencer Eusden, University of Nevada
Sarah Fogelman, Boston College
Alejandra Frausto Aceves, Northwestern University
Leticia Garza, University of Texas at Austin
Loraine Glidewell, University of Colorado Boulder
Daisy Haas, University of Michigan
Nicholas Leonardi, University of Illinois Urbana-Champaign
Josh Modeste, Teachers College, Columbia University
Joshua Mogyoros, University of Toronto
Eva Nelson, University of Minnesota Twin Cities
Kyle Nolting, University of Denver
Adepeju Prince, Kent State University
Muhammad Guntur Purwanto, University of Minnesota Twin Cities
Ester Shinana, Rhodes University
Clara Smith, Brigham Young University
Jamie Steiner, University of North Carolina at Chapel Hill
Matt Stewart, University of Washington
Stephanie Tracey, Clemson University
Grace Tukurah, Michigan State
Jasmyne Yeldell, University of North Carolina at Chapel Hill
Hannah Ziegler, Vanderbilt University
Jill Zipperer, Texas State University
Faith Zondi, Witwatersrand University

Quality Peer Review: Training with the Journal of Ethnographic and Qualitative Research

21-Apr-26, 8:15-9:45
Location: Willow A (L2)

Administrative Session

Organizers
Brock Couch, Baltimore County Public Schools, USA
Sabrina Stanley, University of Northern Alabama, USA

Contributors
Amy Barry, University of Nebraska-Lincoln, USA
Justin Andersson, University of Nebraska at Omaha, USA
Le Kang, Gardner-Webb University, USA
Paige Hespe, University of Nebraska-Lincoln, USA

Advancing AI in Science Education (AASE): Envisioning Responsible and Ethical Practice

21-Apr-26, 8:15-9:45
Location: Aspen (L2)

Administrative Session

Organizers
Xiaoming Zhai, University of Georgia, USA
Joe Krajcik, Michigan State University
Kent Crippen, University of Florida, USA

Contributors
Lei Liu, ETS, USA
Ross Nehm, Stony Brook University, USA
Gyeong-Geon Lee, Nanyang Technological University
Jamie Mikeska, ETS, USA

Xiufeng Liu, University of Macao, China
Marcus Kubsch, Free University Berlin, Germany
Kevin Haudek, Michigan State University, USA
Knut Nuemann, Leibniz Institute for Science and Mathematics Education
Okhee Lee, New York University, USA
Yizhu Gao, University of Georgia, USA

What is in a Name? Problematizing Terminology in Educational Research and Praxis

21-Apr-26, 8:15-9:45
Location: Issaquah AB (L3)

Administrative Session

Organizers

Miriam Ortiz, The University of Texas Rio Grande Valley, USA
Alejandro Gallard, Georgia Southern University, USA
Enrique Suarez, University of Massachusetts, Amherst, USA
Alexander Eden, Salem State University, USA
Uma Ganesan, The University of Texas Rio Grande Valley, USA
María González-Howard, The University of Texas at Austin, USA
Angela Chapman, The University of Texas Rio Grande Valley, USA

Contributors

Uma Ganesan, The University of Texas Rio Grande Valley, USA
Angela Chapman, The University of Texas Rio Grande Valley, USA
María González-Howard, The University of Texas at Austin, USA
Enrique Suarez, University of Massachusetts, Amherst, USA
Alejandro Gallard, Georgia Southern University, USA
Miriam Ortiz, The University of Texas Rio Grande Valley, USA
Alexander Eden, Salem State University, USA

Interdisciplinary Thinking and the Development of STEM Identity

Strand 2: Science Learning: Contexts, Characteristics and Interactions
21-Apr-26, 10:00-11:30
Location: Columbia (L4)

Stand-Alone Paper

Students' Interest in Physics - An Exploratory Quantitative Study

Hermann Lidberg*, Institute for Physics Didactics - Goethe University Frankfurt am Main, Germany
Roger Erb, Institute for Physics Didactics - Goethe University Frankfurt am Main, Germany

Stand-Alone Paper

STEM identity and STEM career intention: A meta-analysis

Zhimeng Jiang*, University of Macau, Macao
Xiaowei Tang, University of Macau, Macao
Lihua Tan, University of Macau, Macao
Bing Wei, University of Macau, Macao

Stand-Alone Paper

A Study on Cultivating Students' Interdisciplinary Thinking in Chemistry Teaching

Shaoke ZHANG, Shandong Normal University, China
Shanshan LU*, Shandong Normal University, China

Stand-Alone Paper
Influence of Disposition toward Scientific Uncertainty Navigation and Epistemic Curiosity on Students' Learning Engagement
Bukola Akinbadewa*, Arizona State University, USA
Ying-Chih Chen, Arizona State University, USA
Michelle Jordan, Arizona State University, USA
Jongchan Park, University of Georgia, USA
Carlos Meza-Torres, Arizona State University, USA

Young Learners, Big Questions: Multiple Lenses for Understanding Early Science Education within a Single Program

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
21-Apr-26, 10:00-11:30
Location: Juniper (L2)

Related Paper Set
From Nature Walks to Bloomz Posts: How Preschool Educators Communicate about Science with Families
Tamara Turski*, University of Delaware, USA

Related Paper Set
Engaging Two- and Three-year-olds in Science and Engineering: A Case-Study
Subrina Niranjan*, University of Delaware, USA
Jennifer Gallo-Fox, University of Delaware, USA
Maisha Mouli, University of Delaware, USA
Ariadni Kouzeli, University of Delaware, USA

Related Paper Set
Splish, splash, squish, crack: Young children explore water concepts through play-based learning
Maisha Farzana Mouli*, University of Delaware, USA
Subrina Niranjan, University of Delaware, USA
Jennifer Gallo-Fox, University of Delaware, USA
Ariadni Kouzeli, University of Delaware, USA

Related Paper Set
Interdisciplinary science and creative arts instruction in a nature-based preschool classroom
Ariadni Kouzeli*, University of Delaware, USA
Jennifer Gallo-Fox, University of Delaware, USA

AI and Computational Tools Transforming Science Learning

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
21-Apr-26, 10:00-11:30
Location: Cedar AB (L2)

Stand-Alone Paper
ChatGPT-Generated Socioscientific Issues in the Context of Systems Thinking: Affordances and Limitations

Wardell Powell*, Framingham State University, USA
Steven Courchesne*, Framingham State University, USA
Dana Zeidler*, University of South Florida, USA

Stand-Alone Paper

Potential of ChatGPT to promote health and assessment literacy among students with regard to e-cigarettes

Helena Aptyka*, Institute for Biology Education, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany
Alessio Ciaccia, Institute for Biology Education, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany
Kirsten Schlüter, Institute for Biology Education, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany
Jörg Großschedl, Institute for Biology Education, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany

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Culturally Informed STEM Instruction

Strand 5: College Science Teaching and Learning (Grades 13-20)
21-Apr-26, 10:00-11:30
Location: Willow B (L2)

Stand-Alone Paper

When Stories Belong, Students Belong: A Quantitative Study of Culturally Responsive Teaching in Introductory Biology

Hannah Gill*, California State University, Fresno, USA
Emily Walter, California State University, Fresno, USA

Stand-Alone Paper

A Meta-Analysis of Culturally Relevant, Responsive, and Sustaining Pedagogies in Higher Education Classrooms

Vivian Nguyen*, California State University, Fresno, USA
Alexa Valdez*, California State University, Fresno, USA
Allison Vang*, California State University, Fresno, USA
Danielle Vu*, California State University, Fresno, USA
Anna Lee, California State University, Fresno, USA
Emily Walter, California State University, Fresno, USA

Stand-Alone Paper

The Conceptualizations and Enactments of Culturally-Informed Pedagogies among Higher Education Biology Instructors

Angelita Rivera*, Stanford University, USA
Shima Salehi, Stanford University, USA

Learning Through Play, Games & Immersive Experiences

Strand 6: Science Learning in Informal Contexts
21-Apr-26, 10:00-11:30
Location: Seneca (L4)

Stand-Alone Paper

Adult gamers' problem-solving, science, and mathematics experiences when playing Baldur's Gate 3 – a recreational game

Gina Childers*, Texas Tech University, USA

Stand-Alone Paper

Students' development of understanding of SEPs and STEM-related behaviors: An exploratory study

Su Gao*, University of Central Florida, USA
Shiva Jahani, University of Central Florida, USA

Stand-Alone Paper

Reasoning in Levels: Facilitating Systems Thinking Skills in Science through Embodiment

Yetunde Mabadeje*, University of Iowa, USA
Kay Ramey, University of Iowa, USA

Noticing, Talk, and Discourse in Preservice Preparation

Strand 7: Pre-service Science Teacher Education
21-Apr-26, 10:00-11:30
Location: Boren (L4)

Stand-Alone Paper

Becoming a Caring Mentor: An Evolution of One Pre-Service Teacher's Perceptions of Science Classroom Discourse

Emelia Pelliccio*, Teachers College, Columbia University, USA
Felicia Mensah, Teachers College, Columbia University, USA

Stand-Alone Paper

A Digital Video Ethnography Exploring Teacher Candidates' Radical Listening to Understand and Value Learners' Standpoints

Adam Devitt*, California State university, Stanislaus, USA

Stand-Alone Paper

Putting Noticing Into Practice - Pre-Service Teachers' Efforts to Enact Instruction Centered Around Students

Heather Johnson*, Vanderbilt University, USA
Tara Barnhart*, Chapman University, USA
Miray Tekkumru-Kisa*, University of Illinois, USA

Stand-Alone Paper

Teacher Candidate Noticing during a Video Analysis Task within Science Methods Courses Across Four Universities

Anna Arias*, Kennesaw State University, USA
Emilia Pelliccio*, Teachers' College, USA
Heather Johnson, Vanderbilt University, USA
Jessica Riccio, Teachers' College, USA
Lawrence Escalada, University of Northern Iowa, USA
Brett Criswell, West Chester University, USA
Michelle Forsythe, Texas State University, USA
Joshua Ellis, Louisana State University, USA

Exploring science teacher change across multiple dimensions

Strand 8: In-service Science Teacher Education
21-Apr-26, 10:00-11:30
Location: Issaquah AB (L3)

Stand-Alone Paper
Exploring Science Teachers' Attribution for Student Performance, Self-Evaluation, and Sources and Justification of Pedagogical Decision-Making
Grace Wan-Yue Zhan, National Taiwan Normal University, Taiwan
Fang-Ying Yang*, National Taiwan Normal University, Taiwan

Stand-Alone Paper
Noticing Inclusion in Argumentation: New Science Teachers' Perspectives on Classroom Discourse
Althea Roy*, Clemson University, USA
Meredith Schwendemann*, Binghamton University, USA
Xinyu He, University of Georgia, USA
Ella Yonai, Auburn University, USA
Julie Luft,University of Georgia, USA
Brooke Whitworth, University of South Carolina, USA

Stand-Alone Paper
Leveraging Scientific Resources to Empower Teacher Professional Development in China
Fangfang Zhao*, East China Normal University, China

Stand-Alone Paper
Comparative Case Study of Resource Use by Newly Hired Science Teachers Across Linguistic Classroom Settings
Paulo Augusto Carneiro Loureiro*, University of Georgia, USA
Emily Adah Miller, University of Georgia, USA
Ella Yonai, Auburn University, USA
Julie A. Luft, University of Georgia, USA
Shannon L. Navy, Kent State University, USA

Transgressing Boundaries Between Engineering Education, Multilingual Learners, and Community: Lessons from a Project's Creative Solutions

Strand 8: In-service Science Teacher Education
21-Apr-26, 10:00-11:30
Location: Willow A (L2)

Symposium
Transgressing Boundaries Between Engineering Education, Multilingual Learners, and Community: Lessons from a Project's Creative Solutions
Jerome Shaw, University of California, Santa Cruz, USA
Kirsten Daehler, WestEd, USA
Okhee Lee*, New York University, USA
Ashley Iveland, WestEd, USA
Nico Janik,WestEd, USA
Meghan Macias, WestEd, USA
Tanya Warren, WestEd, USA
Diana Aquilizan, San Diego Unified School District, USA
Paola Paz Soldan, Capistrano Unified School District, USA

Design Approaches for the Crossroads of STEM and the NGSS

Strand 10: Curriculum and Assessment
21-Apr-26, 10:00-11:30
Location: Capitol Hill (L3)

Related Paper Set
"Thinking Like a Kid" in STEM Curriculum Design: A Framework for Student Hat for Design
Daniel Voss*, Northwestern University, USA

Related Paper Set
Using Student Voice to Develop an Integrated STEM End-of-Unit Activity
Nicole Vick*, Northwestern University, USA
Michael Novak, Northwestern University, USA

Related Paper Set
Designing for Meaningful Integration of Computer Science in Storyline-Based Science Units
Tiffany Neill*, University of Central Oklahoma, USA
Brian Reiser*, Northwestern University, USA

Related Paper Set
What is a model in an integrated STEM and NGSS space?
Michael Novak*, Northwestern University, USA
Daniel Voss, Northwestern University, USA

Exploring science teaching through language ideological lenses

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 10:00-11:30
Location: Ballard (L3)

Stand-Alone Paper
Toward a culturally sustaining Third Space for Chinese international students
Ying Yeung (preferred name: Yeung) Tang*, Vanderbilt University, USA
Jessica Watkins, Vanderbilt University, USA

Stand-Alone Paper
Science Teachers' Language Ideologies: Initiating Spaces for Linguistically Responsive Teaching and Teacher Education
Sara Salloum*, Ohio University, USA
Saouma BouJaoude*, American University of Beirut, Lebanon
Rana Baddour*, American University of Beirut, Lebanon
Danielle Dani, Ohio University, USA

Stand-Alone Paper
Exploring notions of language and language-in-use in science teacher noticing
Nazia Tasnim*, University of Texas at Austin, USA
María González-Howard*, University of Texas at Austin, USA
Leticia Garza*, University of Texas at Austin, USA

Stand-Alone Paper
From Monoglossic to Heteroglossic: A Teacher-Specialist Ideological Shifts with Translanguaging in a Dual-Language Science Classroom
Yernat Mnuar*, University of Houston, USA
Jie Zhang*, University of Houston, USA

AI in support of developing, using and scoring 3D assessments

Strand 12: Technology for Teaching, Learning, and Research
21-Apr-26, 10:00-11:30
Location: Jefferson B (L4)

Related Paper Set
Leveraging Generative AI to Detect Uncertainty
Namsoo Shin*, Michigan State University, USA
Xunlei Qian, Michigan State University, USA
Cory Miller, Michigan State University, USA
Joseph Krajcik, Michigan State University, USA
Yue Xing, Michigan State University, USA

Related Paper Set
Exploring Object Recognition Approaches to Anal"e Students' Draw Models
Mao-Ren Zeng*, Michigan State University, CREATE for STEM Institute, USA
Kevin Haudek, Michigan State University, CREATE for STEM Institute, USA
Leonora Kaldaras, University of Houston College of Education, USA
Joseph Krajcik, Michigan State University, CREATE for STEM Institute, USA

Related Paper Set
Optimizing AI Scoring of Scientific Explanations: Exploring Augmentation Strategies with Fine-Tuned Transformers
Prudence Djagba*, Michigan State University, USA
Kevin Haudek, Michigan State University, USA
Clare G.-C Franovic, Michigan State University, USA
Leonora Kaldaras, Texas Tech University College of Education, USA

Related Paper Set
Using generative AI to score students' quantitative knowledge-in-use about energy
Knut Neumann*, IPN-Leibniz-Institute for Science and Mathematics Education, Germany
Weiwei He, Michigan State University, USA
Yucheng Chu, Michigan State University, USA
Jiliang Tang, Michigan State University, USA

Understanding Science in the Age of AI: Interfaces Between Epistemology, Ethics, and NOS Education

Strand 13: History, Philosophy, Sociology, and Nature of Science
21-Apr-26, 10:00-11:30
Location: Virginia (L4)

Symposium
Understanding Science in the Age of AI: Interfaces Between Epistemology, Ethics, and NOS Education
Kerstin Kremer, Justus Liebig University, Germany

Wonyong Park, University of Southampton, United Kingdom
Douglas Allchin, University of Minnesota, USA
Marcus Kubsch*, Freie Universität Berlin, Germany
Tingting Li*, Washington State University, USA
Peng He, Washington State University, USA
Elvira Schmidt, Justus Liebig University, Germany
Sara Satanassi, University of Bologna, Italy
Olivia Levrini, University of Bologna, Italy
Martina Caramaschi, University of Bologna, Italy
Emily Reigh, University of California, USA
Xinyu He, University of Georgia, USA
Holly Amerman, University of Georgia, USA
Emily Adah Miller, University of Georgia,

Youth and Teacher Agency in Designing Just and Sustainable Futures

Strand 14: Environmental Education and Sustainability
21-Apr-26, 10:00-11:30
Location: Jefferson A (L4)

Stand-Alone Paper

Exploring Science Teachers' Agency in SSI instruction: Focusing on Tensions and Praxis

Jiwon Kong*, Ewha Womans University, Korea, Republic of
Sohyun Jeon, Ewha Womans University, Korea, Republic of
Hyunju Lee, Ewha Womans University, Korea, Republic of

Stand-Alone Paper

Examining Youth Authority Throughout Community Interview in the Co-Design of an Environmental Engineering Curriculum

Yuxi Huang*, University of California, Irvine, USA
Aakriti Bisht, University of California, Irvine, USA
Rossella Santagata, University of California, Irvine, USA
Symone Gyles, University of California, Irvine, USA
Taryn Williams,University of California, Irvine, USA
Teresa Hackey, University of California, Irvine, USA
Hosun Kang, University of California, Irvine, USA
Jennifer Long, University of California, Irvine, USA
Sara Ludovise, Orange County Department of Education, USA
Erick Valdez, Orange County Department of Education, USA

Climate Justice Education Designed and Sustained Through Large-Scale Networked Transformation Communities

Strand 15: Policy, Reform, and Program Evaluation
21-Apr-26, 10:00-11:30
Location: Greenwood (L3)

Related Paper Set

Teacher Preparation for What Worlds? A Review of Climate Change Education in Pre-service Teacher Learning

Kelsie Fowler*, University of Washington, USA
Ximena Gallegos*, University of Washington, USA

Bud Bong*, University of Washington, USA
Philip Bell, University of Washington, USA

Related Paper Set
Understanding the Critical and Political Frames in a Co-Designed State-level Climate Justice Teacher Educator Network
Philip Bell*, University of Washington, USA
Kelsie Fowler, University of Washington, USA
Deb Morrison*, University of Washington, USA

Related Paper Set
Mapping Climate Change Education: Reflections from an Education Design-BasedResearch Project from Northern British Columbia, Canada
Hartley Banack*, University of Northern British Columbia, Canada

Related Paper Set
Re Envisioning Climate and Environmental Education in California for Thriving Futures
Asli Sezen-Barrie*, University of California, USA
Bailey McCraner*, University of California, USA

Related Paper Set
Co-Designing Communities for Place-Responsive Science and Collective Changemaking: Reflections from a Multi-Year Professional Learning Model
Jordan Sherry-Wagner*, University of Washington Bothell, USA

Jhumki Basu Scholars Poster Symposium

21-Apr-26, 10:00-11:30
Location: Redwood AB (L2)

Administrative Session

Organizers
Khanh Tran, Utah State University, Logan, UT, USA
Iliana De La Cruz, Texas Higher Education Coordinating Board, Texas
Regina McCurdy, University of North Carolina Charlotte, NC, USA

Basu Scholars
Arya Karumanthra, Indiana University
Grace Tukurah, Michigan State University
Destinee Cooper, Clemson University
Safron Milne, University of Michigan
Joshua Modeste, Columbia University
Jasmyne Yeldell, University of North Carolina
Melinda Lopez, University of Colorado Boulder
Karin Mason, Georgia State University
John Ojeogwu, Texas State University
Katarzyna Pomian Bogdanov, Northwestern University
Mahati Kopparla, University of Pittsburg
Jill Zipperer, Texas State University
Maximilan (Max) Sherard, University of North Texas
Victor Leos, University of Colorado Boulder
DeNae Kizys, University of South Carolina

NARST Connects

21-Apr-26, 10:00-11:30
Location: KIrkland (L3)

Discussion Session

Developing Modeling and Computational Thinking

Strand 1: Science Learning: Development of student understanding
21-Apr-26, 12:45-14:15
Location: Ravenna C (L3)

Stand-Alone Paper
Developing and evaluating meta-modeling knowledge in 7th graders: A Mixed Methods study
Manav Sharma*, University of Miami, USA
Ji Shen, University of Miami, USA
Valeria Quintero, University of Miami, USA
Arlette Perry, University of Miami, USA
David Xiong, University of Miami, USA
Amylia Wiesner, University of Miami, USA

Stand-Alone Paper
T/E Design Based Biotechnical Learning: Inherent and Imposed Cognitive Demands
John Wells*, Virginia Tech, USA

Stand-Alone Paper
From Code to Chloroplasts: Speaking About Photosynthesis through Computational Modeling
Tamar Fuhrmann, Teachers College Columbia University, USA
Brendan Henrique*, University of California, Berkeley, USA
Adelmo Eloy, Teaches College, Columbia University, USA
Leah Rosenbaum, Teaches College, Columbia University, USA
Aditi Wagh,Massachusetts Institute of Technology, USA
Paulo Blikstein, 1. Teachers College, Columbia University, USA
Michelle Wilkerson, University of California, Berkeley, USA

Stand-Alone Paper
LLM-based Agents in Virtual Scientific Inquiry: Effects on Concepts, Motivation and Learning Strategies, and Thinking
Yaning Zhao*, School of Educational Technology, Beijing Normal University, China
Yafeng Zheng, Center for Educational Technology, Beijing Normal University, China

Transforming Teaching and Learning through Pedagogical Interventions

Strand 5: College Science Teaching and Learning (Grades 13-20)
21-Apr-26, 12:45-14:15
Location: Willow B (L2)

Stand-Alone Paper
Faculty-Learning Assistant Partnerships as a Catalyst for Pedagogical Change
Monsour Zakariyah*, Middle Tennessee State University, USA
Tomi Mafe, Middle Tennessee State University, USA
Kathryn Hosbein, Middle Tennessee State University, USA

Stand-Alone Paper
Intentional Teaching Gestures Increase Student Outcomes in Anatomy and Physiology
Stephanie Wallace*, Texas Christian University, USA
Hayat Hokayem, Texas Christian University, USA

Stand-Alone Paper
Incorporation of Real-World Experiences in Faculty's Instructional Planning in Context of a Professional Development Institute
S. M. Mushfiquer Rahman Ashique*, University of Massachusetts Dartmouth, USA
Stephen Witzig*, University of Massachusetts Dartmouth, USA

Stand-Alone Paper
Labor-Based Grading in Physics: Perceptions of Control, Value, and Engagement
Thanh Le*, Western Washington University, USA
J. Speirs, University of North Florida, USA
Vicki Retzer, Western Washington University, USA
Gracie Deerwester, Western Washington University, USA

Youth Identity Development in STEM

Strand 6: Science Learning in Informal Contexts
21-Apr-26, 12:45-14:15
Location: Seneca (L4)

Stand-Alone Paper
Exploring STEM Identity through Informal STEM Activities and Culturally Relevant Literature
Karen Collier*, Augusta University, USA
Wayne Hickman, Augusta University, USA
Elizabeth VanDeusen, Augusta University, USA
Katherine Barker, Augusta University, USA

Stand-Alone Paper
Reimagining CT and STEM Learning with Neurodivergent Youth Through Rightful Presence and Pedagogies of Play
K. Mendoza*, University of Nebraska at Omaha, USA
Yupei Duan*, University of Missouri, USA
Tanya Churaman*, University of Missouri, USA
David Ogundairo*, University of Georgia, USA
Noah Glaser*,University of Missouri, USA
Lucas Jensen*, Georgia Southern University, USA
Amanda Olsen, University of Missouri, USA
Matthew Schmidt*, University of Georgia, USA
Erica Carlson-Moudry, University of Nebraska at Omaha, USA

Stand-Alone Paper
Let-Me-See, Can-I-Be, and This-is-Me: Identity Play Versus Identity Work in Informal Science Learning Settings
Heidi Carlone*, Vanderbilt University, USA
Hannah Ziegler, Vanderbilt University, USA
Lauren Connelly, Vanderbilt University, USA
Gabriel Carlone, Vanderbilt University, USA
Alison Mercier,University of Wyoming, USA

Stand-Alone Paper
Youth Translating the STEM Bikes and Biking Ecosystem Through Friendship, Ownership, History, and Joyful Play
Noemi Waight*, University at Buffalo, USA
Ryan Rish, University at Buffalo, USA
Jennifer Tripp, SUNY Geneseo, USA

Stacy Scheunemann, University at Buffalo, USA
Fatemeh Mozaffari,University at Buffalo, USA
Finn Goehrig, University at Buffalo, USA
David Jackson, School, USA
Darryl Rodam Marks, East Side Bike Club, USA

Understanding How Instructional Vision, Attitudes, and Beliefs Shift Through Preservice Science Teacher Preparation

Strand 7: Pre-service Science Teacher Education
21-Apr-26, 12:45-14:15
Location: Boren (L4)

Stand-Alone Paper
Drawing Science Teaching: Tracing Shifts in Preservice Teachers' Instructional Visions
Kristin Chisholm*, University of Delaware, USA

Stand-Alone Paper
Changes in Pre-service Science Teachers' Attitudes toward Science Teaching through a Laboratory Microteaching Experience
Betul Ekiz Kiran*, Tokat Gaziosmanpasa University, Turkey
Dekant Kiran, Tokat Gaziosmanpasa University, Turkey

Stand-Alone Paper
Re-designed Science Methods Courses' Impacts on Elementary Pre-service Teachers' Beliefs and Attitudes for Multilingual Learners
HIEN THI Tran*, University of Houston, USA
Sissy Wong*, University of Houston, USA
Zhenjie Hou*, University of Houston, USA
Jie Zhang*, University of Houston, USA
Samuel Katende,University of Houston, USA
Maria Alexandra Walsh, University of Houston, USA
Laveria Hutchison, University of Houston, USA

Stand-Alone Paper
Preservice Science Teachers' Self-Efficacy Beliefs Regarding NGSS-Aligned Instructional Practices
Saed Sabah*, The Hashemite University, Jordan

Leveraging a Research-Practice Partnership to Support Systemic Change in a Large School District

Strand 8: In-service Science Teacher Education
21-Apr-26, 12:45-14:15
Location: Greenwood (L3)

Related Paper Set
Perspectives on Teachers' Changing Views for Earth Science Integration Into Biology, Chemistry, and Physics
Lauren Browning*, George Washington University, USA
Annie Caires, University of Montana, USA
Beth Covitt, University of Montana, USA
Jonathon Grooms*, George Washington University, USA
Alan Berkowitz, Cary Institute of Ecosystem Studies, USA
Angie Hood, Cary Institute of Ecosystem Studies, USA
Kevin Garner, Baltimore City Public Schools, USA
Ed Mitzel, Baltimore City Public Schools, USA

Related Paper Set

Evolution of Teacher Leadership within a Research-Practice Partnership

Edmund Mitzel, Jr.*, Baltimore City Public Schools, USA
Angela Hood, Cary Institute of Ecosystem Studies, USA
Alan Berkowitz, Cary Institute of Ecosystem Studies, USA
Lauren Browning, George Washington University, USA
Beth Covitt,University of Montana, USA
Kevin Garner, Baltimore City Public Schools, USA
Jonathon Grooms, George Washington University, USA
Carolyn Parker, American University, USA

Related Paper Set

Aligning District assessment resources with teachers' assessment practices and priorities to support responsive teaching

Alan Berkowitz*, Cary Institute of Ecosystem Studies, USA
Beth Covitt, University of Montana, USA
Kevin Garner, Baltimore City Public Schools, USA
Edmund Mitzel, Baltimore City Public Schools, USA
Angela Hood,Cary Institute of Ecosystem Studies, USA
Jonathon Grooms, George Washington University, USA
Lauren Browning, George Washington University, USA
Annie Caires, University of Montana, USA
David Fischer, Cary Institute of Ecosystem Studies, USA
Karen Draney, University of California at Berkeley, USA

Related Paper Set

Using the Interconnected Model of Teacher Professional Growth to Understand Changes in Classroom Practice

Jonathon Grooms*, George Washington University, USA
Lauren Browning, George Washington University, USA
Beth Covitt, University of Montana, USA
Annie Caires, University of Montana, USA
Angela Hood,Cary Institute of Ecosystem Studies, USA
Edmund Mitzel, Baltimore City Public Schools, USA
Kevin Garner, Baltimore City Public Schools, USA
Alan Berkowitz, Cary Institute of Ecosystem Studies, USA

Science identity, discourse, and ambitious teaching practices

Strand 8: In-service Science Teacher Education
21-Apr-26, 12:45-14:15
Location: Issaquah AB (L3)

Stand-Alone Paper

Strengthening Students' Science Identity: The Impact of Teacher Immersion in Defensible Learning Theories and Practices

Samantha Nevado*, Wayne State University, USA
Jazlin Ebenezer, Wayne State University, USA

Stand-Alone Paper
Network Science for Sensemaking: Exploration of Discourse Analysis in a Middle Grades Science Classroom
Sierra Morandi*, Florida State University Schools, USA
Alexander Cairns*, Florida State University, USA

Stand-Alone Paper
Culturally Ambitious Science Teaching as Joyful Transgression: Conceptual Change Across Novice and Experienced Elementary Educators
Christopher Mangogna*, University of Washington, USA

Strand 8: In-service Science Teacher Education
21-Apr-26, 12:45-14:15
Location: Issaquah AB (L3)

Stand-Alone Paper
Novice teachers' in-field and out-of-field noticing: examining the influence of professional knowledge and teaching experiences
Lu Wang*, Indiana University Kokomo, USA

Transgressing Decontextualized Science: Asset-Based Approaches to Cultural Responsiveness in Diverse Learning Environments

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 12:45-14:15
Location: Ballard (L3)

Symposium
Transgressing Decontextualized Science: Asset-Based Approaches to Cultural Responsiveness in Diverse Learning Environments
Clausell Mathis*, Michigan State University, USA
Ehud Aviran*, Michigan State University, USA
William Van Luven, Michigan State University, USA
Ozlem Akcil Okan*, Michigan State University, USA
Lucky Nonyelum*, Michigan State University, USA
John Kelly, Tennessee State University, USA
Ian Neuhart, Michigan State University, USA
Hiba Assi, University of Detroit Mercy, USA
Collette Periard, Michigan State University, USA
Joseph Krajcik, Michigan State University, USA
Barbara Schneider, Michigan State University, USA

Illuminating intersectional experiences in STEM

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 12:45-14:15
Location: Ravenna AB (L3)

Stand-Alone Paper
Intersectionality and Positioning Theory Analyses in Essays on Race
Felicia Mensah*, Teachers College, Columbia University, USA

Stand-Alone Paper
"We listen and don't judge": How Sustained Support Fostered STEM Persistence in One Participant's Journey
Jasmyne Yeldell*, University of North Carolina, Chapel Hill, USA
Anina Mahmud*, University of North Carolina, Chapel Hill, USA
Simone Wilson, University of North Carolina, Chapel Hill, USA
Dionne Cross Francis, University of North Carolina, Chapel Hill, USA

Stand-Alone Paper
"When things get hard, I'm not going to back down": Women of Color navigating STEM
Anina Mahmud*, University of North Carolina at Chapel Hill, USA
Jasmyne Yeldell*, University of North Carolina at Chapel Hill, USA
Dionne Cross Francis*, University of North Carolina at Chapel Hill, USA

AI for PBL, Teacher Support, & Classroom Simulation

Strand 12: Technology for Teaching, Learning, and Research
21-Apr-26, 12:45-14:15
Location: Jefferson B (L4)

Stand-Alone Paper
Building Teacher Confidence With AI: Scaffolding Affordable, Hands-On Experimentation
Travis Ray*, University of Nebraska-Lincoln, USA
Elizabeth Hasseler*, University of Nebraska-Lincoln, USA

Stand-Alone Paper
Development of a Generative AI Agent for Supporting Project-Based Learning Curriculum Design— Integrating Procedural Methodology
jin shen*, beijing normal university, China
xingshu ji, beijing normal university, China
shuwen yu, beijing normal university, China
rui wei, beijing normal university, China

Stand-Alone Paper
Using Multi-Student, Generative AI Teaching Simulations as Practice Spaces for Facilitating Science Discussions
Jamie Mikeska*, ETS, USA
Catherine Flynn, ETS, USA
Devon Fetrow, ETS, USA
Shreyashi Halder, ETS, USA
Tricia Maxwell,ETS, USA
Rutuja Ubale, ETS, USA
Beata Beigman Klebanov, ETS, USA
Abhilash Sarnad, ETS, USA
Sanat Singh, ETS, USA
Mengxuan Zhao, ETS, Canada

Stand-Alone Paper
Classroom Text Analytics for Math Anxiety: K-12 Evidence from Expressive Writing
Yiru Wang*, Mount Holyoke College, USA
Ruobing Zhou*, Mount Holyoke College, USA
Yiyuan Li, Reed College, USA
La Li, Mount Holyoke College, USA
Xingcen Liu,Mount Holyoke College, USA
Qinglang Liao, Mount Holyoke College, USA
Ainsley Gruener, Mount Holyoke College, USA
Katherine Binder, Mount Holyoke College, USA

How is "ancestry" conceptualized? An exploratory study

Strand 13: History, Philosophy, Sociology, and Nature of Science
21-Apr-26, 12:45-14:15
Location: Virginia (L4)

Related Paper Set
What is "ancestry"?
Kostas Kampourakis*, University of Geneva, Switzerland

Related Paper Set
How is ancestry conceptualized in the journal PLoS Genetics?
Lucie Tournayre*, University of Geneva, Switzerland
Nikolaos Tsourakis, University of Geneva, Switzerland
Nuno Galheto, University of Geneva, Switzerland
Kostas Kampourakis, University of Geneva, Switzerland

Related Paper Set
"How is "ancestry" conceptualized by pre-service biology teachers?"
Florian Stern*, University of Geneva, Switzerland
Kostas Kampourakis, University of Geneva, Switzerland

Rethinking Science Teacher Education for Climate and Ecological Responsibility

Strand 14: Environmental Education and Sustainability
21-Apr-26, 12:45-14:15
Location: Jefferson A (L4)

Stand-Alone Paper
Climate Change Educator Identity: A Multidimensional Framework for Transformative Teacher Development
Amal Ibourk*, Florida State University, USA
Sukanya Chakraborty*, Florida State University, USA
Patrick Sonde*, Florida State University, USA

Stand-Alone Paper
Navigating Epistemological Plurality: A Theoretical Framework for Interweaving Indigenous and Western Scientific Pedagogies in Climate Change Education
Amal Ibourk*, Florida State University, USA
Lore Nix, E.O. Wilson Biophilia Center, USA
Patrick Sonde, Florida State University, USA
Deb Morrison, University of Washington, USA

Stand-Alone Paper

The Role of Conceptual Learning in Biology Education for Sustainability

Ilona Södervik*, University of Helsinki, Finland
Antti Laherto*, University of Helsinki, Finland

Dilemmas in Queering STEM education research

21-Apr-26, 12:45-14:15
Location: Redwood AB (L2)

Administrative Session

Organizers
Sara Porter, UNCG, Greensboro, NC, USA

Contributors
Khanh Tran, Utah State University, Logan, UT, USA
Charlie Blake, Southern Illinois University Edwardsville, Edwardsville, IL
Aramati Casper, Colorado State University, USA
Colby Tofel-Grehl, Columbia University, New York City, NY, USA
Ronan Rock, University of Illinois Chicago, Chicago, IL, USA
Mario Suarez, Utah State University, Logan, UT, USA
Alexander Paulchell, University of Arizona, Tucson, AZ, USA

Getting Into Good Trouble: Equity and Ethics Considerations When Centering Joyful Transgression and Radical Imagination

21-Apr-26, 12:45-14:15
Location: Willow A (L2)

Administrative Session

Organizers
Scott Cohen, Lamar University, Beaumont, TX, USA
Maria Rivera Maulucci, Barnard College, New York, NY, USA
Laura Peña-Telfer, Purpose Built Schools Atlanta, Atlanta, GA, USA
Alexandria Muller, Rowan University, Glassboro, NJ, USA

Contributors
Deana Scipio, IslandWood, Bainbridge Island, WA, USA
Okhee Lee, New York University, USA
Natalie King, Georgia State University, USA
Sam Lee, California State University Long Beach, USA
Shawn Rowe, Exploratorium, USA
Jessica Hernandez, G3I Enterprises, USA

Integrating Skills, Epistemologies, and Inquiry for Critical Thinking

Strand 2: Science Learning: Contexts, Characteristics and Interactions
21-Apr-26, 14:30-16:00
Location: Columbia (L4)

Stand-Alone Paper

Analyzing Core Idea-Practice Integration in Chinese High School Chemistry Classrooms Through Chemical Thinking Perspectives

Honglu Liu*, Beijing Normal University, China

Jiuhua Hu, Beijing Normal University, China
Peng He, Washington State University, USA
Lei Wang, Beijing Normal University, China

Stand-Alone Paper
Exploring Structural Relationships among High School Students' Critical Thinking, Epistemological Beliefs, and Science Process Skills
Feral Ogan-Bekiroglu*, Marmara University, Turkey
Erol Suzuk, Marmara University, Turkey
Cansu Sivgin, Marmara University, Turkey

Stand-Alone Paper
Reflective Refinement Through Iterative Model Building
Idris Solola*, Utah State University, USA
Hillary Swanson, Utah State University, USA
Sarah Schwartz, Utah State University, USA
Rida Munir, Utah State University, USA
Jared Arnell,Utah State University, USA
Ravi Sinha, Utah State University, USA

Stand-Alone Paper
Ontoepistemologies in College-Level Socioscientific Issue Learning: A Systematic Review of Contexts and Interactions
Eric Nolan*, California State University, East Bay, USA
Syahrul Amin, Texas A&M University, USA
Jennifer Marisi, NESST, USA
Caitlyn Dixon, NESST, USA
Brandi Stroecker,NESST, USA
Kathryn Strom, California State University, East Bay, USA

Interdisciplinary Approaches to STEM and Nature-Based Learning

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
21-Apr-26, 14:30-16:00
Location: Juniper (L2)

Stand-Alone Paper
Designing and Implementing Play-Based Methods in Science: In-Service Teachers' Profiles and Views on Conceptual Playworlds
Argyris Nipyrakis*, University of Crete, Greece
Eleni Stavropoulou, Aristotle University, Greece
Iro Zachariadi, Aristotle University, Greece
Glykeria Fragkiadaki, Aristotle University, Greece

Stand-Alone Paper
Teacher & Environmental Educator Perspectives: Environmentally-themed Elementary School Partnership programs
Rachel Stronach*, University of Massachusetts Dartmouth, USA
Hamza Malik, Lloyd Center for the Environment, USA
Stephen Witzig, University of Massachusetts Dartmouth, USA

Stand-Alone Paper
STEM and Successful Play-based Programs
Michael Kamen*, Southwestern University, USA

Sydney Jackson*, Southwestern University, USA

Stand-Alone Paper
Teacher Professional Learning for Productive Interdisciplinary Engagement in Nature-based Learning
Kay Ramey*, University of Iowa, USA
Bianca Schamberger, University of Iowa, USA

Equity Inclusion and Critical Perspectives in STEM Education

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
21-Apr-26, 14:30-16:00
Location: Willow B (L2)

Stand-Alone Paper
Bridging High School and College with STEM Experiences and Community: A Longitudinal Mixed Methods Study
Dustin Van Orman*, Western Washington University, USA
Domenico Galati*, Western Washington University, USA
Kadalyna Franck-Tolentino, Western Washington University, USA

Stand-Alone Paper
Academic capitalism meets feminist socialism: The gender of science teaching in the neoliberal university
Katherine Doerr*, Malmö University, Sweden

Stand-Alone Paper
Undergraduate Learning Assistants' Conceptions of Racial Equity: Reproducing and Resisting Color-Evasiveness in Postsecondary STEM Classrooms
Regan Levy*, Michigan State University, USA
Shahnaz Masani, Michigan State University, USA

Stand-Alone Paper
Adaptive Equity-Oriented Pedagogy Predicts STEM Student Achievement in Higher Education: Evidence from a Multi-Site Study
Andrew Phuong, UC San Diego, USA
Fan Huang, UC San Diego, USA
Judy Nguyen, UC San Diego, USA
Carolyn Hofstetter, UC San Diego, USA
Fabrizio Mejia,UC Berkeley, USA
Stanley Lo*, UC San Diego, USA

Educator Identity, Development & Community

Strand 6: Science Learning in Informal Contexts
21-Apr-26, 14:30-16:00
Location: Seneca (L4)

Stand-Alone Paper
Science Museum Educators' Sense of Community, Self-Worth, and Organizational Commitment
Megan Ennes*, University of Florida, USA
Elizabeth Riotto, University of Florida, USA

Stand-Alone Paper
Facilitating for Ownership: Supporting Out-of-School Time Educators in

Cultivating Youth-Directed STEM Learning
Heidi Cian*, Maine Mathematics and Science Alliance, USA

Stand-Alone Paper
From Classroom to Content Creator: Leadership Practices and Identities of Female Science Teachers on TikTok
Rachel Benzoni*, University of Nebraska-Lincoln, USA

Stand-Alone Paper
Creating a Sense of Belonging: Exploring Informal Science Educator Pedagogies, Storied Identities, & Critical Positional Praxis
Shaghig Chaparian*, NYU, USA
Olivia Ortiz, NYU, USA
Kam Waugh, NYU, USA
Wendy Barrales, John Jay College - City University of New York (CUNY), USA
Luz Velasco Vela, Fordham University, USA
Jasmine Ma,NYU, USA
Latasha Wright, BioBus, USA

Cultivating Preservice Teachers Through Authentic Experience and Mentorship

Strand 7: Pre-service Science Teacher Education
21-Apr-26, 14:30-16:00
Location: Boren (L4)

Stand-Alone Paper
Structured Project-Based Learning to Build Science Teaching Expertise in a Didactics Module
Angela Stott*, University of the Free State, South Africa

Stand-Alone Paper
Impact of Preservice Science Teachers' Authentic Science Experiences on Agency and Future Classroom Practices
Kim McComas*, University of Arkansas, USA
William McComas*, University of Arkansas, USA
Stephen Burgin*, University of Arkansas, USA

Stand-Alone Paper
From Curiosity to Investigation: How the H4SI Toolkit Improves Preservice Elementary Teachers' Scientific Question Formulation
Soon Lee*, Kennesaw State University, USA
Anna Arias*, Kennesaw State University, USA
Preethi Titu, Kennesaw State University, USA
Jessica Reaves, Kennesaw State University, USA
Rasheda Likely,Kennesaw State University, USA

Stand-Alone Paper
Developing Elementary Pre-Service Teachers' Science Teaching Self-Efficacy Through A Near-Peer Mentorship Program
Taiwo Ogundapo*, Indiana University Bloomington, USA
Meredith Park Rogers, Indiana University, USA

Reimagining Curriculum-focused Professional Learning: Building Teachers' Practical Ideologies for Curricular Sensemaking, Adaptation and Enactment

Strand 8: In-service Science Teacher Education
21-Apr-26, 14:30-16:00
Location: Greenwood (L3)

Related Paper Set
What About Student Resources?: A Teacher's Pedagogical Design Capacity for Planning and Enacting Equitable Discussions
Kevin Hall*, Stanford University, USA
Nicholas Leonardi, University of Illinois Urbana-Champaign, USA
Christina Krist, Stanford University, USA
Barbara Hug, University of Illinois Urbana-Champaign, USA

Related Paper Set
Building reciprocal classroom-community partnerships as a catalyst for supporting students' critical science agency
Julia Poel*, Stanford University, USA
Christina Krist*, Stanford University, USA
Liz Harris*, Stanford University, USA
Kevin Hall, Stanford University, USA
Michelle Zhang,Stanford University, USA

Related Paper Set
From Practical Ideology to Implementation: How Curriculum Shape Teacher Change
Nga Hoang, University of Colorado Boulder, USA
Mon-Lin Monica Ko, University of Colorado Boulder, USA

Related Paper Set
Recognizing Community Cultural Wealth: Challenges to and Opportunities For Building Classroom-Community Partnerships
Mon-Lin Monica Ko*, University of Colorado Boulder, USA
Melissa Campanella, University of Colorado Boulder, USA

What's in a Frame?: Challenges and Opportunities in Learning to Teach for Equity

Strand 8: In-service Science Teacher Education
21-Apr-26, 14:30-16:00
Location: Issaquah AB (L3)

Related Paper Set
A Teacher's Use of Equity Frames in Their Noticing and Decision-Making
Linsey Brennan*, Michigan State University, USA

Related Paper Set
"Seeing Where We Stand": Building Ideological Attunement Through Pedagogical Judgement
Matt Stewart*, University of Washington, USA

Related Paper Set
Ethical Decision-Making in Action: Teachers' Learning Opportunities Through Case-Based Discussions in Professional Learning
Nicholas Leonardi*, University of Illinois Urbana-Champaign, USA

Related Paper Set
Staying, Moving, or Leaving?: The Career Trajectories of Early Career Science Teachers in High-Needs Schools
Adepeju Prince*, Kent State University, USA

Culturally Sustaining Approaches to Classroom Assessment in Science and Engineering: Findings, Tensions, and Open Questions

Strand 10: Curriculum and Assessment
21-Apr-26, 14:30-16:00
Location: Capitol Hill (L3)

Symposium
Culturally Sustaining Approaches to Classroom Assessment in Science and Engineering: Findings, Tensions, and Open Questions
Erin Furtak*, University of Colorado Boulder, USA
Hosun Kang*, University of California Irvine, USA
Christopher Wright*, Drexel University, USA
Clarissa Deverel-Rico*, BSCS Science Learning, USA
Shakhnoza Kayumova*, University of Massachusetts Dartmouth, USA
Veronica McGowan*, University of Washington Bothell, USA
Lauren Stoll, WestEd, USA
Nelly Tsai, Northwood High School, USA
Django Paris, University of Washington Seattle, USA
Dionne Champion, University of Florida, USA

Operationalizing culturally responsive, relevant, and sustaining pedagogies

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 14:30-16:00
Location: Ballard (L3)

Stand-Alone Paper
Finding Moments of Joy: Reimagining Relationships with Science through Culturally Responsive Science Teaching
Jamie Wallace*, American Museum of Natural History, USA
Elaine Howes, American Museum of Natural History, USA
Melanie Hopkins, American Museum of Natural History, USA
Aline Gjelag, American Museum of Natural History, USA
Steven Riccio,American Museum of Natural History, USA

Stand-Alone Paper
Re-imagining pre-service science teacher preparation: A microethnographic exploration on equity-minded pedagogy development through Foucauldian perspectives
Gina Zaccagnini*, Purdue University, USA

Stand-Alone Paper
Humanizing Science Instruction through Culturally and Historically Responsive Teaching and Learning
Vanessa Louis*, University of Michigan, USA

Stand-Alone Paper

Affirming Undergraduates' Science Identity through Community-Based and Culturally Relevant Science Teaching

Perla Ramos Carranza*, Cal Poly, San Luis Obispo, USA
Jasmine Nation, Cal Poly, San Luis Obispo, USA
Alejandra Yep, Cal Poly, San Luis Obispo, USA
Xavier Aguilar, Cal Poly, San Luis Obispo, USA
Thais Malfavon,Cal Poly, San Luis Obispo, USA
Jessica Garcia-Tapia, Cal Poly, San Luis Obispo, USA
Isaiah Rivera, Cal Poly, San Luis Obispo, USA

Stand-Alone Paper

What Do You Mean Community? Contextualizing Community Through STEM

D'Angelo Peters*, Purdue Univeristy, USA
Lynn Bryan, Purdue University, USA
Elizabeth Thiel, Purdue Univeristy, USA

Affirmative Transgressions: Exploring the Relationship Between Black STEM Students and Place Identity

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 14:30-16:00
Location: Cedar AB (L2)

Symposium

Affirmative Transgressions: Exploring the Relationship Between Black STEM Students and Place Identity

Shari Watkins*, American University, USA
Terrell Morton*, University of Illinois Chicago, USA
Jenn Adams*, University of Calgary, Canada
Tia Madkins*, University of Texas Austin, USA
Ashley Woodson*,Wayne State University, USA
Nickolaus Ortiz, Georgia State University, USA
Joanna Ali, North Carolina A&T State University, USA
Paula Groves Price, North Carolina A&T State University, USA
Yasmiyn Irizarry, University of Texas Austin, USA
Brian McGowan, American University, USA
Andrea Tyler, Tennessee State University, USA

Expansive Science Learning for Heterogeneity, Justice, and Towards More Sustainable Futures.

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 14:30-16:00
Location: Ravenna AB (L3)

Symposium

Expansive Science Learning for Heterogeneity, Justice, and Towards More Sustainable Futures.

Veronica Cassone McGowan*, University of Washington Bothell, USA
Carrie Tzou*, Northwestern, USA
Symone Gyles*, University of California Irvine, USA
Elizabeth Starks*, University of Washington, USA
Bryan White,University of Washington Bothell, USA
Megan Bang, Northwestern University, USA

Navigating the Transformative Potential of AI in Science Education: Adaptive Learning Architectures and Ethical Considerations

Strand 12: Technology for Teaching, Learning, and Research
21-Apr-26, 14:30-16:00
Location: Jefferson B (L4)

Stand-Alone Paper
Navigating the Transformative Potential of AI in Science Education: Adaptive Learning Architectures and Ethical Considerations
Marcus Kubsch*, Freie Universität Berlin, Germany
Knut Neumann, IPN – Leibniz Institute for Science and Mathematics Education, Germany
Paul Martin, JLU Gießen, Germany
Brandon Yik, University of Georgia, USA
Benjamin Burlingham, Indiana University, USA
Nicole Graulich, JLU Gießen, Germany
Peter Wulff, PH Ludwigsburg, Germany
Paul Wulff, TU Berlin, Germany

Learning about Viral Epidemics through Engagement with Different Types of Models

Strand 13: History, Philosophy, Sociology, and Nature of Science
21-Apr-26, 14:30-16:00
Location: Virginia (L4)

Related Paper Set
Students' Epistemic Considerations of Modeling in the Context of COVID-19
Shumin Zhao, University of Nevada, Reno, USA
Li Ke*, University of Washington, USA
Laura Zangori, University of Missouri, USA
Troy Sadler, University of North Carolina at Chapel Hill, USA

Related Paper Set
Socio-scientific Issue Based Learning with Multiple Models
Troy Sadler*, University of North Carolina at Chapel Hill, USA
Laura Zangori, University of Missouri, USA
Eric Kirk, Utah State University, USA

Related Paper Set
"What Works for MLLs Works for Everyone": Unpacking Science Teachers' Understanding of Language in Modeling
Ayça Fackler*, The University of Missouri, USA
Madeline Good, Truman State University, USA
Laura Zangori, The University of Missouri, USA

Related Paper Set
Design Reasoning During SSI Solution-finding
Jamie Steiner*, University of North Carolina at Chapel Hill, USA
Troy Sadler, University of North Carolina at Chapel Hill, USA

Climate Change and Global Competence: Youth Voices and Transformative Experiences

Strand 14: Environmental Education and Sustainability
21-Apr-26, 14:30-16:00
Location: Jefferson A (L4)

Stand-Alone Paper

Empowering urban high school students in geoscience through an environmental geochemistry intervention

Lisa Marco-Bujosa*, Villanova University, USA
Hannah Feldman, Villanova University, USA
Steven Goldsmith, Villanova University, USA
Kabindra Shakya, Villanova University, USA
Vanessa Boschi,Villanova University, USA
Evelyn Sperry, Villanova University, USA
Jacob Turko, School District of Philadelphia, USA
Najwa Smith, School District of Philadelphia, USA

Stand-Alone Paper

Undergraduate Attitudes and Beliefs About Climate Change Following a Study-Abroad Experience in Fiji

Krista Lucas*, Pepperdine University, USA
Abigail Baker*, Pepperdine University, USA
Catherine Nguyen*, Pepperdine University, USA
Elizabeth Stansberry*, Pepperdine University, USA
Timothy Lucas,Pepperdine University, USA
Donna Nofziger, Pepperdine University, USA

Strand 14: Environmental Education and Sustainability
21-Apr-26, 14:30-16:00
Location: Jefferson A (L4)

Stand-Alone Paper

Student-Centered STEM Education: Highlighting Youth Voices Through Policymaking

Hamza Malik, Lloyd Center for the Environment, USA
Muhammad Usman Ijaz*, UMassD, USA
Syed Nauman Wazir*, UMassD, USA
Rachel Stronach, UMassD, USA
Chad McGuire,UMassD, USA
Stephen Witzig, UMassD, USA

Stand-Alone Paper

Nurturing Global Competence in Science Classrooms through a Unit on Climate Change

Arya Karumanthra*, Indiana University, USA
Gayle Buck, Indiana University, USA

Bridging Cultures and Knowledge: Fostering Cross-Cultural Connections in Indigenized STEM Education and Research

21-Apr-26, 14:30-16:00
Location: Willow A (L2)

Administrative Session

Organizers

Julie Robinson, University of North Dakota, Grand Forks, ND, USA

Contributors

Julie Robinson, University of North Dakota, Grand Forks, ND, USA

Joshua Hunter, University of North Dakota, Grand Forks, ND, USA
Ari Krakowski, University of California-Berkeley, USA
Peresang Sukinarhimi, National Sun Yat-sen University, Taiwan
Pauline Chinn, University of Hawai'i at Mānoa, Honolulu, Hawai'i, USA
Stacy Potes, University of Hawai'i at Mānoa, Honolulu, Hawai'i, USA
Jhu Chun Yang, National Cheng Kung University, Taiwan
Paichi Pat Shein, National Sun Yat-sen University, Taiwan
Stephanie Erickson, University of Minnesota, USA
Bhaskar Upadhyay, University of Minnesota, USA

Planning Together the NARST Centennial Celebration and 2027 Conference

21-Apr-26, 14:30-16:00
Location: Grand Ballroom (L2)

Administrative Session

Organizers
Maria Varelas, University of Illinois Chicago, USA

Fostering Creativity and Critical Thinking in Science

Strand 1: Science Learning: Development of student understanding
21-Apr-26, 16:15-17:45
Location: Ravenna C (L3)

Stand-Alone Paper

A Meta-Analysis on Scientific Creativity Development through Problem-Solving and STEM Contexts
Fredyrose Ivan Pinar*, De La Salle University, Philippines
Albert Andry Panergayo, Laguna State Polytechnic University, Philippines
Lydia Roleda, De La Salle University, Philippines
Maricar Prudente, De La Salle University, Philippines
Dharel Acut,Cebu Technological University, Philippines
Richard Sagcal, De La Salle University, Philippines

Stand-Alone Paper

A Systematic Literature Review of Data Literacy in K-12 Science Education
Hui Jin*, Georgia Southern University, USA
Bailey Nafziger, Georgia Southern University, USA

Stand-Alone Paper

Fostering Criticality and Agency in AI-Mediated Science Learning: Extending the CT-S Framework
Eric Greenwald*, University of California Berkeley, Lawrence Hall of Science, USA
Timothy Hurt, University of California Berkeley, Lawrence Hall of Science, USA
Ari Krakowski, University of California Berkeley, Lawrence Hall of Science, USA

Vanessa Lujan, University of California Berkeley, Lawrence Hall of Science, USA

Supporting Teachers: Professional Growth, Knowledge, and Retention

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
21-Apr-26, 16:15-17:45
Location: Cedar AB (L2)

Stand-Alone Paper
Characterizing Course-based Research Experiences in Secondary Schools: A Systematic Review
Daniel Shay*, Washington State University, USA
Andy Cavagnetto, Washington State University, USA

Stand-Alone Paper
Should I Stay or Should I Go: Results From a Survey on Science Teacher Retention
Lauren Harper*, Horizon Research, Inc., USA
Patrick Smith*, Horizon Research, Inc., USA
Jamie Wallace*, American Museum of Natural History, USA

Stand-Alone Paper
Sustaining Science Teacher Leadership: Applying the Community of Practice Model Across Urban and Rural Contexts
Natasha Johnson*, University of Toledo, USA

Stand-Alone Paper
Teachers' Conceptual Knowledge of Wildfire and Human Interaction
Debika Jana*, University of Nevada Las Vegas, USA
Merryn Cole*, University of Nevada Las Vegas, USA

Stand-Alone Paper
Teaching Science Using Knowledge-in-Pieces during Nature-Based Learning
Phillip Dixon, University of Iowa, USA
Matthew Lira, University of Iowa, USA
Kay Ramey, University of Iowa, USA

Roundtables Session 2

21-Apr-26, 16:15-17:45
Location: Grand Ballroom (L2)

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
Roundtable
"Be Better Than You Need to Be": A-Level Physics Students' Peer Pedagogy on TikTok
Wonyong Park*, University of Southampton, United Kingdom

Strand 5: College Science Teaching and Learning (Grades 13-20)
WIP Roundtable
Undergraduates' Perceptions and Beliefs of Generative AI in Introductory Physics Learning
Carina Rebello*, Purdue University, USA
Qurat-ul-Ann Mirza, Purdue University, USA
Mina Megally, Toronto Metropolitan University, Canada
N. Sanjay Rebello, Purdue University, USA

Strand 7: Pre-service Science Teacher Education
Roundtable
How and why young people position science teaching as a back-up career
Emily MacLeod*, McGill University, Canada

Strand 7: Pre-service Science Teacher Education
Roundtable
Using Q-Methodology to Understand Shifts in Orientation towards Equitable Teaching among Pre-service Elementary Science Teachers
Lynne Zummo*, University of Utah, USA
Tracy Dobie, University of Utah, USA
Lauren Barth-Cohen, University of Utah, USA
Connor Warner, University of Utah, USA

Strand 7: Pre-service Science Teacher Education
Roundtable
Preservice Elementary Teachers' Views on Scripted Science Curriculum in Linguistically and Culturally Diverse Classrooms
Sissy Wong*, University of Houston, USA
Samuel Katende, University of Houston, USA
Hien Tran, University of Houston, USA
Jie Zhang, University of Houston, USA
Raju Ahmmed,University of Houston, USA
Maria Walsh, University of Houston, USA

Strand 7: Pre-service Science Teacher Education
WIP Roundtable
Bridging Local Knowledge and Global Citizenship through Place-Based Exchange Program between Taiwan and Hawaii
Yu-Chieh Wu*, University of Hawaii, USA
Jhu Chun Yang*, Sun Yat Sen University, Taiwan
Pauline Chinn*, University of Hawaii, USA

Strand 8: In-service Science Teacher Education
Roundtable
Coaching Coaches: An Autoethnographic Reflection
Melissa Mendenhall*, Utah Valley University, USA

Strand 8: In-service Science Teacher Education
WIP Roundtable
Reimagining a practitioner-researcher collaboration model. Leveraging trust; Nurturing relationships; Responding to science classroom needs.
Tej Dalvi*, University of Massachusetts, USA
Pat Paugh, University of Massachusetts, USA
Jihan Mehideen, Boston Public Schools, USA

Strand 8: In-service Science Teacher Education
Roundtable
"I should have ensured its accessibility" – Science Teachers' Epistemic Empathy for Blind and Low-Vision Students
Mutiara Syifa*, Illinois State University, USA
Natalie Shaheen, Illinois State University, USA

Strand 8: In-service Science Teacher Education
Roundtable
Developing and Implementing an Integrated STEM Curriculum Grounded in an Up-to-Date, Authentic University-Based Research
Maram Alaqra, Sharjah Education Academy, UAE
Bugrahan Yalvac*, Texas A&M university, USA

Strand 8: In-service Science Teacher Education
Roundtable
Affirming Learing Walks: providing promise for teachers' self-efficacy, emotions, and retention.
Donna Ross*, San Diego State University, USA
Matt Graham*, University of Oregon, USA
Bryan Rebar*, University of Oregon, USA
Jenefer Husman, University of Oregon, USA

Strand 10: Curriculum and Assessment
Roundtable
Three Teachers Experience Implementing a Paleontology and Computer Vision Curriculum: Barriers and Opportunities
Christine Wusylko*, Kennesaw State University, USA
Gabriella Haire, University of Florida, USA
Breuna Wilson, University of Florida, USA
Pasha Antonenko*, University of Florida, USA
Jeremy Waisome, University of Florida, USA
Brian Abramowitz, Northern Essex Community College, USA
Victor Perez, St. Mary's College of Maryland, USA
Stephanie Killingsworth, University of Florida, USA

Strand 10: Curriculum and Assessment
Roundtable
From Structure to Fairness: Validating the Interdisciplinary Science Assessment of Carbon Cycling II
Hyesun You*, University of Iowa, USA
Sunyoung Park, California Lutheran University, USA

Strand 10: Curriculum and Assessment
WIP Roundtable
Culturally Relevant or More of The Same? Unpacking Standards-Aligned Elementary Science Curriculum Materials
TERRANCE Burgess*, Michigan State University, USA

Strand 10: Curriculum and Assessment
Roundtable
Developing Secondary Interdisciplinary STEM Curricula in Two Countries: Design Approaches and Challenges
Erin Furtak*, University of Colorado Boulder, USA
Lukàš Rokos, University of South Bohemia, Czech Republic
Lien Amin*, University of Colorado Boulder, USA

Strand 10: Curriculum and Assessment
Stand-Alone Paper
Bridging Disciplinary Boundaries: Development and Validation of the Interdisciplinary Science Assessment of Carbon Cycling II
Hyesun You*, University of Iowa, USA
Minju Hong, Chung-Ang University, Korea, Republic of
Won-Chan Lee, University of Iowa, USA

Strand 11: Cultural, Social, and Gender Issues
Roundtable
"Silent Suffering" and "Crippling Fear": Understanding how science learners describe impostor experiences using conceptual metaphors
Devasmita Chakraverty*, Indian Institute of Management Ahmedabad, India

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Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 16:15-17:45
Location: Grand Ballroom (L2)

Roundtable
Reflections on Positioning of a Summer Science Teaching Intern: Mai's Story
Maria Rivera Maulucci*, Barnard College, Columbia University, USA

Strand 11: Cultural, Social, and Gender Issues
WIP Roundtable
Play, Power, and Pedagogy: Reimagining Science Education in Times of Rising Authoritarianism
Erica Carlson-Moudry*, University of Nebraska at Omaha, USA
K. Mendoza*, University of Nebraska at Omaha, USA

Strand 11: Cultural, Social, and Gender Issues
WIP Roundtable
(Re)Defining Scientific Wealth: Exploring Economic and Sociocultural Currencies Within STEM Education

Ava Breitbeck*, Syracuse University, USA

Strand 11: Cultural, Social, and Gender Issues
WIP Roundtable
Advancing Theory with Doctoral Students at an International Ph.D. Summer School
Kevin Nguyen*, Sonoma State University, USA
Bjørn Johannsen, University College Copenhagen, Denmark
Katherine Doerr, Malmö University, Sweden
Katerina Günter, Umeå University, Sweden
Tatiane Russo-Tait, University of Georiga, USA

Strand 11: Cultural, Social, and Gender Issues
WIP Roundtable
Goals and impacts of West African women academics engaging in academic communication on social media.
Shallom Lumor*, Technion Israel Institute of Technology, Israel
Tzipora Rakedzon, Technion, Israel Institute of Technology, Israel

Strand 11: Cultural, Social, and Gender Issues
Roundtable
Issues of Equity and Engineering: How Professionals Conceptualize Equity as Integral to Good Engineering Practice
Joy Anogwih, University of Alabama, USA
Shannon Davidson*, University of Alabama, USA
Abiodun Babalola, University of Alabama, USA

Strand 11: Cultural, Social, and Gender Issues
Roundtable
Science Teachers for Social Justice: Creating a transformative community of practice
Katherine Wade-Jaimes*, University of Nevada, USA

Strand 11: Cultural, Social, and Gender Issues
WIP Roundtable
"They are scientists, not women scientists": A Qualitative Case Study of Female Scientists on Xiaohongshu
Shumin Zhao*, University of Nevada, Reno, USA

Strand 12: Technology for Teaching, Learning, and Research
Roundtable
The impact of Augmented Reality to enhance students' cognitive outcomes : a systematic review
Erick Soan*, University of Florida, USA

Strand 12: Technology for Teaching, Learning, and Research
WIP Roundtable
Climate Change x Geoinformatics - a Combination to Overcome Educational Segregation?
MARIE JOHANNA UNIVER*, University of Tartu, Estonia
Birgit Viru, University of Tartu, Estonia
Regina Soobard, University of Tartu, Estonia

Strand 12: Technology for Teaching, Learning, and Research
Roundtable
What Happens When AI Enters the Science Classroom? Lessons from Korea and the U.S.
Benjamin Oh*, Lynbrook high school, USA
Jonghyun Park, Daejeon Science high school for the gifted, Korea, Republic of
Cheol-Hong Jeon, Korea National University of Education, Korea, Republic of
Suna Ryu*, Korea National University of Education, Korea, Republic of

Strand 12: Technology for Teaching, Learning, and Research
Roundtable
Preservice Teachers' Evaluation Process and Criteria for AI Suggestions in Science Lesson Planning
Soo Won Shim*, Illinois State University, USA

Strand 13: History, Philosophy, Sociology, and Nature of Science
Roundtable
Considering the Future of Nature of Science in Science Instruction: What's Next?
William McComas*, University of Arkansas, USA
Douglas Allchin*, University of Minnesota, USA
Christine McDonald, Griffith University, Australia
Kostas Kampourakis*, University of Geneva, Switzerland
Erin Peters-Burton*,George Mason University, USA

Strand 13: History, Philosophy, Sociology, and Nature of Science
Roundtable
Artificial Intelligence and the Nature of Science: Rethinking School Science for a New Era
Zoubeida Dagher*, University of Delaware, USA
Sibel Erduran, University of Oxford, United Kingdom

Strand 13: History, Philosophy, Sociology, and Nature of Science
Roundtable
Why Does Dealing with Data Really Matter? Benefits and the Conditions That Support Them
Gregor Benz, Technical University of Munich, Germany
Joshua Rosenberg*, University of Tennessee, Knoxville, USA
Victor Lee, Stanford University, USA

Strand 14: Environmental Education and Sustainability
Roundtable
Building Resilient and Inclusive Education Systems: Insights from International Literature
Narendra Deshmukh*, Ret. from Homi Bhabha Centre for Science Education, TIFR, India

Strand 14: Environmental Education and Sustainability
Roundtable
Examining Adult Climate Change Educator Identity and Agency Shifts Across Professional Contexts
Emma Schectman*, UC Davis, USA

Strand 14: Environmental Education and Sustainability
WIP Roundtable
Context as Curriculum: Learning from the Land on which We are Settlers
Angela D'Souza*, University of Massachusetts, USA
Jeanne Brunner, University of Massachusetts, USA

Strand 14: Environmental Education and Sustainability
Roundtable
We Are Scientists: Science Identity, Language, and Cultural Relevance in Environmental Education
Becca VanArnam*, University of California Davis, USA
Peggy Harte, UC Davis Center for Community and Citizen Science, USA
Heidi Ballard, University of California Davis, USA

Strand 14: Environmental Education and Sustainability
Roundtable
Science learning at sea: STEMSEAS as a model of experiential and transformative science learning
Shondricka Burrell PhD*, Morgan State University, USA
Keshiyena Pieters*, Morgan State University, USA

Strand 14: Environmental Education and Sustainability
Roundtable
Climate change curriculum as a communication tool for supporting teachers' epistemic practices
Shweta Lahiri*, University of Georgia, USA
Emily Adah Miller, University of Georgia, USA
Hong Tran, Purdue University, USA
Yuxi Huans, University of California, Irvine, California, USA
Joe DeLuca,University of Georgia, USA

Strand 14: Environmental Education and Sustainability
Roundtable
Teachers' Approaches to Instructional Design for Environmental Science Agency
Won Jung Kim*, Santa Clara University, USA

Strand 15: Policy, Reform, and Program Evaluation
Roundtable
Expanding Climate Education Using a Networked Improvement Community: A Case Study
Eric Nolan*, California State University, East Bay, USA
Michele Korb, California State University, East Bay, USA
Itzel Parada, California State University, East Bay, USA
Kathryn Hayes, California State University, East Bay, USA
Emily Harris,BSCS, USA
Karina Garbesi, California State University, East Bay, USA

Pathways to Persistence: Belonging, Motivation, and Engagement

Strand 5: College Science Teaching and Learning (Grades 13-20)
21-Apr-26, 16:15-17:45
Location: Willow B (L2)

Stand-Alone Paper

Strengthening STEM Pathways Through Cohort-Based Learning and Career Engagement in Community College

Ti'Era Worsley*, Northern Virginia Community College, USA
Justin Owen, Northern Virginia Community College, USA
Jack Bidlack, Northern Virginia Community College, USA
Christopher Russell, Northern Virginia Community College, USA
Joshua Labrie, Northern Virginia Community College, USA

Stand-Alone Paper

Science Identity and College Transitions at an HBCU

Elizabeth Deimeke*, Clark Atlanta University, USA
Reneé Schwartz, Georgia State University, USA

Stand-Alone Paper

Belonging in Biology Education: Intersectional Experiences and Recommendations from Undergraduate Muslim Students in the US

Rahmi Aini*, Middle Tennessee State University, USA
M. Elizabeth Barnes, Middle Tennessee State University, USA

Cultivating Teacher Identity and Agency in Preservice Education

Strand 7: Pre-service Science Teacher Education
21-Apr-26, 16:15-17:45
Location: Boren (L4)

Stand-Alone Paper

"I feel like you're trying to science teacher me": Challenging epistemic hierarchies in teacher education

Elizabeth Harris*, Stanford University, USA

Stand-Alone Paper

Why Stay? Exploring Preservice Elementary Teachers' Intent to Remain in the Profession

Jeanna Wieselmann*, Southern Methodist University, USA
Grace Morison, Southern Methodist University, USA
Deepika Menon, University of Nebraska - Lincoln, USA
Sarah Haines, Towson University, USA
Sumreen Asim,Indiana University Southeast, USA

The impact of professional learning and research-practice partnerships

Strand 8: In-service Science Teacher Education
21-Apr-26, 16:15-17:45
Location: Greenwood (L3)

Stand-Alone Paper

Changes in Fifth-Grade Teachers Socioscientific Issues Instruction: Assessing the impact of professional development

Jerrid Kruse*, Drake University, USA
Sarah Borzo*, Drake University, USA

Ava Dembowski, Drake University, USA
Macy Gardner, Drake University, USA
Lucas Menke,Drake University, USA
Isaiah Kent-Schneider, Purdue, USA
Maddie Kampf, Drake University, USA

Stand-Alone Paper

Fifth-grade Teachers' Critical Science Literacy: Investigating the impact of professional development

Lucas Menke*, Drake University, USA
Jerrid Kruse*, Drake University, USA
Sarah Hunt, Drake University, USA
Sarah Borzo, Drake University, USA
Mitch Klocke,Drake University, USA
Ava Dembowski, Drake University, USA
Megan Huberty, Drake University, USA
Grace Hegard, Drake University, USA

Stand-Alone Paper

Why Well-Designed Professional Learning Programs Can Fail: Evidence from a PL Program on Scientific Reasoning

Richard Sannert*, IPN - Leibniz Institute for Science and Mathematics Education, Germany
Verena Petermann, Justus Liebig University Giessen, Germany
Janet Carlson, Stanford University, USA
Jan van Driel, University of Melbourne, Australia
Moritz Krell,IPN - Leibniz Institute for Science and Mathematics Education, Germany

Stand-Alone Paper

Building and Sustaining Research-Practice Partnerships in Geospatial Education: Lessons from a Four-Year Collaboration

Danielle Malone*, Purdue University, USA
Kate Popejoy*, Popejoy STEM LLC, USA
Judith Morrison, Washington State University, USA
Jonah Firestone, Washington State University, USA
Thomas Hammond,Lehigh University, USA
Molly Weinburgh, Texas Christian University, USA
Kristen Brown, Texas Christian University, USA
Lindsay Lightner, Washington State University, USA
Alec Bodzin, Lehigh University, USA

Science teachers' epistemic beliefs and modeling practices

Strand 8: In-service Science Teacher Education
21-Apr-26, 16:15-17:45
Location: Issaquah AB (L3)

Stand-Alone Paper

Making Sense with Models: Modeling as a Gateway to the NGSS Science and Engineering Practices

Katherine Glover*, North Carolina State University, USA
Laura Chalfant, North Carolina State University, USA
Grace Carroll, North Carolina State University, USA
Khalid Alharbi, North Carolina State University, USA
Lynn Huff,North Carolina State University, USA
Soonhye Park, North Carolina State University, USA
Matt Reynolds, North Carolina State University, USA

Stand-Alone Paper

Investigating the Interplay of Teachers' PCK, Epistemic Beliefs, and Their Implementation of Modeling Instruction

Laura Chalfant*, North Carolina State University, USA
Grace Carroll, North Carolina State University, USA
Matt Reynolds, North Carolina State University, USA
Soonhye Park, North Carolina State University, USA
Katherine Glover,North Carolina State University, USA
Khalid Alharbi, North Carolina State University, USA
Lynn Huff, North Carolina State University, USA
Scott Ragan, North Carolina State University, USA
Jason Painter, North Carolina State University, USA

Stand-Alone Paper

Exploring Patterns of Assessment Literacy in Model-Based Science Instruction

Alexis Gonzalez-Donoso*, The University of British Columbia, Canada
Samia Khan, University of British Columbia, Canada

Curriculum Co-Design and Customization: Understanding Teacher Choices and Challenges

Strand 10: Curriculum and Assessment
21-Apr-26, 16:15-17:45
Location: Capitol Hill (L3)

Stand-Alone Paper

Supporting Teacher Customization for Equitable Discussion through Cycles of Enactment and Reflection

Brianna Balke*, Boston College, USA
Maria Moreno Vera, Boston College, USA
Austin Moore, Boston College, USA
Katherine McNeill, Boston College, USA

Stand-Alone Paper

Design Dilemmas as Productive Spaces for Teacher Learning: Insights from a Curriculum Co-Design Case Study

Katarzyna Pomian Bogdanov*, Florida State University, USA

Stand-Alone Paper

Co-designing a CS Infused Gardening Curriculum with Community Partners in a Rural Research Practice Partnership

Quentin Biddy*, University of Colorado, USA
Jennifer Jacobs, University of Colorado, USA
Srinjita Bhaduri, University of Colorado, USA
Lalita Suwattee, University of Colorado, USA

Stand-Alone Paper

Navigating through Pedagogical Dilemmas in Curriculum Customization for Equity

Yang Zhang*, Northwestern University, USA
Jason Buell, Northwestern University, USA
Etta Pope, Northwestern University, USA
Brian Reiser, Northwestern University, USA

Envisioning Equitable Futures Through Science Education: Challenging Dominant Norms and Centering Marginalized Voices

Strand 11: Cultural, Social, and Gender Issues
21-Apr-26, 16:15-17:45
Location: Ballard (L3)

Related Paper Set

Preservice Elementary Teachers' Work to Expand What Counts as Science

Jessica Bautista*, University of Michigan, USA
Elizabeth Davis, University of Michigan, USA

Related Paper Set

Building Queer Belonging in STEM Education Curriculum

Kyle Nolting*, University of Denver, USA

Related Paper Set

Middle School Students' Sensemaking as Experts on Their Community in a Justice-Oriented Wildfire Science Unit

Spencer Eusden*, University of Nevada, Reno, USA
Li Ke, University of Washington, USA

Community, Transparency, and Tinkering for Just Futures: Lessons Learned from the Critical AI Literacy Institute

Strand 12: Technology for Teaching, Learning, and Research
21-Apr-26, 16:15-17:45
Location: Jefferson B (L4)

Related Paper Set

Tinkering as Critical AI Literacy: Teaching Infrastructure through Breakdown & (Re)Configuration

Zachary Muhlbauer*, CUNY Graduate Center, USA

Related Paper Set

The Critical AI Literacy Institute: Asserting and Preserving Scholarly Agency in the Age of AI

Luke Waltzer*, CUNY Graduate Center, USA

Related Paper Set

Fostering Critical AI Literacy as Collective World-Building: Curricular Models for Teaching With/About Generative AI

Laurie Hurson*, The CUNY Gradute Center, The City University of New York, USA

Related Paper Set

Beyond the Black Box: Resisting AI Inevitability Rhetoric and Implications for Science Education

Sule Aksoy*, SUNY Brockport, USA

Nature of science in disciplinary contexts

Strand 13: History, Philosophy, Sociology, and Nature of Science
21-Apr-26, 16:15-17:45
Location: Virginia (L4)

Stand-Alone Paper
The Structure of Biological Explanation: Extending the Nature of Scientific Explanation Framework Beyond Physical Sciences
Sahar Alameh*, University of Kentucky, USA
Fouad Abd-El-Khalick, University of Massachusetts Amherst, USA

Stand-Alone Paper
Promoting Undergraduate Non-Science Majors' Evolution Learning Perspectives through NOS, Mis/disinformation, and Bias Regulation Teaching
Benjamin Herman*, Texas A&M University, USA
Tamara Powers, Texas A&M University, USA
Magda Villwock, Texas A&M University, USA
Daniel De Jesús, Texas A&M University, USA
Michael Clough,Texas A&M University, USA
Ben Janney, Utah Tech University, USA
Aaron Kidd, University of Science and Arts of Oklahoma, USA

Stand-Alone Paper
The influence of NOS understandings on the science identities of two undergraduate science majors
Robert Bennett*, Georgia State University, USA
Renee Schwartz, Georgia State University, USA

Stand-Alone Paper
Systematic review on critics about Galton's eugenics
Natália Carvalho*, Programa de Pós-Graduação Interunidades em Ensino de Ciências da USP, Brazil
Rena Orofino*, School of Education, University of São Paulo, Brazil
Kátia Ribeiro, Federal Institute of Maranhão (IFMA), Brazil

Indigenous STEM Knowledge and Storytelling: Using Stories to Develop STEM Understandings for All Students

Strand 14: Environmental Education and Sustainability
21-Apr-26, 16:15-17:45
Location: Willow A (L2)

Symposium
Indigenous STEM Knowledge and Storytelling: Using Stories to Develop STEM Understandings for All Students
Stacy Potes*, University of Hawaii at Manoa, USA
Piata Allen*, University of Auckland, New Zealand
Nicole Chlebek*, Florida International University, USA
Kat Gardner-Vandy*, Oklahoma State University, USA
Lenora Crabtree*,University of North Carolina at Charlotte, USA
Rebekah Hammack*, Purdue University, USA
Kristal Turner, University of Calgary, Canada
David Owens*, University of Montana Missoula, USA

Research in Artificial Intelligence-Involved Science Education: RAISE RIG Poster Session

21-Apr-26, 16:15-17:45
Location: Redwood AB (L2)

Administrative Session

Organizers
Kent Crippen, University of Florida, FL, USA
Xiaoming Zhai, University of Georgia, Athens, GA, USA

Contributors
André Meyer, Leibniz Universität Hannover, Germany
Arne Bewersdorff, Technical University of Munich, Germany
Noel Kuriakos, University of Maryland, USA
Manav Sharma, University of Miami, USA.
Shreyashi Halder, ETS, USA
Fatma CANER, Özyeğin Üniversitesi, Turkey
Elad Yacobson, Technion – Israel Institute of Technology, Israe
Gyeonggeon Lee, Nanyang Technological University, Singapore
Hasan Deniz, University of Nevada Las Vegas, USA
Xin Xia, University of Georgia, USA

Research Social Hour -- Join NARST Colleagues for Cookies and Collaboration!

21-Apr-26, 18:00-19:00
Location: Willow A (L2)

Administrative Session

Organizers
Melissa Mendenhall, Utah Valley University, Orem, Utah, USA
Karen Woodruff, Kean University, Union, NJ, USA
Kelli Paul, Indiana University, IN, USA

Contributors
Grace Tukurah, Michigan State University, USA
Carla Zembal-Saul, Penn State, USA
Lilian Rudge Bentley, Georgia State University, USA
Alexander Bohn, Northern Virginia Community College, USA
Yurdagül Boğar, Hakkari University, Turkey

Equity and Ethics Dinner

21-Apr-26, 18:00-21:00
Location: Offsite

Conference Day 4
22 April 2026

NARST Fellows Breakfast and Meeting
22-Apr-26, 7:00-8:00
Location: Willow A (L2)

Social Event

Meet the NARST Board of Directors - Breakfast
22-Apr-26, 7:00-8:00
Location: Grand Ballroom Foyer (L2)

Social Event

Membership and Business Meeting
22-Apr-26, 8:00-8:45
Location: Grand Ballroom (L2)

Strengthening Crosscutting Concepts and Knowledge-in-Use
Strand 1: Science Learning: Development of student understanding
22-Apr-26, 9:00-10:30
Location: Ravenna C (L3)

Stand-Alone Paper
Using Explicit Scaffolding Strategies to Foster Knowledge-in-use of Crosscutting Concepts
Qian Wu*, East China Normal University, China
Joseph Krajcik, Michigan State University, USA
Xinning Pei, East China Normal University, China

Stand-Alone Paper
Support in Developing Decision-Making Skills - Results from an Intervention Study in Chemistry Education
Jana-Sabrin Blome-Rohrbach*, TU Dortmund University, Germany
Insa Melle, TU Dortmund University, Germany

Stand-Alone Paper
Investigating Science and Technology Competition Experience's Impact on Crosscutting Concepts Proficiency Level
YUJING GUO*, capital normal university, China
YUPENG WANG, capital normal university, China
KUANG HE, People's Education Press, China
XIN BAI, capital normal university, China

Stand-Alone Paper
Reasoning About Life Cycles Across Elementary Grade Levels
Christelle Fayad*, Texas Christian University, USA
Hayat Hokayem*, Texas Christian University, USA

Engineering Design and Co-Design to Transform STEM Classrooms

Strand 4: Science Teaching — Middle and High School (Grades 5-12): Characteristics and Strategies
22-Apr-26, 9:00-10:30
Location: Ballard (L3)

Stand-Alone Paper
Engineering Education in Middle School STEM towards a Rightful Presence for Minoritized Students
Virginia Swindell*, University of North Carolina at Greensboro, USA
Edna Tan, University of North Carolina at Greensboro, USA

Stand-Alone Paper
Cycles of Co-Design: Linking Instructional Materials Revisions to Shifts in Engineering Teaching Practices
Katy Nilsen*, WestEd, USA
Aaron Soo Ping Chow, WestEd, USA
Sara Salisbury, WestEd, USA
Ashley Iveland*, WestEd, USA

Undergraduate Research Experiences: Student Experiences and Instructor Roles

Strand 5: College Science Teaching and Learning (Grades 13-20)
22-Apr-26, 9:00-10:30
Location: Juniper (L2)

Stand-Alone Paper
From knowledge to action: Instructor decision-making when teaching science practices in Course-based Undergraduate Research Experiences
Alexandra Cooper*, University of Georgia, USA
Danielle Philo, University of Georgia, USA
Tessa Andrews, University of Georgia, USA
Erin Dolan, University of Georgia, USA

Stand-Alone Paper
Increasing Wildlife Career Preparedness: Comparing an Inquiry-based and a Course-based Undergraduate Research Experience Wildlife Course
Danielle Gay*, Texas State University, USA
Carrie Bucklin, Texas State University, USA
Kristy Daniel, Texas State University, USA

Stand-Alone Paper
Conceptual model for anal"ing instructor decision-making during development and implementation of course-based undergraduate research experiences
Laura Rios*, California Polytechnic State University, USA
Carolina Alvarado, California State University, Chico, USA

Stand-Alone Paper
Redefining success during a summer undergraduate research experience at an ecological field station
Anna Grinath*, Idaho State University, USA

Communities as Sites of Resistance, Imagination, and Transformation in Science Education

Strand 6: Science Learning in Informal Contexts
22-Apr-26, 9:00-10:30
Location: Columbia (L4)

Related Paper Set
"Don't take away the good things people love": Ideological Tensions in Youths' Community Designs
Hannah Ziegler*, Vanderbilt University, USA
Heidi Carlone, Vanderbilt University, USA
Lauren Connelly, Vanderbilt University, USA

Related Paper Set
Cultivating Reciprocity in an Informal K-12 Science Education Partnership
georgie schafer*, Drexel University, USA

Related Paper Set
Fostering Latina Youth Science Identity Through Community-Based Experiences
Jaquelina Schmittlen-Garbocci*, University of Tennessee-Knoxville, USA

Related Paper Set
Inviting Possibilities: Youth Coding for Joy, Learning, and Imaginative Futures
Jennifer Tripp*, SUNY Geneseo, USA
Xiufeng Liu, University of Macau, Macao

Related Paper Set
Science Education Toward Socio-Ecological Well-Being: The Potential of Contextualization, Connection, and Agency
Genelle Diaz-Silveira*, Boston University, USA

AI-Enhanced Science Teacher Learning: From Beliefs to Instructional Design and Classroom Simulation

Strand 7: Pre-service Science Teacher Education
22-Apr-26, 9:00-10:30
Location: Ravenna AB (L3)

Stand-Alone Paper
Epistemic Beliefs and Generative AI Acceptance in Science Teacher Education: Exploring Relationships and Demographic Moderators
Öznur Avcı*, Marmara University, Turkey
Feral Bekiroğlu, Marmara University, Turkey

Stand-Alone Paper
GAI-Integrated Pedagogy: Case Study in Pre-Service Science Teacher Development
Xinjia Ma, Shanghai Jiao Tong University, China
Xiaomei Yan*, Shanghai Jiao Tong University, China

Stand-Alone Paper
Authentic or Artificial? Examining the Use of Generative AI Roleplay in Pre-Service Science Teacher Education

Carrie-Anne Sherwood*, Southern Connecticut State University, USA
Mark Wursthorn, Southern Connecticut State University, USA

Building communities of culturally responsive and empowered STEM educators

Strand 8: In-service Science Teacher Education
22-Apr-26, 9:00-10:30
Location: Issaquah AB (L3)

Stand-Alone Paper
Black Women Science Teachers Strive Toward Self-Definition Through a Draw a Science Teacher Activity
Alexis Riley*, New York University, USA

Stand-Alone Paper
Centering Community in K-12 STEM Teaching and Learning: A Framework on Culturally Sustaining Integrated STEM
Khanh Tran*, Utah State University, USA
Lynn Bryan*, Purdue University, USA

Stand-Alone Paper
Supporting Teachers' Contemporary Perspectives on Culture and Community in Science Using Socioscientific Issues
Felisha Dake*, Colorado State University-Pueblo, USA
Cory Buxton, Oregon State University, USA
Melissa Livingston, Oregon State University, USA

Stand-Alone Paper
Empowering STEMM Educators: A Hybrid Model of Intensive PD and Longitudinal Community Building
Matthew Blank*, Baylor College of Medicine, USA
Alana Newell*, Baylor College of Medicine, USA
Nancy Moreno, Baylor College of Medicine, USA

Racialized Joy and Play in STEM Learning

Strand 11: Cultural, Social, and Gender Issues
22-Apr-26, 9:00-10:30
Location: Willow A (L2)

Symposium
Racialized Joy and Play in STEM Learning
Terrell Morton, University of Illinois Chicago, USA
Harrison Pinckney IV*, Pennslyvania State University, USA
Jochebed Gayles*, Pennslyvania State University, USA
Nicole Webster*, Pennslyvania State University, USA
Brittany Hunt*,Virginia Polytechnic Institute and State University, USA
Jessica Leeker*, Cornell University, USA
Sandy Cerda-Lezama, Portland State Unive, USA
Viviana Vélez Negrón*, University of Michigan, USA
Channing Mathews, Univeristy of Virginia, USA
Teresa Satterfield Linares, University of Michigan, USA

Shaping Engagement and Problem Solving in Science Learning through AI and Gameplay Analytics

Strand 12: Technology for Teaching, Learning, and Research
22-Apr-26, 9:00-10:30
Location: Greenwood (L3)

Stand-Alone Paper
Adaptive Training of Physics Problem-Solving Skills
André Meyer*, Leibniz University Hannover, Germany
Gunnar Friege, Leibniz University Hannover, Germany

Stand-Alone Paper
Examining Students' Systems Thinking Through Serious Educational Gameplay
Jongchan Park*, University of Georgia, USA
Georgia Hodges, University of Georgia, USA
Xiaoming Zhai, University of Georgia, USA

AI-Enhanced Inquiry, Learning Progression, & Engineering Design

Strand 12: Technology for Teaching, Learning, and Research
22-Apr-26, 9:00-10:30
Location: Jefferson A (L4)

Stand-Alone Paper
Enhancing Scientific Inquiry Self-Efficacy in Junior High Students: The Role of a Heuristic-Questioning AI Chatbot
Jiaojiao Hui*, The University of Hong Kong, China
Chen Chen, The University of Hong Kong, China
Zhiping Qiu, Hangzhou Yinhu Experimental Middle School, China
Guojun Xu, Hangzhou Yinhu Experimental Middle School, China
Jiaxin Chen*,The University of Hong Kong, China

Stand-Alone Paper
Impact of an AI Enhanced Inquiry Sequence on Students Integration of Ideas about Energy Transfer
Allison Bradford*, University of California, Berkeley, USA
Libby Gerard, University of California, Berkeley, USA
Marcia Linn*, University of California, Berkeley, USA

Articulating Ecological and Political Crises and a Crisis of Ethics in Science Education

Strand 13: History, Philosophy, Sociology, and Nature of Science
22-Apr-26, 9:00-10:30
Location: Seneca (L4)

Symposium
Articulating Ecological and Political Crises and a Crisis of Ethics in Science Education
Matthew Weinstein*, University of Washington-Tacoma, USA
Jesse Bazzul*, University of Regina, Canada
David Blades*, University of Victoria, Canada
Shakhnoza Kayumova*, University of Massachusetts Dartmouth, USA
Sophia Jeong*,The Ohio State University, USA
Andrea Henrie*, Vanderbuilt University, USA

Heather Johnson, Vanderbuilt University, USA
Teo Keifert, University of North Texas, USA
Ashlyn Pierson, The Ohio State University, USA

Sustainability Education and Student Agency in K–12 Contexts

Strand 14: Environmental Education and Sustainability
22-Apr-26, 9:00-10:30
Location: Jefferson B (L4)

Stand-Alone Paper
Bringing Sustainability Issues into the Classroom: Interdisciplinary Challenge-Based Learning in Secondary Education
Bart Schutte*, Eindhoven University of Technology, Netherlands
Duru Bayram, Eindhoven University of Technology, Netherlands
Johanna Vennix, Eindhoven University of Technology, Netherlands
Jan van der Veen, Eindhoven University of Technology, Netherlands

Stand-Alone Paper
Science Teachers' Beliefs and Contributions to Children's Access to Biodiversity Within the School Day
Allison Antink-Meyer*, University of Missouri-St. Louis, USA
Soo Won Shim, Illinois State University, USA
Ryan Brown, Illinois State University, USA

Stand-Alone Paper
Opportunities for Student Agentic Action in K-12 Sustainability Education: A Systematic Review
Michelle Jordan*, Arizona, USA
Emmanuel Adeloju*, Arizona State University, USA
Andrea Weinberg, Arizona State University, USA

Inspiring Science Participation Among All Ages and Backgrounds: Evaluations From NASA's Science Activation Program

Strand 15: Policy, Reform, and Program Evaluation
22-Apr-26, 9:00-10:30
Location: Capitol Hill (L3)

Related Paper Set
Aviation Weather Mission: Evaluating Data Collection Efficacy in a Youth Citizen Science Project
Matt Nyman*, Oregon State University, USA
Heather Fischer*, Oregon State University, USA
Theresa Schwerin, Institute for Global Environmental Strategies, USA
Marilé Colón Robles, NASA Langley Research Center, USA
Shannon Babb, Civil Air Patrol, USA

Related Paper Set
Reflecting on a Stratospheric Ballooning Education Project's Implementation With Participatory and Empowerment Evaluation Approaches
Beth Covitt*, University of Montana, USA
Angela Des Jardins, Montana State University, USA

Related Paper Set
From Professional Learning to Practice: Educator Implementation of Place-Based, Data-Rich Earth Science Instruction Through PLACES
Stephanie Wilkerson*, Magnolia Consulting, USA
Holland Banse*, Magnolia Consulting, USA

Related Paper Set
Research and Evaluation Practices to Engage with Neurodivergent Teens in STEM Programs
Andrew Grillo-Hill*, WestEd, USA
Rasha Elsayed, WestEd, USA
Kimberly Nguyen, WestEd, USA
Karen Melchior, WestEd, USA
Joshua Valcarcel,WestEd, USA

Interactive Communities in Science Education: Educators and Communities Shaping STEM Learning

Strand 2: Science Learning: Contexts, Characteristics and Interactions
22-Apr-26, 10:45-12:15
Location: Jefferson A (L4)

Stand-Alone Paper
Balancing Compassion and Accountability: Insights from COVID-19
Melissa Demetrikopoulos, Institute for Biomedical Philosophy, USA
Molly Weinburgh*, Texas Christian University, USA
Andreas Thompson, Institute for Biomedical Philosophy, USA
Zhan Shi, Texas Christian University, USA
John Pecore*,University of West Florida, USA
Dean Williams, Texas Christian University, USA

Stand-Alone Paper
Synchrony, Community, and Personhood as Becoming-Together: Understanding Interactive Context in Science Education through Activity Processes
Katherine Bruna*, Iowa State University, USA
Lyric Bartholomay*, University of Wisconsin, Madison, USA

Stand-Alone Paper
Counselors, Classrooms, and Community: Exploring Rural Educators' Roles in Supporting Project-Based STEM Learning
Devan Jones*, University of South Carolina, USA
Bryndle Bottoms, Institute for Rural Education and Development, USA

Teacher Development at the Intersection of Place, Climate, and Justice

Strand 3: Science Teaching — Primary School (Grades preK-6): Characteristics and Strategies
22-Apr-26, 10:45-12:15
Location: Willow A (L2)

Symposium
Teacher Development at the Intersection of Place, Climate, and Justice
Priya Pugh*, IslandWood, USA
Déana Scipio, IslandWood, USA
Kelsie Fowler, University of Washington, USA
Anastasia Sanchez, Puget Sound Educational School District, USA

Charlene Nolan,Western Washington University, USA
Jordan Sherry-Wagner, University of Washington Bothell, USA
Megan Bang, Northwestern University, USA
Carrie Tzou, University of Washington Bothell, USA

Graduate Student Teaching and Professional Development

Strand 5: College Science Teaching and Learning (Grades 13-20)
22-Apr-26, 10:45-12:15
Location: Juniper (L2)

Stand-Alone Paper
Graduate STEM mentoring through mentor and mentee perspectives: a qualitative study
Ana-Maria Topliceanu*, Augusta University, USA
Meg Blanchard*, North Carolina State University, USA

Stand-Alone Paper
Research Experience for Teachers (RET) as a site for graduate students' professional development
Kyle Tomczak*, University of Illinois Chicago, USA
Minjung Ryu, University of Illinois Chicago, USA

Stand-Alone Paper
Departmental Supports or Barriers to Graduate Student Teaching Professional Development (GS TPD): An Interview Study
Heather Green*, Middle Tennessee State University, USA
Eric Akuoko, St. John's University, USA
Alyssa Cotrell, Middle Tennessee State University, USA
Gili Marbach-Ad, University of Maryland, USA
Kristen Miller,University of Georgia, USA
Elisabeth Schussler, University of Tennessee, USA
Grant Gardner, Middle Tennessee State University, USA

Networks, Co-Design & System-Level Change

Strand 6: Science Learning in Informal Contexts
22-Apr-26, 10:45-12:15
Location: Columbia (L4)

Stand-Alone Paper
XXX [Removed for Blind Review] Program Improvement: Connected Science Learning for Local Socioecological Engagement
Todd Campbell*, University of Connecticut, USA
Rebecca Van Tassell*, University of Connecticut, USA
Laura Cisneros, University of Connecticut, USA
Nicole Freidenfelds, University of Connecticut, USA
Laurel Pehmoeller,University of Connecticut, USA
Jonathan Simmons, Salem State University, USA
Anna Lindemann, University of Connecticut, USA
Heather Elliot-Famularo, University of Connecticut, USA
Cary Chadwick, University of Connecticut, USA
David Dickson, University of Connecticut, USA

Stand-Alone Paper
Transforming Informal Science Networks: Using Social Network Analysis to Advance Equity and Collaboration
Anica Miller-Rushing*, Associated Universities Inc., USA
Scott Byrd, Medomak Consulting, USA

Stand-Alone Paper
Design Thinking Approach to Co-creating Science Curriculum in Museum-School Partnerships Using the Double Diamond Framework
Wei-Ting Li*, National Sun Yat-sen University, Taiwan
Jen-Yuan Yeh, National Museum of Natural Science, Taiwan
Ying-Ying Liu, National Museum of Natural Science, Taiwan

Design Thinking, Phenomena, and Evidence-Based Reasoning: Shaping Future Science Teachers' Instructional Practices

Strand 7: Pre-service Science Teacher Education
22-Apr-26, 10:45-12:15
Location: Ravenna AB (L3)

Stand-Alone Paper
Implementation of Design Thinking on the Subject of Earthquakes: Experiences of Pre-service Science Teachers
Semanur Aras*, Kahramanmaraş Sütçü İmam University, Turkey
Ahmet TEKBIYIK, Kahramanmaraş Sütçü İmam University, Turkey

Stand-Alone Paper
Building on Strengths: How a Phenomenon-Based Science Course Shapes Prospective Elementary Teachers' Visions of Teaching
Martha Canipe*, Northern Arizona University, USA
Ron Gray, Northern Arizona University, USA

Stand-Alone Paper
Trends and Gaps in Elementary Science Pedagogical Content Knowledge Research
David Santibáñez*, Finis Terrae University, Chile
Alejandro Vega-Muñoz, Central University of Chile, Chile
Claudia Vergara, Alberto Hurtado University, Chile

Advancing Equity and Justice in Science Teaching: From Coursework to Career-Long Development

Strand 7: Pre-service Science Teacher Education
22-Apr-26, 10:45-12:15
Location: Ravenna C (L3)

Stand-Alone Paper
Context-Dependent Equity Framings Across Coursework in Elementary Science Teacher Preparation
Wanjoo Ahn*, Michigan State University, USA
Christina Schwarz, Michigan State University, USA

Stand-Alone Paper
Supporting Equity- and Justice-Seeking Science Teaching Through a

Career-Spanning Professional Learning Community
William Lindsay, University of Colorado Boulder, USA
Catalina Arboleda Hernandez*, University of Colorado Boulder, USA
Taylor Marino Fallik, University of Colorado Boulder, USA
Ian Her Many Horses, University of Colorado Boulder, USA
Valerie Otero,University of Colorado Boulder, USA

Stand-Alone Paper
Reframing Science and Disability in Teacher Preparation: Insights from an Asynchronous Elementary Science Methods Course
Suzanne Patzelt*, Touro University, USA
Danielle Rhemer, Touro University, USA
Ashley Pollitt, The College of New Jersey, USA
Karen Woodruff, Kean University, USA

Stand-Alone Paper
Building Science Teacher Agency Through Equity, Sensemaking, and Three-Dimensional Learning and Intentional Course Design
Alison Mercier*, University of Wyoming, USA
Meenakshi Sharma, Mercer University, USA
Anica Miller-Rushing, Associated Universities Inc., USA

Learning from a Local Longitudinal Network: Building Elementary Multilingual Classroom Cultures of Interdependence and Care

Strand 8: In-service Science Teacher Education
22-Apr-26, 10:45-12:15
Location: Greenwood (L3)

Symposium
Learning from a Local Longitudinal Network: Building Elementary Multilingual Classroom Cultures of Interdependence and Care
Jessica Thompson*, University of Washington, USA
Janaki Nagarajan, University of Washington, USA
Camille Ungco-Santos, University of Washington, USA
Hsin-Jung Li, University of Washington, USA
Ruby Geballe, University of Washington, USA
Grace Cornel Gonzales, University of Washington, USA
Nancy Hernández-Zamarripa, University of Washington, USA
Matt Stewart, University of Washington, USA
Iman Khalaf, University of Washington, USA
Sarah Lee, University of Washington, USA

Advancing equity and leadership in science education

Strand 8: In-service Science Teacher Education
22-Apr-26, 10:45-12:15
Location: Issaquah AB (L3)

Stand-Alone Paper
District science coordinator frames for equity in STEM
Sara Porter*, University of North Carolina at Greensboro, USA

Stand-Alone Paper
Negotiation of Science Teaching in a 15 Year Research-Practice Partnership
Scott McDonald*, The Pennsylvania State University, USA
Jonathan McCausland*, Iona University, USA

Stand-Alone Paper
Talk or Text? Anal"ing Science Teacher Mentors' Written and Verbal Feedback to Mentees
Lynn Huff*, North Carolina State University, USA
Soonhye Park, North Carolina State University, USA
Grace Carroll, North Carolina State University, USA
Laura Chalfant, North Carolina State University, USA
Katie Glover,North Carolina State University, USA
Khalid Alharbi, North Carolina State University, USA
W. Reynolds, North Carolina State University, USA
Scott Ragan, North Carolina State University, USA
Jason Painter, North Carolina State University, USA

Stand-Alone Paper
Gendered Pathways to Leadership: Examining Sources of Support and Challenges to Science Education Leadership
Elizabeth Lewis*, University of Nebraska-Lincoln, USA
Elizabeth Hasseler*, University of Nebraska-Lincoln, USA
Rachel Benzoni*, University of Nebraska-Lincoln, USA
Lawrence McElravy, University of Nebraska-Lincoln, USA
Wendy Smith,University of Nebraska-Lincoln, USA

Centering Student Voice: Tools for Gathering Experience Data to Inform Science Assessment Design and Practice

Strand 10: Curriculum and Assessment
22-Apr-26, 10:45-12:15
Location: Ballard (L3)

Symposium
Centering Student Voice: Tools for Gathering Experience Data to Inform Science Assessment Design and Practice
Cari Herrmann-Abell*, BSCS Science Learning, USA
Jean Flanagan, BSCS Science Learning, USA
Abraham Lo, BSCS Science Learning, USA
Clarissa Deverel-Rico, BSCS Science Learning, USA
Jeffrey Snowden, BSCS Science Learning, USA

Andy Brubaker, BSCS Science Learning, USA
Melissa Campanella, University of Colorado, USA
Dennis Lee, BSCS Science Learning, USA
Patricia Olson, BSCS Science Learning, USA
Erin Furtak, University of Colorado, USA

Narrating teacher and scientist identity development in science

Strand 11: Cultural, Social, and Gender Issues
22-Apr-26, 10:45-12:15
Location: Aspen (L2)

Stand-Alone Paper
Investigating affective science teacher identity development among potential science teachers
Emily MacLeod*, McGill University, Canada
Pascale Saint-Denis, McGill University, Canada
Carolina Cruz-Vinaccia, McGill University, Canada
Allison Jardim Gonsalves, McGill University, Canada

Stand-Alone Paper
The Quilted Lives of Career Change Science Teachers of Color: A Narrative Inquiry
Jonathan Tam*, Teachers College, USA
Felicia Mensah, Teachers College, USA

Stand-Alone Paper
Constructing Science Identities: Insights from Filipino Educators
Dannipog Dennis*, University of The Philippines, Philippines
Katherine Wade-Jaimes, University of Nevada, USA
PrincesRaymunda Gatan, University of The Philippines, Philippines
Loise Angelica Oruga, University of The Philippines, Philippines

Stand-Alone Paper
Investigating the role of scientists' salient identities in navigating failure experiences
Manuela Mejia*, University of Colorado, USA
Sandhya Krishnan, University of Colorado, USA
Lisa Corwin, University of Colorado, USA

AR/VR-Enhanced Science Learning

Strand 12: Technology for Teaching, Learning, and Research
22-Apr-26, 10:45-12:15
Location: Capitol Hill (L3)

Stand-Alone Paper
The Impact of Tangible Augmented Reality on Students' Understanding of Phosphate Runoff
Amber Meeks*, North Carolina State University, USA
M. Jones, North Carolina State University, USA
Caitlin Haedrich, North Carolina State University, USA
Kathleen Bordewieck, North Carolina State University, USA
Tanzimul Ferdous,North Carolina State University, USA
Adrian Kuhlman, North Carolina State University, USA
Toluwalase Salako, North Carolina State University, USA
Madeline Stallard, North Carolina State University, USA

Stand-Alone Paper

Immersive Learning Anal"ed: An Eye-Tracking Study about a VR-based Physics Experiment

Matthias Klassen*, Institute for Mathematics and Physics Education, Physics Education Research Group, Leibniz University Hanover, Germany
Salome Flegr, Chair of Physics Education, TUD Dresden University of Technology, Germany
Gunnar Friege, Institute for Mathematics and Physics Education, Physics Education Research Group, Leibniz University Hanover, Germany

Stand-Alone Paper

Exploring the Materiality of Representation in Chemistry Student Learning with Augmented Reality Molecular Models

Song Wang, California State University, Dominguez Hills, USA
Stanley Lo, University of California, San Diego, USA
Rou-Jia Sung, Carleton College, USA
Thomas Bussey, University of California, San Diego, USA

Stand-Alone Paper

Supporting Geoscience Multimedia Learning With an Intelligent Attention Guidance Technology

Muhammad Rehman, University of Florida, USA
Do Hyong Koh, University of Florida, USA
Priyadharshini Prasad, University of Florida, USA
Nazanin Adhami, University of Florida, USA
Chih Hsuan Lin,University of Florida, USA
Jonathan Martin, University of Florida, USA
Ellen Martin, University of Florida, USA
Kara Dawson, University of Florida, USA
Albert Ritzhaupt, University of Florida, USA
Pasha Antonenko, University of Florida, USA

CS, CT, Robotics, & Project-Based Computing in STEM

Strand 12: Technology for Teaching, Learning, and Research
22-Apr-26, 10:45-12:15
Location: Virginia (L4)

Stand-Alone Paper

Scalable STEM Education Intelligence Extraction: From Personality Assessment to Comprehensive Professional Wellbeing Analysis

Derric Cox*, Wright State, USA
Tanvi Banerjee, Wright State, USA
William Romine, Wright State, USA

Stand-Alone Paper

Which Computational Thinking Skills Matter for AI-Mediated Science Learning? Gender-Comparative PLS-SEM Study in Medical Education

Hung-Che Lin*, National Defense Medical University, Taiwan
Chin-Sheng Lin, National Defense Medical University, Taiwan
Min-Hsien Lee, National Taiwan Normal University, Taiwan
Tzung-Jin Lin, National Taiwan Normal University, Taiwan
Chia-Ching Lin,National Kaohsiung Normal University, Taiwan
Jiun-Yu Wu, Southern Methodist University, USA

Chin-Chung Tsai, National Taiwan Normal University, Taiwan
Guo-Li Chiou, National Taiwan Normal University, Taiwan
Jyh-Chong Liang, National Taiwan Normal University, Taiwan

Stand-Alone Paper
Exploring Student Experiences in a CS-Integrated, Project-Based Ocean Science Curriculum Using Educational Robotics
Xin Xia*, University of Virginia, USA
Jennifer Chiu, University of Virginia, USA
Kim Wilkens, University of Virginia, USA

Stand-Alone Paper
From Knowledge to Practice: How Professional Learning Shapes CS Teaching in Elementary Schools
Khushbu Singh*, University of Virginia, USA
Jennifer Maeng*, University of Virginia, USA

Beyond the Competent Outsider: Visions of Science Literacy Shaping Engagement With Science in Everyday Life

Strand 13: History, Philosophy, Sociology, and Nature of Science
22-Apr-26, 10:45-12:15
Location: Seneca (L4)

Related Paper Set
Ecologies of Trust and Representation: Rethinking the "Insider" and "Outsider"
Eric Kirk*, Utah State University, USA
Daniel Pimentel*, University of Alabama, Tuscaloosa, USA

Related Paper Set
Gotta Catch 'Em All: Fiction and Fandom as a Context for Becoming a Competent Outsider
Lundgren Lisa*, Utah State University, USA
Eric Kirk, Utah State University, USA
Gabriel-Philip Santos, Ramond M. Alf Museum of Paleontology, USA
Earyn McGee, Independent Researcher, USA

Related Paper Set
Experiential learning as a bridge between school science and real-world problems for science civic engagement
Amy Dunbar-Wallis*, University of Nebraska, USA
Jenny Dauer, University of Nebraska, USA
Christine Haney Douglass, University of Nebraska, USA

Related Paper Set
Science Teachers as a Public for Science: Living as Insiders and Outsiders to Science
Sam Evans*, University of Wisconsin-Madison, USA

Place, Culture, and Community in Environmental Science Learning

Strand 14: Environmental Education and Sustainability
22-Apr-26, 10:45-12:15
Location: Jefferson B (L4)

Stand-Alone Paper
From Enjoyment to Engagement: How Place-Based Citizen Science Cultivates

Pro-Environmental Dispositions in Youth

Noam Brenner*, Technion - Israel Institute of Techology, Israel
Dalit Lan*, Technion - Israel Institute of Techology, Israel
Tali Tal*, Technion - Israel Institute of Techology, Israel

Stand-Alone Paper

Fostering Environmental Justice Consciousness Through Culturally Sustaining STEM Education in Hispanic Border Communities

Uma Ganesan*, University of Texas Rio Grande Valley, USA
Angela Chapman*, University of Texas Rio Grande Valley, USA

Stand-Alone Paper

Connecting Science Learning to Local Contexts: Outcomes from a Multi-Phase, Teacher–Scientist Curriculum Project

Susan Gomez Zwiep*, BSCS Science Learning, USA
Jill Grace*, WestED, USA
Katy Nilsen*, WestED, USA
Aaron Soo Ping Chow, WestED, USA
Ashley Ivelan, WestED, USA

Meet the Market: Cultural Connections at Pike Place with the International Committee

22nd Apr 26, 13:00-15:00
Location: Offsite

Social Event

Organizers
Sahar Alameh, University of Kentucky, Lexington, Kentucky, USA
Christelle Fayad, Texas Christian University, Fort Worth, Texas, USA

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