

2022 CONFERENCE



CULTIVATING ENSEMBLES

EXPLORING ACROSS STE{A}M

NOVEMBER 10 - 11TH, 2022

www.cultivatingensembles.com



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WELCOME

Dear Colleagues and Friends,

Welcome to Cultivating Ensembles 2022: *Exploring Across STE{A}M*! We are excited to have you join us for our virtual conference this Thursday and Friday. We invite you to log on at 10am ET to playfully warm up for the day's events and our programming will start promptly at 10:30am ET.

We are honored to host our keynote speaker Dr. Quincy K. Brown, Director of Space STEM and Workforce Policy at the National Space Council in the Office of the Vice President of the United States and our plenary speaker Dr. Omar Ali, Dean of Lloyd International Honors College at the University of North Carolina at Greensboro. Our speakers will present at 4:30pm ET on Thursday and 1:15pm ET on Friday, respectively. More information about our speakers can be found [here](#).

The conference is organized by volunteers who are passionate about what we can learn and create together in arts, humanities, and STEM. We are thrilled to have you join us as we create together, Cultivating Ensembles 2022: *Exploring Across STE{A}M*.

We encourage all of you to get to know each other and attend each other's sessions as you are able. A streamlined conference program is available on [our website](#). In addition, please find a full conference program, complete with abstracts, attached as a PDF.

We are excited to learn, perform, and play alongside you all! Only two sessions are scheduled at any given time. Our schedule includes 90 minute workshops, 45 minute sessions, 10 minute talks, Share Fair presentations and lightning talks.

The Share Fair will take place in the [CE Lounge](#) in Gather.town, a virtual space designed to enable rich informal conversations similar to a real lounge. In the CE Lounge, you can meet, chat, and mingle with your colleagues in small groups and one-on-one (you can even play a game or play a virtual piano together if you like). You may stop by the CE Lounge at any time on Thursday and Friday (it is available 24 hours a day), and you are welcome to peruse the Share Fair installations on your own at your convenience. Chrome or Firefox will work best for accessing the CE Lounge. Volunteers will staff Help Desk during meal breaks and during the Share Fair sessions to assist anyone with technical difficulties navigating Gather.town. See the attached conference program for the Share Fair schedule.

Please remember to stay connected with the CE community by [following CE on Twitter](#) or by [joining our Facebook group](#).

With appreciation and excitement,
Jim Martinez and Barbara Natalizio
Co-Chairs, Cultivating Ensembles Conference 2022

SPONSORS



improvscience

Discovery at Work in Play · Webinars & Workshops. Engage. Interact. Collaborate. Your people will come away knowing what it means to be seen, heard and valued.



RIDEFLYVIEW

Ride Fly View

Check out our views of landscapes, structures, events, flights and rides. We also capture and share footage from airport arrivals and departures, automobile trips, bicycle and boat rides, and cruising altitudes. Join our growing online community and add our hashtag #rideflyview to your own photos and videos. Contact us for drone photos and videos or other types footage, including slow motion, hyper-lapses and more!



UNC GREENSBORO

Lloyd International
Honors College

Lloyd International Honors College

Lloyd International Honors College (LIHC) provides motivated, high achieving undergraduate students in all fields of study with an enhanced education that has an international focus. LIHC is an intellectually engaged community devoted to fostering critical thinking, global awareness, and strong preparation for professional, civic, and personal pursuits using experiential learning opportunities and innovative pedagogies of performance, play, and improvisation.

CONFERENCE CHAIRS

Jim Martinez

– *Conference Co-Chair*



Barbara J. Natalizio

– *Conference Co-Chair*

Raquell Holmes

– *Founder*



Nick Gross

– *Program Committee Co-Chair*

Carolyn Sealton

– *Program Committee Co-Chair*



ORGANIZING COMMITTEE

Sarah Hug

– *Evaluation Committee Co-Chair*

Jame McCray

– *Evaluation Committee Co-Chair*

Simone Hyater – Adams

– *Organizing Committee*

Alex Lancaster

– *Organizing Committee*

Sofya Borinskaya

– *Website Committee Co-Chair*

Marisa Holzapfel

– *Website Committee Co-Chair*

Maria Qadri

– *Organizing Committee*

Sedona Young

– *Social Media Committee Chair*

INVITED SPEAKERS

KEYNOTE



DR. QUINCY K. BROWN

Dr. Quincy K. Brown is a Senior Policy Advisor in the White House Office of Science and Technology Policy. There she focuses on STEM Equity, Education, and Workforce policy. Quincy was previously the Head of Programs at AnitaB.org, a global organization dedicated to the development of women technologists. Quincy is co-founder of blackcomputeHER.org, a nonprofit organization focused on supporting the advancement of Black women and girls in computing and technology in education and in the workforce. She was previously Program Director for STEM Education Research at AAAS where she focused on pre-service STEM teacher education, innovation and entrepreneurship. She has also served in the Obama Administration as a Senior Policy Advisor and a AAAS S&T Policy Fellow as the NSF focused on CS and STEM Education.

For six years she was an assistant professor of computer science at Bowie State University. There she conducted HCI research and examined the design of intelligent tutoring systems and the design and usability of mobile devices and use of mobile devices in emergency situations by first responders. She completed her PhD as part of the Vision and Cognition Lab of the CS Department at Drexel University in Philadelphia, Pa While completing my doctoral studies she was a National Science Foundation GK-12 Fellow and a Bridges To the Doctorate Fellow. As a GK-12 Fellow she taught and developed STEM curricula for middle school students.

Quincy began her career in industry as a test and software quality engineer at Nokia, NEC, and Raytheon. Her research has been supported by Google, DOD, DHS, and the NSF.

INVITED SPEAKERS

PLENARY

OMAR H. ALI

Omar H. Ali is Dean of Lloyd International Honors College at the University of North Carolina at Greensboro. A historian of the global African Diaspora, he infuses performance and play into the culture and curricular offerings of his campus through workshops in improvisation, interdisciplinary course offerings, and programing that emphasizes the power of play and practical philosophy in people's learning and development. A graduate of the London School of Economics and Political Science, with a Ph.D. in History from Columbia University, he was named Carnegie Foundation North Carolina Professor of the Year.





2022 CONFERENCE



**CULTIVATING
ENSEMBLES**

EXPLORING ACROSS STE{A}M

DAY ONE

NOVEMBER 10TH, 2022



CULTIVATING ENSEMBLES

EXPLORING ACROSS STE{A}M

Thursday, November 10th

10:00 AM – 10:30 AM

Warm Up and Play

10:30 AM – 11:20 AM

Opening Main Room

11:20 AM – 11:30 AM

Break and Transition

11:30 AM – 12:15 PM

Session 1 – 45-minute sessions

Session Room A:

Can we improvise high-quality learning environments? – Jim Martinez

Session Room B:

Weeds: Art & Bio Perspectives – Gabe Duggan and Carol Goodwillie

12:15 PM – 12:30 PM

Share Out Main Room

12:30 PM – 1:30 PM

Meal Break

CE Gather Town Lounge is open

1:30 PM – 2:15 PM

Session 2 – 45-minute sessions

Session Room A:

SciArt Collaborations: Joys, Challenges, and Lessons Learned – Jacob Barney, C. Meranda Flachs-Surmanek, Carolyn Kroehler, Patricia Raun, Nina Stark, Daniel Bird Tobin

Session Room B:

A Respectful and Playful Exploration of an Ancestral Puebloan Rock Art Panel in Chaco Canyon – Cherilynn Morrow, G.B. Cornucopia

2:30 PM – 3:15 PM

Session 3 – 10 minute talks

Session Room A: Abstracts

- Gamifying Visual Science Communication: Playing a Design Gauntlet Game about mRNA Vaccine – Sara Doan
- Game Theory and Play in a Digital Writing Center – Hannah Ward
- Using Publicly Available Resources for Teachers Professional Development – Minkie English

Session Room B: Abstracts

- Improvising Our Way to Effective Climate Conversations – Lisa Yeager
 - Laudato Si': Understanding the Science of Climate Change through Artistic Reflection – Melinda Howard
 - Science in Song – Trisha Stan
-

3:15 PM – 4:25 PM

Share Fair

CE Gather Town Lounge

#1 Ride Fly View, Another Way to Play! – Dion Paul

#2 KreaSach Pro – A Playful Approach to Algorithms through a Creative Learning Setting with Educational Robots – Marisa Holzapfel, Nadine Dittert.

#3 Gamifying Visual Science Communication: Playing A Design Gauntlet Game about mRNA Vaccines – Sara Doan

#4 Game Theory and Play in a Digital Writing Center – Hannah Ward

#5 Using Publicly Available Resources for Teachers Professional Development – Minkie English

#6 Improvising Our Way to Effective Climate Conversations – Lisa Yeager

#7 Laudato Si and Me: Examples of Student Reflections on Science, Society, and Self – Melinda Howard

#8 Science in Song – Trisha Stan

4:30 PM – 5:30 PM

Keynote – Main Room

Quincy K. Brown, Director of Space STEM and Workforce Policy at the National Space Council in the Office of the Vice President of the United States – “Following My Passions at the Intersection of Education, Policy, and Practice”

8:00 PM – 9:30 PM

Evening Play Reading

The Great Understanding.

A Stage Reading – Jennifer Joy Pawlitschek

2022 CONFERENCE



CULTIVATING
ENSEMBLES

EXPLORING ACROSS STE{A}M

DAY TWO

NOVEMBER 11TH, 2022





CULTIVATING ENSEMBLES

EXPLORING ACROSS STE{A}M

Friday, November 11th

10:00 AM – 10:30 AM

Warm Up and Play

10:30 AM – 12:00 AM

Session 1: 90-minute workshops

Session Room A:

Storytelling from the Frontlines: Theatrical performances from conversations with frontline health workers – Marion Leary, Christina Eskridge

Session Room B:

Mindfulness of Physics (and Physics of Mindfulness) – Mackenzie Hawkins, Carolyn Sealton

12:00 PM – 12:15 PM

Share Out Main Room

12:15 PM – 1:15 PM

Meal Break and Discussion

CE Lounge is open

1:15 PM – 2:00 PM

Plenary Speaker – Main Room

Omar Ali, Dean of Honors College, UNCG – “Performance and Play in Academia: Building Culture and Community One Interaction at a Time”

2:00 PM – 2:45 PM

Session 2 – 45 minute sessions

Session Room A:

Biotheatrics: A Collaborative Journey of Biology and Theatre Students – Carol Goodwillie, Patricia (Patch) Clark

Session Room B:

Art of Data: Data as Art – Preeti Raman

3:00 PM – 3:45 PM

Session 3 – 10 minute talks

Session Room A: Abstracts

- Hold on—Stories of Triumph and Resilience in STEM – Bryan Dewsbury
- Using Oral History Interviews to Expand Perspectives and Preserve Historically Excluded Narratives in STEM – Amber Wendler, Korin Jones, Mika Pagani, Gregg Quarles, Daniel Smith, Anza Mitchell, Emily Griffith, Patty Raun, Carrie Kroehler
- Making Change Happen at the Ronin Institute – Alex Lancaster, Arika Virapongse

Session Room B: Abstracts

- Seeing Birds and Biodiversity through Science and Art – Bryan Wang, David Livert, Sandy Feinstein, Samantha Kavky
 - Biology through Art: integrating artwork into biology courses – Mike Maxwell
 - Collaborating through Time and Space – Laura Peticolas, Aurore Simonnet
-

3:45 PM – 4:45 PM

Share Fair

CE Gather Town Lounge

#11 Embodied WireFrame for Science Educators – Muneeb Ur Rehman

#12 The Infrastructure of Inclusion: Innovative DEI at GEI – Nancy Watt

#13 Creating Connections, Drawing and Exploring Science Together – Sofya Borinskaya

#14 Hold On – Stories of Triumph and Resilience in STEM – Bryan Dewsbury

#15 Using Oral History Interviews to Expand Perspectives and Preserve

Historically Excluded Narratives in STEM – Amber Wendler, Korin Jones, Mika Pagani, Gregg Quarles, Daniel Smith, Anza Mitchell, Emily Griffith, Patty Raun, Carrie Kroehler

#16 Making Change Happen at the Ronin Institute – Alex Lancaster, Arika Virapongse

#17 Seeing Birds and Biodiversity through Science and Art – Bryan Wang, David Livert, Sandy Feinstein, Samantha Kavky

#18 Biology through Art: Integrating Artwork into Biology Courses – Mike Maxwell

#19. Collaborating Through Time and Space – Laura Peticolas, Aurore Simonnet

4:45 PM – 5:45 PM

Wrap Up and Collective Play – Main Room

Thursday Session 1: 11:30 am – 12:15 pm ET

Session Room A, 11:30 – 12:15

Can We Improvise High-quality Learning Environments?

Jim Martinez

New York Institute of Technology, NY, NY United States

Abstract: Attempts at bringing performance, play, and improvisation into formal learning environments are subject to criticism. Concerns about time on task, lowering standards, and relevance are often cited. In this interactive workshop, attendees will play, perform and share ideas about creating high-quality learning environments in institutional settings. Dr. Martinez has 20 years of experience improvising in learning environments. He has worked with elementary school students, graduate teacher education candidates, in-service public school teachers, undergraduate students, and higher education faculty.

Session Room B, 11:30 – 12:15

Weeds: Art & Bio Perspectives

Gabe Duggan, Carol Goodwillie

East Carolina University, Greenville, NC, United States

Abstract : The integration of art and science in education expands exploration, but also facilitates honing skills specific to the individual fields. This combination inherently presents new challenges that can lead to emergent thought within and between the fields.

In Spring of 2021 Biologist Dr. Carol Goodwillie and Artist M. Gabe Duggan co-taught an Honors course at East Carolina University titled, “Weeds: Art & Biology Perspectives.” This course used plants such as kudzu and cotton as reference points to introduce concepts in Plant Biology, Contemporary Art, and broader Socio-Economic implications inspired by an exploration of weedy plants and their role in human life.

Technical knowledge presented through Biology demonstrated the basic functions and structures of plants and the biological traits that make plants weedy and invasive. Strategies used in Art, such as drawing exercises and presentation of precedent works, were used to observe subjects from new perspectives. These lessons served as a starting point for explorations of Socio-Economic implications such as plant awareness disparity; human-centered application of values; and the power of language to shape the environment, our species' relationship with others, and with ourselves (eg. 'native' and 'invasive').

Students were invited to observe the plant subjects and consider their own presumptions of the subject through traditional and interactive teaching methods. Interactive lessons included exercises in drawing, sculpture, project-planning, and discussion. Drawing distilled observation skills and presented memorable initial encounters with terminology and diagnostic traits. Installation and sculptural practice promoted consideration of environment and material for unique needs. Public art proposals reflected on socioeconomic themes

explored throughout the semester and introduced students to varied paths in peer-reviewed publication as well as accessible dissemination of information.

Here we present our approach to fluently integrate practices in art and science not only to contribute to these fields, but to also build a space where deeper exploration can occur beyond the established disciplines. We invite the audience to participate in abbreviated versions of the exercises used in “Weeds” to observe firsthand the potential for transdisciplinary collaboration in the classroom.

Thursday Session 2: 1:30 pm – 2:15 pm ET

Session Room A, 1:30 – 2:15

SciArt Collaborations: Joys, Challenges, and Lessons Learned

Jacob Barney, C. Meranda Flachs-Surmanek, Carolyn Kroehler, Patricia Raun,

Nina Stark, Daniel Bird Tobin

Virginia Tech, Blacksburg, United States

Abstract

Come learn about our SciArt Collaboration projects, in which researchers and artists worked and played together to create artistic pieces about scientific research. This session will include the chance to participate in some of the exercises we developed to catalyze these creative projects. The project began in May of 2021 when 13 artists and 13 scientists spent a day together at Virginia Tech in a “collaboration incubator” workshop. Partners and teams who found synergies submitted proposals for creative projects that could communicate the scientist’s work, and eight projects were funded by Virginia Tech’s Center for Communicating Science. Funded projects included an aerial artist’s climate change adaptation performance in coastal North Carolina, a series of dance workshops aimed at helping engineering graduate students learn to navigate some of the discomforts of field research, a musical composition, poetry, video, and opera performance related to research on children’s perceptions of gender and science, digital video projections on invasive plant species on the Virginia Tech campus, and more. Session presenters include some of the projects’ artists, scientists, and workshop facilitators, who will briefly describe the eight collaborative projects; share joys, challenges, and key “lessons learned”; and engage session participants in sample collaboration exercises.

This session will include a 15-minute presentation about the collaboration incubator workshop, the eight collaborative projects that emerged, and lessons learned. In addition, session facilitators will engage session participants in two Zoom-appropriate exercises from the collaboration incubator that catalyzed the projects and provide time for questions and answers.

Session Room B, 1:30 – 2:15

A Respectful and Playful Exploration of an
Ancestral Puebloan Rock Art Panel in Chaco Canyon

Cherilynn Morrow (1), G.B. Cornicopia (2)

(1) *Southwest Research Institute*, (2) *National Park Ranger Service Ranger (Ret.)*

Abstract

In this session, the authors will offer a basic description (no interpretation) of an Ancestral Puebloan rock art panel (in Chaco Canyon, NM) that gained attention about 5 years ago in articles run by Smithsonian and Scientific American. To explore possible interpretations of the panel, each session participant (or small groups of participants depending on the number present) will be given a short time to develop a 1-minute presentation for the group that interprets the rock art panel from a real or fictional perspective of their choice. Up to 8 presentations will be shared out while other participants use an active-listening process to identify common themes, ideas, and insights on a Jam Board. The authors will then share a summary synthesis of Jam Board responses and a specific interpretation of the rock art panel that is being used as the heart of a novel outreach program of national scope being funded by a federal agency.

Thursday Session 3: 2:30 pm – 3:15 pm ET

Session Room A Talks, 2:30 – 3:15

Game Theory and Play in a Digital Writing Center

Hannah Ward

The University of North Carolina at Greensboro, Greensboro, United States

Abstract

"Game Theory and Play in a Digital Writing Center" by Hannah Ward describes how the components of Digital Game Theory can inform the development of strategies for learning and peer-tutoring within digital spaces. Online formats of learning create a space for play and, much like a videogame, contain creative patterns of engagement that impact the effectiveness of online learning as a whole. Principles and interactions typically found in an online writing center function much like videogames: The interactions between both people and the digital environment itself affect the outcomes. Finally, the work suggests practical applications for this framework in online writing center environments.

The audience will be asked about how the pandemic and digital learning impacts their personal teaching or learning strategies. Audience members will be encouraged to think critically about their own experiences in order for them to successfully understand how the framework of Digital Game Theory applies to all types of online learning. Additionally, I will ask about the audience's experiences with play in learning environments.

By the end of the session, participants will be able to:

- Understand the components of Digital Game Theory
- Understand how these components apply to online peer-tutoring and peer-consulting activities
- Implement strategies related to game theory in their own teaching, tutoring, and learning

Gamifying Visual Science Communication:
Playing A Design Gauntlet Game About mRNA Vaccines

Sara Doan

Kennesaw State University, Marietta, United States

Abstract

Communicating science through visual design is a crucial skill set for students across STEM, communication, and design majors, particularly when communicating scientific information about COVID-19. STEM students must balance their technical knowledge with perceptual strategies for guiding users' attention (Burns et al., 2021; Franconeri et al., 2021). Visual design students must balance their desires to create visually engaging work without obscuring the information non-experts need to understand (Cairo, 2019). All students should also understand how visual design can reinforce existing ethical hegemonies (Olman, 2021) or contribute to spreading misinformation online (Doan, 2021). One way to make these lessons memorable for students is through gamification.

Gamifying visual communication analysis increases engagement by making students compare designs and defend their choices within familiar rules and frameworks. During the COVID-19 pandemic, many students engaged with online social games like Jackbox's Quplash or Innersloth's Among Us. Using that same central engagement in the classroom is fun and memorable, and promotes structured debate through comparison.

In this presentation, I provide a rationale for and present an example of a visual design gauntlet created to engage visual design students with science communication about how mRNA COVID-19 vaccines work. A design gauntlet, as popularized by Jackbox Game's T.K.O., a game where participants seek to design the most popular T-shirt, asks players to find the strongest design by comparing two at a time, then voting for a winner. The winner of each design match-up then advances against a new competitor.

Before this activity, I collected six infographics that explain how mRNA vaccines work, including one that uses visual design to communicate vaccine misinformation. I also introduced and scaffolded vocabulary around headings, graphics, and visual processes, as discussed previously in the class. During the first match-up, I show a slide with two infographics about how mRNA vaccines develop immunity against COVID-19. Then, students vote for the winner. The winner of match-up one is presented next to a new infographic. Students vote again. We repeat the process twice more, then discuss what visual features helped students understand the process of mRNA immunity, which design features helped build trust in the information, and which of these infographics they would most likely share with their communities.

Activities that gamify comparison and analysis can be powerful tools for building awareness of a process, understanding how to visually communicate information, and fostering community through fun and structured discussion.

Using Publicly Available Resources for Teachers Professional Development

Minkie English

Ronin Institute, Laurelton, United States

Also at Share Fair A, Booth 5

Abstract

Most teachers' professional learning environments are not typically artist led with opportunities for dramatic expressions or visual experimentation as forms, or modalities, of teaching and learning. But what if more learning environments were? Using publicly available resources, such as working artists, co-facilitation can be guided by and between professional development coaches and artists, as trainers. This guided co-facilitated training can provide participants with creative freedom as didactic work modes that not only centers the trainers, but also includes the participants concurrently as trainers and not just trainees in the learning environment; which acknowledges and takes into account their pre-existing expertise and potential as prospective trainers. Instead of being a passive learner, the trainees become active participants in the training sessions. For the purpose of this presentation, the creative freedom(s) that are discussed involve the following didactic methods: lecturing, demonstration, field practicals with excursions, group work, and play with making as a central learning modality.

These methods of learning and work lend themselves to past research conducted on the specific features of effective professional development, for improvements in student learning outcomes. As such, this presentation focuses on work done on-site in New York City at an education institution and a cultural institution and also virtually, for teachers professional development. Findings were not quantitatively measured and are not qualitatively conclusive, but present the case that effective professional development has several shared features. According to Darling-Hammond, Hyler & Gardner (2017), these features are focused on content that incorporates active learning based on adult learning theory, job-embedded supported collaboration which are modeled by effective practice with coaching and support from experts who provide opportunities for feedback and reflection, for a sustained period of time.

Session Room B Talks, 2:30 - 3:15

Improvising Our Way to Effective Climate Conversations

Lisa Yeager

Miami University, Seattle, United States

Also at Share Fair A, Booth 6

Abstract

This presentation will bring participants along on the journey I have been on as a Cee-Change Fellow with the North American Association for Environmental Education. The session will be delivered in a 'choose your own adventure' format that gives the audience members the choice of topics to explore and discuss about the Climate Conversations

community action project. The project is all about engaging new and different people in new and different ways about an intersectional and existential crisis that we must come together to address: climate change. Climate researchers such as The Nature Conservancy's Chief Scientist, Katherine Hayhoe, tell us that the hummer on thing we can be doing to address climate change is talk about it. Yet, regular surveys from the Yale Climate Center for Climate Communications continue to underscore the reality that most Americans are not talking about it.

This initiative aims to be part of the solution to this challenge, by using interactive, improvisation-techniques to equip volunteer educators from informal learning environments like zoos, museums and aquariums to gain confidence and competence in holding conversations with the public about climate change. The training that has been developed leverages best practices and techniques that have been researched and honed by organizations such as the National Network for Ocean and Climate Change Interpretation and the CLEO Institute. The improvisational frameworks and community of practice methods created through this initiative have been piloted and shown to be effective in training volunteers in the basics of climate science, climate change impacts, solutions, and the importance of talking with the public about it. Further, this initiative has served as a foundation for the volunteers to co-create a solutions repository and talking points for use in their own improvisational, interpretive interactions. Research is underway this fall under the umbrella of this initiative to pilot story circle methods to sustain communities of practice with these volunteer communities.

Laudato Si': Understanding the Science of Climate Change through Artistic Reflection

Melinda Howard

Gonzaga University

Abstract

Climate change and other environmental challenges are scientifically well documented. However, climate change is more than a scientific issue, as human societies both contribute and are impacted by climate change. A non-majors introductory Biology course, Human Ecology, at a private liberal arts university was assigned the encyclical Laudato Si' written by Pope Francis as part of their required reading. This encyclical covers the science of climate change and biodiversity loss coupled with an ethical examination human responsibility. Students were allowed to creatively journal about their reflections. Responses included visual art, poetry, and music. This presentation will showcase samples of student work and reflections on how the readings impacted their understanding of the climate and biodiversity crises.

Science in Song

Trisha Stan

Minerva University, Newton, United States

Abstract

Popular music has a way of getting into your head and staying there because human brains are wired for memorable music. I take pop songs and “improve” them by making them about science (science satire songs) to engage audiences with science in a fun and engaging media. I started creating parody songs for a podcast I co-founded in graduate school in 2013 (Goggles Optional), and have recently started to create science parody songs for social media (@trishastan42 on TikTok and Instagram). In this presentation, I will share a few samples of science song satires and invite participants to consider how they can draw upon music and pop culture to engage students with science.

Thursday Keynote, 4:30 pm – 5:30 pm ET

Main Room

Quincy K Brown

*Director of Space STEM and Workforce Policy at the National Space Council
in the Office of the Vice President of the United States*

Following My Passions at the Intersection of Education, Policy, and Practice

Trained as an electrical engineer and computer scientist, Quincy’s career has spanned the industry, academia, non-profit, and federal government sectors. Through the years she has cultivated her own unique ensembles by following her passions, supporting leadership by Black women, and exploring play in learning. In this session, Quincy will highlight aspects of her journey that promoted her professional development as a scientist and leader and inspired and motivated her to build community. Join us to discover more about her past experiences connecting and learning, as well as her future aspirations!

Thursday Evening Play Reading, 8:00 – 9:30 ET

The Great Understanding

Jennifer Joy Pawlitschek

It’s 2045, and climate change is disrupting every aspect of life. An intentional community of scientists and engineers seeks shelter from the storms in underground dwellings. They must cope not only with internal controversies around technology, but also the much greater challenges of who belongs in the community. What does family really mean, when survival is on the line?

The reading will take 60 minutes; the discussion, 30 minutes. The 4 roles of the reading itself will be cast from conference attendees. Afterwards, a discussion will be facilitated about the themes of the play, and about what really works in art and in public discussion to influence, and ultimately change, public opinion.

Friday Session 1, 10:30 am – 12:00 pm ET

Session Room A, 10:30 am – 12 pm

Storytelling from the Frontlines:

Theatrical performances from conversations with frontline health workers

Marion Leary (1), Christina Eskridge (2)

1) University of Pennsylvania School of Nursing

2) Elevate Theatre Company

Abstract

Leveraging the work of a professional theater company, the University of Pennsylvania School of Nursing (Penn Nursing) partnered with Elevate Theatre Company, LLC (Elevate) to create a series of digital plays telling stories of frontline health workers. The Frontline Health Workers Digital Theater Project used the viewpoint of nurses, physicians, and those working in the hospital but not necessarily with patient-facing roles (e.g., transport, supply managers) as inspiration for two theatrical performances created by experienced playwrights and performed by professional actors.

First, Elevate facilitated two 90-minute storytelling workshops led by professional teaching artists, with frontline workers from Penn Nursing and Penn Medicine. The workshops leveraged applied theater techniques to engage frontline health workers in theater games, storytelling, and written activities to promote reflection, play, and collaboration among the participants. Following the workshops, the playwrights began building theater pieces reflecting their observations and the stories shared in the workshops. Penn Nursing supported the creative process by providing clinical accuracy checks and additional information about frontline health workers' experiences as requested by the playwrights.

Each of the theater pieces ran approximately 30-minutes followed by a 45-minute panel discussion. The panel discussion focused on the main theme of each play including covid-19, healthcare provider burnout, and racial injustice. Panelists included health workers with expertise in the topic areas and a diverse representation of the healthcare workforce, as well as the playwrights.

Session Room B: 10:30 am – 12:00 pm

Mindfulness of Physics (and Physics of Mindfulness)

Mackenzie Hawkins, Carolyn Sealfon

University of Toronto, Ronin Institute

Abstract

We use physics in space programs because it gives us the correct information to send probes on interplanetary voyages. Yet how much do we think about using physics to give us better mindful awareness of our own movement?

With lots of exploratory activities, we'll investigate how mindfulness of physics can help us move with a greater sense of ease and flow. We'll see how simple, rational explanations can help us open to the presence and calm of improved mind-body connection.

So much of our mental and emotional stress is fueled by regrets about the past and worries about the future. Yet physical initial conditions (position and velocity at the present time) encompass all past, present, and future information. In a final exercise and lively discussion, we'll explore these ideas through experiential exercises introducing the concept of nowflow.

Join us for a fast-paced, experiential integration of the well-being of mindfulness, tai chi, and Eastern philosophy with the clarity and rationality of basic physics, as taught by Tai Chi master and physicist Wonchull Park, author of *Way of Now: Nowflow for Meditation, Peak Performance, and Daily Life*.

For optimal participation, join with audio and video from a location where you have space to stand, move, and/or walk around as you are able. You'll come away from our time together with new possibilities for movement, presence, perception, and action.

This workshop will be almost entirely experiential and discussion-based. By the end of the session, participants will be able to understand the ways in which classroom data can be used to answer questions of interest to the learning community. They will also learn to critique visualization techniques and tools that may induce implicit or explicit bias in the classroom.

Friday Plenary Session, 1:15 pm – 2:00 pm ET

Main room

Performance and Play in Academia: Building Culture and Community

One Interaction at a Time

Omar Ali

Dean of UNCG, Lloyd Honors College

Even before he was born, Omar was playing in the amniotic fluid of his mother's belly. And upon his birth he reportedly said "Ta-Dah!" Ok, maybe not. But that would have been totally cool, right? Somehow becoming Dean of Lloyd International Honors College at UNC Greensboro, Carnegie Professor of the Year, and Knight of the Order of the Academic Palms by the French government (one wonders if some of these were made up), he has infused play, performance, and improvisation into the culture and structures of this little corner of academia. With over 1,000 students in the Honors College, how has this experiment in play gone? He'll share the challenges, opportunities, and downright failures of this journey he's been on over the past eight years with very dear colleagues at the university.

Friday Session 2, 2:00 pm – 2:45 pm

Session Room A, 2:00 – 2:45 pm

Biotheatrics: A Collaborative Journey of Biology and Theatre Students

Carol Goodwillie, Patricia (Patch) Clark

East Carolina University

Abstract

When theatre and STEM students collaborate, the integration of art and science can have meaningful impacts on both the presenters and the audience. In a collaborative project, theatre and biology undergraduates wrote and produced a play about trees for youth, with positive outcomes for the undergraduates involved, youth in the audiences, and the university and broader community.

At a large comprehensive university, theatre education and biology majors participated in a semester-long course that was team-taught by a biology and theatre education professor. Through short lessons and creative dramatics exercises, students in both disciplines taught each other about plants and theatre and then worked together to develop and perform an interdisciplinary play for youth. The script that emerged brought trees to life, focusing on their life cycles, interactions with animals, and ecosystem services. During subsequent semesters, the play was performed in different venues, adapting to multiple formats to accommodate stages of the COVID pandemic and finally culminating in a live, audience participatory performance.

In this interactive session we will share our approach, techniques and experiences, excerpts from the play, set design, and student products and reactions. We will then invite participants to explore, experience, and reflect on the process. In break-out groups, participants will develop characters and a storyline or short piece of dialog that explores a theme in science, then present it to the entire group. In a second short break-out session, participants will reflect on the process and how it might affect learning and attitudes about science.

Session Room B, 2:00 – 2:45 pm

Art of Data: Data as Art

Preeti Raman

University of Toronto

Abstract

Data is implicitly collected and often explicitly ignored in education settings. While most practitioners agree that information is the key to effective decision-making and like to use data to produce evidence that can be translated into improved learning outcomes, they are often faced with “too many tools, from linear regression to classification trees and even deep learning, with very little impact”. Much like singing and dancing, it is important to realize that data analysis is an art. Simply having tools at our disposal does not ensure a captivating output.

In this interactive session, we will explore the ways in which data from our everyday interactions in classrooms can be assembled, analyzed and visualized to answer questions of relevance to the learning community. As an intro activity, participants will be asked to share a question (with or individually or in small groups) they wish to answer about the current session.

We will then ask participants to engage with multi-modal data collection tools. These may include optional surveys, voice recordings, video recording etc. Participants will visualize and use this anonymized data from "our classroom" in a variety of ways (with the help of data visualization tools) to answer the question they submitted at the beginning.

Friday Session 3, 3:00 pm – 3:45 pm

Session Room A Talks, 3:00 – 3:45

Hold On – Stories of Triumph and Resilience in STEM

Bryan Dewsbury

Florida International University

Abstract

In this spoken word piece I explore the story of my journey in STEM as a first-generation college student of a retired, deceased pastor. Looking inward, I search the circuitous pathways of my ancestors and their social influences through the centuries, bringing their spirits into the present day to reflect on what it means to belong in STEM. More importantly, I will use this exploration to question what it means, as a member in STEM, to be full participant in a socially just society. In this exploration, I will center the Freirean philosophy of being shaped and being able to shape the societies within which we participate. This will be a less than 10-minute performance which will allow for questions and reactions upon conclusion or at the end of the panel.

Using Oral History Interviews to Expand Perspectives and Preserve Historically Excluded Narratives in STEM

Amber Wendler, Korin Jones, Mika Pagani, Kregg Quarles, Daniel Smith,

Anza Mitchell, Emily Griffith, Patty Raun, Carrie Kroehler

Virginia Tech

Abstract

We welcome you to come learn about our process of interviewing Black scientists as part of an oral history project. Starting in the spring of 2021, six graduate students from Virginia Tech supported by the Virginia Tech Center for Communicating Science took on the task of interviewing 19 Black scientists representing a wide range of career stages. Our project aimed at elucidating some of the triumphs and tribulations faced by Black people pursuing careers in science from a variety of perspectives. We hope to offer valuable insight into the process of starting and conducting an oral history project, with specific focus on the merits of such a project, interview techniques specifically tailored towards sensitive subjects, and gleaning information by organizing major themes from a collection of interviews.

Making Change Happen at the Ronin Institute

Alex Lancaster, Arika Virapongse

Ronin Institute

Abstract

The context for scholarship has changed. The cultural norms and incentives for scholarship today (e.g. 'publish or perish') were established during a now-outdated context for traditional academia (see Lancaster et al 2018). Such framing and assumptions no longer work in today's mainstream academia, let alone among the growing numbers of scholars and researchers that operate outside traditional academic institutions under different incentives, motivations, and business models.

The Ronin Institute has been working and developing new approaches to performing scholarship for the last 10 years to foster this much needed cultural change in scholarship. This has taken several forms: building our community of Research Scholars, as well as hosting Unconferences to work together to change the research culture as a whole. In 2021, the Ronin Institute and the Institute for Globally Distributed Open Research and Education (IGDORE) co-hosted the Scholarship Values Summit (SVS) to provide a space for participants to identify harmful scholarship-related systems that no longer work, and to define shared values in scholarship as a basis for creating new healthier systems that are more supportive of our goals as scholars and of society. After the Summit, participants created a series of three blog posts synthesizing the sessions and proposing next steps. In this Cultivating Ensembles short presentation we will describe how we have been balancing the building of our community of Research Scholars, with the necessary building of the governance and infrastructure. Through iterative experimentation within our community we have been attempting to balance both individual and collective goals of our Research Scholar. This includes experimenting within everything from how we organize and run our Working Groups, community-based development of our Code of Conduct, as well how we organize meetings such as our SVS 2021 Unconference.

Session Room B Talks, 3:00 - 3:45

Seeing Birds and Biodiversity through Science and Art

Bryan Wang(1), David Livert(2), Sandy Feinstein(1), Samantha Kavky(1)

1) Penn State Berks, 2) Penn State Lehigh Valley

Abstract

Maintaining biological diversity—safeguarding the variety of living things on earth—is essential for the health of the planet and humanity's well-being. To engage the public with local biodiversity—specifically birds—we have developed a program that combines science and the arts as complementary ways of experiencing nature. Guided by area birds, participants engaged in a group birdwatching experience. Then, over the subsequent four weeks, they watched birds on their own, wrote reflections, and created visual representations of the birds and birdwatching. The integration of experiences, as manifested in field notes, artwork, and writing, reinforced understanding of as well as interest in birds and their natural habitats. In short, participants gained a deeper appreciation for the natural world when seeing it in the contexts of both science and creative expression.

Biology through Art: Integrating Artwork into Biology Courses

Mike Maxwell

National University

Abstract

"Biology through Art" is a network of biology instructors and artists that explores the integration of artwork into biology courses. This approach is a response to calls from national advisory bodies for the integration of education in biology and the sciences with the arts and humanities, as well as emphasis on the college graduate as a scientifically literate member of society. I present unifying themes in art and science (observation, expression, communication), as well as themes in biology, such as symmetry, proportion, and color. I additionally present artistic media that have been employed in recent biology courses at National University, California State University Fullerton, and Eastern Illinois University, along with pilot data on student pre/post short-answer responses. The teaching approach embraced by "Biology through Art" shows several benefits to student learning. Active engagement in artwork optimizes in-class instruction time, which is particularly important for non-traditional students, who often juggle the competing demands of coursework, jobs, and family responsibilities. Pilot data of pre/post student responses indicate that expression through artwork increases student comprehension of concepts in biology. Furthermore, project activities, such as exhibitions of student artwork at museums, offer opportunities for student professional development and community outreach and engagement.

Collaborating Through Time and Space

Laura Peticolas, Aurore Simonnet

Sonoma State University

Abstract

We will take you through two personal journeys, as a space physicist and artist, through time and space. Our collaborations with artists and scientists have resulted in multiple projects. These vary from sonification of space physics data, a tiny book on atoms (published by a world-renowned artist), games, paper models, artwork on the cover of Nature magazine and others. We have worked with performance artists, astrophysicists, Indigenous researchers, Neurodiverse teens, teachers, and one another. Additionally, our work has resulted in many educational websites about earth and space science by combining art and science. Come join us in our space-time journey via an online facilitated engagement with these projects. Participants will provide interactive feedback on what we endeavor to do next in this collaborative space as you learn of what we have done in the past.

Share Fair Abstracts

Thursday Share Fair Abstracts, 3:15 – 4:25

Ride Fly View, Another Way to Play!

Dion Paul

Ride Fly View, New York, USA

Share Fair A, Booth #1

Abstract

This presentation is a short story about Ride Fly View—how it came to be and what it does today! Ride Fly View is an Aerial Cinematography business based in NYC, founded and operated by a licensed FAA Part 107 remote pilot. In addition to partnering with schools and organizations to deliver drone education and demonstrations to underserved communities, Ride Fly View also sells stock media online and provides aerial services for real estate, construction, landscapes, or any type of event. In this Fair Share presentation, participants will discover another way to play, through a virtual trip around the world via slides, conversation and immersive visual experiences.

Participants will be able to engage with an interactive map that features immersive aerial photos and videos captured in various locations across the globe. Imagine a clickable Street View tour that can be experienced from a desktop, mobile device or live in-person. By the end of the sessions participants will be able to learn about another way to play using immersive visuals and camera technology.

KreaSach Pro - A Playful Approach to Algorithms through a Creative Learning Setting with Educational Robots

Marisa Holzapfel (1) , Nadine Dittert(2)

(1) University of Greifswald, Greifswald, Germany

(2) University of Potsdam, Potsdam, Germany

Share Fair A, Booth #2

Abstract

The aim of the project is to give young students from elementary school access to programming on the one hand and to offer them room for creative development on the other (Hadzigeorgiou et al., 2012). Therefore, learning units for two similar robots, namely Bee-Bot and Cubetto, are developed, where children tell a story on an overarching theme (for example: "How does the bee get to the honeycomb?"). The story takes place on a matrix of prepared jigsaw pieces that can be rearranged and further designed by the children themselves. Some of the jigsaw pieces are painted with blackboard varnish, so that children can paint any pictures and thus express themselves creatively (Dittert et al., 2021). Stories are told by programming the robots and making them wander around their own story matrix.

The project goes beyond storytelling using Cubetto and Bee-Bot with their existing (mostly redefined) story mats. Here, children are free to create their own pathways and obstacles and hence they are allowed to create whole new worlds and to tell new stories. We want to allow children to become creators of completely new stories, that include their ideas, their own objects and actions. Overall, we are interested in approaches that foster children's creativity using programming and how they can be designed to empower children to express themselves creatively.

A mixed-methods approach will be used as the accompanying research. Throughout the activity, one researcher will write an observation protocol. Further, a short pre-post questionnaire will include items on programming competence and creativity. Possibly, supplementary control variables (self-concept in relation to creativity and the use of digital media, interest in dealing with programming or problem solving) will be collected here. The questionnaire will be designed in such a way that the younger students, who cannot yet read (well), will each be read or read aloud an item and have to tick the appropriate smiley on a smiley scale.

The questionnaire and the observation protocols are supplemented by photos of the painted tiles as well as the laid route. On the one hand, these can then be evaluated in terms of the creativity of the story following the TTCT (Torrance Test of Creative Thinking according to Torrance, 1966). On the other hand, other interesting questions arise, such as: How many obstacles did the children put in? Did the children lay the field with 20 (4x5) tiles, or did they only design the direct path?

On the poster we would like to present this project idea in more detail and on this basis, we would like to start a conversation about the project idea as well as the accompanying research. Are there further possibilities for creative development? Can creativity be addressed even more specifically? What influencing factors can play a role?

We will add a QR code to the app from the Bee-Bot to explain to the audience how and according to which principle the programming computer works. This gives you a rough idea of how the materials can be processed.

New Science Performances: Uncomfortable Independent Conversations

Raquell M Holmes

improvscience, California United States

Share Fair A, Booth #3

Abstract

Bringing the power of play and performance from grassroots youth development programs to researchers and educators across STEM has seeded a generative feedback loop for social, cultural change. In response to the ongoing, brutal killing of Black and poor Americans, scientists jumped in to create a different culture.

We created the Uncomfortable Independent Conversation (UIC) series. The UIC is a multi-generational, multi-racial, multi-class, non-ideological environment where individuals can come and transform their experience of race and class together. Each UIC event is different. And each is a community dialog in which people can be vulnerable with their experiences, their pain, their doubts and their hopes in addressing systemic racism in America. We are supporting people to have uncomfortable, developmental conversations in their lives with their colleagues, family members, and friends. Come learn how we play with STEM, race and class.

Game Theory and Play in a Digital Writing Center

Hannah Ward

The University of North Carolina at Greensboro, USA

Share Fair A, Booth #4

Abstract

"Game Theory and Play in a Digital Writing Center," by Hannah Ward, describes how the components of Digital Game Theory can inform the development of strategies for learning and peer-tutoring within digital spaces. Online formats of learning create a space for play and, much like a videogame, contain creative patterns of engagement that impact the effectiveness of online learning as a whole. Principles and interactions typically found in an online writing center function much like video games: the interactions between both people and the digital environment itself affect the outcomes. Finally, the work suggests practical applications for this framework in online writing center environments.

The audience will be asked about how the pandemic and digital learning impacts their personal teaching or learning strategies. Audience members will be encouraged to think critically about their own experiences in order for them to successfully understand how the framework of Digital Game Theory applies to all types of online learning. Additionally, I will ask about the audience's experiences with play in learning environments. Participants will have the option to ask in-depth questions to the presenter to engage with the material.

Using Publicly Available Resources for Teachers Professional Development

Minkie English

Ronin Institute, Laurelton, United States

Share Fair A, Booth #5

Abstract above

Improvising Our Way to Effective Climate Conversations

Lisa Yeager

Miami University, Seattle, United States

Share Fair A, Booth #6

Abstract above

Laudato Si' and Me: Examples of Student Reflections on Science, Society, and Self

Melinda Howard

Gonzaga University, Spokane, WA

Share Fair A, Booth #7

Abstract

This Share Fair activity will allow participants an opportunity to engage with examples of student work from an introductory biology assignment exploring the intersections of human society, environment, and science conducted at a private 4-year institution. Students were tasked with reading *Laudato Si'*, the science-based encyclical on environmental issues written by Pope Francis as part of Catholic social teaching, yet accessible to a broad audience. The encyclical covers topics ranging from biodiversity loss, water crises, and climate change alongside the roles and responsibilities of human societies around the globe. Students were provided freedom to reflect on these readings through writings or artistic expressions, including poetry, song, and graphic art. This session will showcase samples of student work.

Participants will engage with student work, ranging from visual art, poetry, and music. This will allow participants ways to consider how they can incorporate similar activities and artistic expression into their STEM courses.

Science in Song

Trisha Stan

Minerva University, Newton, United States

Share Fair A, Booth #8

Abstract

Popular music has a way of getting into your head and staying there because human brains are wired for memorable music. I take pop songs and "improve" them by making them about science (science satire songs) to engage audiences with science in a fun and engaging media. I started creating parody songs for a podcast I co-founded in graduate school in 2013 (Goggles Optional), and have recently started to create science parody songs for social media (@trishastan42 on TikTok and Instagram).

Friday Share Fair Talks 3:00 – 3:45 pm

Embodied WireFrame for Science Educators

Muneeb Ur Rehman

Pakistan

Friday, Share Fair B, Booth #11,

Abstract

This lightning talk presents an embodied wireframe for science educators aiming to cultivate a creative yet critically exploratory attitude in the experience of middle school science curriculum. A facilitator's framework will be presented that will help introduce students and draw them into topics of Force, Diversity of organisms, Ecosystems and Scientific attitude from the point of view of lived human experience and imagination. Drawing from hybrid influences of Jonathan Neelands' Process Drama, Dorothy Heathcote's Mantle of the Expert, Augusto Boal's Forum Theatre and Design Leadership, the framework treats "topics" from curriculum planning stage as living modular nodes with both fluid and crude overlappings through exploration with scientific dramatic devices. The particular framework has three layers of community generation built into its design, one at the level of student; second, at the level of teachers; third, teachers and students combined. Spanning over the five-month period of a term, informatics of the particular topics are structured around series of dramatic devising, explorations and reflections that lead up to personally and collectively derived actions, on part of both students and teachers. A central consideration of the embodied wireframe is facilitation of science educators who do not have a strong background in performance and leadership.

The session will provide demonstration of an activity with the present audience members treated as simulated science educators and a top-level view of the theoretical and structural basis of Embodied Wireframe for Science Educators.

Lightning Talk for Embodied Wireframes allows me to cover its broad conceptual approaches as it is in nascent stages of development for wide scale implementation in the science curriculum at all grade-levels. Its theoretical roots and basis will be covered with a singular focus on bringing facilitation, community and leadership as primary human outcomes for science educators in the learning journeys of students within the school culture.

The Infrastructure of Inclusion: Innovative DEI at GEI

Nancy Watt

Nancy Watt Communications, Toronto, Canada

Share Fair B, Booth #12

Abstract

For decades, the engineering sector has attempted to increase the percentage of women and minorities in the profession. Despite efforts, the numbers remain frustratingly low. In turbulent 2020, the urgency to address societal racial issues and make a real impact on cultural change at GEI Consultants was foremost in the minds of the Diversity, Equity & Inclusion committee at GEI Consultants, a large 800-employee engineering and environment consultancy. They decided something radically different was called for.

Together, GEI and Nancy Watt Communications developed an innovative project that has been met with significant success. It was understood that discomfort is a necessary part of learning about diversity, equity, and inclusion. It was also widely understood that improv makes many engineers uncomfortable. Throughout 2021 and 2022, eight cohorts of between 20-25 employees participated in four weekly, two-hour online improv workshops. The technology of The Lightboard enabled high engagement and more interactive participation in an online experience. These ensembles were built within the company and employees agreed to embrace discomfort, experience co-creation, explore their biases, confront privilege, and become empowered allies. They played together. Specific improv explained and revealed the diversity, equity, and inclusion research.

Over the course of four weeks, GEI employees got to know each other in an unconventional way. They embedded the "Yes, and" principle and actively sought out support from each other in a mutually supportive environment. Each week, specific improv exercises revealed bias, (acknowledge and accept, i.e. yes, and), paralleled inclusion with ensemble building, confronted privilege with status exercises and listening styles, and empowered the culture of allyship (have each other's back).

There is research to suggest that the percentage of the population needed to sway popular opinion, change minds and improve company culture, is not 50% but in fact closer to 20%. The eight cohorts at GEI Consultants represent 20% of their employees and indeed, the cascade of improved culture, behavior, changed minds and open communication has occurred at GEI Consultants. Retention is better than the industry average. People are speaking up more. Bystanders and allies are empowered. The C-suite is on board. And many engineers are good at improv.

Creating Connections, Drawing and Exploring Science Together

Sofya Borinskaya

Saint Elizabeth University, Morristown, NJ

Share Fair B, Booth #13

Abstract

Please, join me in an open space of colors, shapes, words, STEM illustrations and curiosity. This session will offer an opportunity for CE participants to create, explore and discuss collaborative drawings and illustrations (STEM and non-STEM) on a shared digital whiteboard (Miro). It is an invitation to appreciate the beauty and elegance of scientific and medical illustrations and images. We also will have an opportunity to explore and learn some STEM concepts and phenomena.

I started using shared digital whiteboard shortly before the pandemic began. During remote-only teaching and now, after returning to in-person instruction, I rely on this tool very often in my classes. It welcomes all the participants to interact with each other and scientific content at their own pace and learn from the teacher and each other in a risk-free playful environment. I enjoy building educational activities on a shared whiteboard and students feel that they are co-creators of their learning space and materials.=

Each participant will be welcomed, invited to introduce themselves to each other and guided to join the shared digital whiteboard (Miro). Participants will be offered to interact with each other on the digital whiteboard by contributing to a collaborative CE drawing which we will

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Elevate Theatre Company
Florida International University
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Improvscience
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Kennesaw State University
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