Stephen Miles Uzzo, PhD

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Science & Technology Executive, Researcher, and Innovator

Dynamic track record building top-tier research and learning organizations, partnerships, and networks in education, science, and policy

Proven collaborative leader with ability to transform non-profit, academic, and cultural institutions into renowned world-class centers of 21st century research, teaching, and learning. Exemplary communication and network-building skills spur research and development of innovative, award-winning, interdisciplinary learning initiatives and academic research programs with global reach. Solid history of cultivating ample fundraising sources from both the public and private sector, and adeptly managing fund utilization to maximize impact.

Highlights of Expertise

- Strategic Business Planning/Fundraising
- Program & Exhibit Research & Oversight
- Peer/Panel Review
- Interdisciplinary Team Leadership
- Community Outreach/Collaboration
- Complexity Research & Education
- Budget Administration / Management
- STEM Learning Research & Development
- Integration of Data-Driven Science and AI into Learning
- Research and Development of Interactive Learning Systems at All Scales.

Education, Certifications, & Select Continuing Education

- **PhD in Interdisciplinary Studies, Concentration in Arts and Sciences; Specialization in Network Theory and Environmental Studies**
  Union Institute, School of Interdisciplinary Studies, Cincinnati, OH, 2007
  Thesis: Network Theory and the Environment: Understanding Human Connections to Nature
- **Bachelor of Arts in Art History/Music/Education** *Long Island University,* Greenvale, NY;
- **Secondary Teaching Certificate**, New York State Education Department;
- **Collaborative Institutional Training Initiative certification** for Social, Behavioral and Education Research;
- **Educational Management and Leadership**, Stanford University, Palo Alto, CA;
- **Project Management**, Sun Microsystems, Pryor Seminars;
- **Basic SCUBA**, Professional Association for Diving Instructors;
- **Radiotelephone Broadcast License**, Federal Communications Commission;
- **Blackboard Academic Systems**.

Appointments

National Museum of Mathematics, New York, NY, 2022 – Present
Chief Technology Officer
Responsible for fact-finding, gathering resources and actualizing the short and long horizon technological and infrastructure needs of the institution in support of operational, programmatic, educational, and exhibit-related goals, including:

- Research and explicate the needs of the institution from a systemic and change management perspective in collaboration with operational, programmatic, design, and education staff;
- Intensively work with technical and operations staff to mitigate current technological vulnerabilities;
- Provide technical and design support for the new digital museum initiative and virtualization of Museum programming and services in collaboration with technical, design, and other leadership personnel;

- Help plan and execute the design, technological infrastructure, new exhibitions, and innovation support for the expanded home for the museum in collaboration with all departments; and
- Stand up new capacity in institutional advancement through grant-proposal writing, government and policy relations, content development, research, and evaluation of visitor experience to introduce rigor, and create and assess new and existing areas of exhibition, education, and programming.

Woods Hole Institute, Woods Hole, MA, 2018 – Present
Trustee / Co-Director
Non-profit foundation to provide a "third space" for interdisciplinary programs, education, and research at the intersection of science, technology, art, and humanities to address complex socio-environmental problems through participatory modeling and design, including:

- Coastal hazards, sustainability and resilience in the blue economy, wetlands, and watersheds; with a particular interest in vulnerable and underserved communities (e.g., Herring Pond Wampanoag, Falmouth Cape Verdean communities, Cape Cod coastal communities, and New Bedford fisheries, in collaboration with UMass Boston, UMass Dartmouth, and Northeastern U.);
- An initiative to celebrate the 150th anniversary of the voyage of the HMS Challenger through public events, exhibits, and promoting understanding of scientific imagery in collaboration with the College of Exploration and the University of Chicago Marine Biological Laboratory;
- An initiative to improve action and understanding of the U.N. Sustainable Development Goals through a complex systems approach. In collaboration with The Eden Project.
- An initiative to amplify the work of the science institutions in Woods Hole (especially the University of Chicago Marine Biological Laboratory and Woods Hole Oceanographic Institution) and provide a global presence for their work;
- Developed Initiative in science practice, teaching and learning and public engagement in earth and space science convergence in collaboration with Associated Universities Incorporated and NSF.

The New York Hall of Science, Flushing Meadows Corona Park, NY 1999 – 2022
Chief Science Officer (2015-2022 / Prior to that **VP Science and Technology**)
Lead, develop, fund, and manage education, research, and development teams within and across institutions for discovery in experiential STEM learning and transdisciplinary practice. Establish capacity-building collaborative partnerships with government, research laboratories, universities and cultural institutions; lead cross-functional teams to advance the mission of increasing diversity and access to advanced science learning by building global partnerships and networks that promote advanced STEM learning across the lifespan, create professional development curricula, and supervise interdisciplinary research and mentorship teams; Cultivated and managed funding sources (PI or co-PI) to raise approximately $25M from government and $7M from private foundations across multiple successful capital campaigns and managed up to $52M educational infrastructure projects (IBM TryScience). Strong advocate for diversity, equity and inclusion in science learning and practice in community and academic settings. Sample projects include (PI or Co-PI):

- Principal Investigator and project lead on $23M initiative in collaboration with the City of New York, and Columbia University Earth Institute to develop infrastructure for, design, and build an immersive digital experience (Connected Worlds) for public engagement and learning research in sustainability, social learning, and cooperation, including historic building renovation. Awarded additional $4.5M by National Science Foundation (NSF) and private funders to expand the scope of the project to research learning and develop related learning media;
- PI in collaboration with UMass Boston to develop novel initiatives in ocean, estuary, and coastal science literacy; results included expert panel report and social network analysis of ocean education networks and lead initiative with Hudson River Park Trust and Clarkson University to develop and organize the first New

York City public marine science festival (Submerge), and planning and design for the Hudson River Estuary science center on Pier 26 in Manhattan;

- Managed design and development of exhibition, learning and instructional space, and cultivation of community of education practice and outreach for $68M, 55,000 ft^2 facilities expansion project, including leadership of a global initiative for education of connected systems, framework for teaching and learning translated into 20 languages, annual international symposia, and after school research program for underrepresented students. As part of this initiative also managed scaling and integration of all infrastructure, including Institutional advancement, finance, membership, admissions, marketing and communications;
- Lead (PI) on Data Science for All initiative in collaboration with Columbia University Data Science Institute, Northeast Big Data Innovation Hub, and Bloomberg Philanthropies to bring data and AI literacy to underserved communities, community service organizations, schools, and libraries to address gaps in learning and equity in smart cities policy and across learning settings;
- Co-PI for $7.6M math and science teacher residency partnership with City University of New York and New York City Schools to integrate pedagogical content knowledge into graduate school teacher practice through reflective media applications;
- Designed, secured $3.5M in NSF funding, and developed (PI) global science mentorship, collaborative design, and social entrepreneurship programs bringing together graduate students, high school teachers and youth in underserved urban communities throughout the Northeast;
- Principal Investigator for $6.4M Education Innovation and Research grants (U.S. Dept of Ed.) for improving physics and computer science teaching and learning throughout schools in N.Y. City and N.Y. State;

New York Institute of Technology, Old Westbury, NY, 2006 – 2021

Adjunct Assistant Professor, Graduate School of Education, New York Institute of Technology College of Arts and Sciences

Design, teach and assess curricula for STEM & STEAM (science, technology, engineering, arts, and math) integration courses for preservice teacher preparation in Master's degree and Advanced Graduate Certificate in Education programs. Develop and deliver grant-funded continuing education (STEMi) programs for New York City of Department of Education and United Federation of Teachers in-service teacher training programs.

- Create and deliver online and live instruction for New York State teacher certification in STEM as well as integration of arts into standard STEM curricula; extended instructional model to deploy sensor technologies to facilitate candidate's advancement and design of curricula;
- Participate in development of distance learning graduate program curricula for United Arab Emirates and Israeli schools;
- Participate in university-wide accreditation processes for National Council for Accreditation of Teacher Education (NCATE) and Council for the Accreditation of Educator Preparation (CAEP) self-study.

Computer Graphics Laboratories/Video Center: Director of Engineering, 1984 – 1990

Designed interactive and distance learning systems, media, and curricula; developed and obtained funding for programs; managed funded programs and budgets; evaluated and wrote technical papers on emerging imaging and computer graphics technologies; designed, engineered, and documented digital image processing systems, computer graphics/audio/video media production systems, and computer-based learning systems; and performed documentary film and video production.

The Castilleja School Foundation Palo Alto, California, 1996 – 1999

Director of Information Resources

Supported $11 million capital campaign through solicitation and management of donations and development of industry/academic partnerships to promote women's leadership in science and technology; served as liaison for board of directors advisory council and chair of technology committee; performed

strategic long-range capital and operations planning, faculty training and classroom science/technology integration; designed STEM professional development programs, curricula and assessment metrics, developed and managed information resource center (including computer labs, library and faculty resource center, staffing, and capital and operating budgets); led project design and management of building renovation projects including new science teaching and research facilities, IT infrastructure, computer labs, library and faculty resource center.

Bay Shore Union Free School District**,** Bay Shore, New York, 1992 – 1996
Technology Director

Served as senior advisor for district-wide integration of educational technology and infrastructure development. Also did capacity-building and outreach to bring the district together with universities regional boards, and government in creating: academic/industry/government partnerships; developing programs and writing grant proposals; creating professional development programs; leading long-range strategic planning and capital budget development efforts.

Rainbow Network Communications, Woodbury, New York, 1990 – 1992
Director of Engineering: Broadcast Business Development and Operations

Managed design, development and staffing of large-scale network operations center, television production studios, news, and program origination facilities; managed and trained department of 20 managers, supervisors, engineers, and technicians; developed new media ventures; performed strategic business planning and logistics; engineered data/audio/video communications systems; and developed and managed capital and operations budgets.

Additional media experience; Chief Engineer for Instructional Television Fixed Service for Diocese of Rockville Centre: Technical engineer for Warner Amex Satellite Entertainment Company to launch new television origination facility including Music Television and Nickelodeon as well as managing community and library media services on Long Island, NY.

Awards

- **International Serious Play Silver Award**, The Pack, 2020;
- **American Alliance of Museums Media and Technology MUSE Gold Award**, Connected Worlds, 2017;
- **Jackson Hole Science Media Award**, Interactive Category, Connected Worlds, 2016;
- **Science and Practice of Ecology and Society Award**, Puntacana Ecological Foundation and the Scaling of Sustainable Tourism Development, 2013;
- **Summit International Creative Award**, Photovoltaic Exhibit, 2011.

Funded Research & Program Development (PI/Co-PI)

Conference on Human-Centered Approaches to Artificial Intelligence Literacy in Informal Learning, New York Hall of Science / NSF, 2022;

QuEST: Quantum Education for Students and Teachers, State University of New York, Stony Brook, New York Hall of Science / NSF, 2022;

DataJam: Scaleup of Data Science High School Research Program*,* New York Hall of Science, Pittsburgh Supercomputer Center/ Columbia University, Northeast Big Data Innovation Hub, 2021 – Present;

Applying Game Design Principles for Supporting Computational Literacy Experiences in Museum Exhibits, New York Hall of Science / University of Wisconsin / NSF, 2021 – 2022;

Playground Physics: Scaling and Sustaining a Technology-Enhanced Middle-School Physics Program, New York Hall of Science / U.S. Department of Education, 2020 – 2022;

Empowering Environmental Resilience Through Community Design, New York Hall of Science / JPB Foundation, 2019 – 2022;

The Pack: Using Game-based Learning to Infuse Computational Thinking into Science Teaching and Learning, New York Hall of Science / U.S. Department of Education, 2019 – 2022;

Data-Driven, Human-in-the-Loop Support for Facilitating Participatory Learning Activities, New York Hall of Science / NSF, 2018 – Present;

Extracting Salient Scenarios from Interaction Logs, New York Hall of Science, TERC, Harvard University / NSF, 2016 – 2022;

Network for Earth-space Research, Education and Innovation with Data, Associated Universities Incorporated / NSF, 2019 – 2023;

NYIT Robert Noyce Teacher Scholarship Program, New York Hall of Science, New York Institute of Technology / NSF, 2019-2022;

Making a Difference: Engaging Young People in Engineering and Computer Science through Computational Making and Social Entrepreneurship, New York Hall of Science / NSF, 2018 – 2022;

Understanding and Improving Data Visualization Literacy: Research and Tool Development to Empower General Audiences to Read and Make Data Visualizations, Indiana University / NSF, 2017 – 2023;

Big Data Literacy: Building Capacity for Regional Collaboration in Closing the Big Data Divide Northeast Big Data Innovation Hub, Columbia University / NSF, 2016 – 2022;

Hudson River Estuarium, York Hall of Science/Clarkson University / New York State Dept. of State and Dept. of Environmental Conservation, 2015 – 2019;

Computational Thinking in Ecosystems: A-Program-to-Play Approach to Infusing Computational Thinking into Environmental Science Learning, New York Hall of Science, Columbia University, Design I/O, NSF & JPB Foundation, 2015 – 2019;

Data Modeling with Young Learners and Their Families, New York Hall of Science/NSF. 2016 – 2018;

Learning Everywhere, Concord Consortium /New York Hall of Science / Bowes Foundation, 2016 – 2018;

Innovating Data-driven Methodologies for Documenting and Studying Informal Learning, New York Hall of Science / NSF, 2015 – 2018;

Innovation Institute: from Problem to Product, New York Hall of Science / NSF, 2014 – 2017;

Mathematics and Science Teacher Education Residency, City University of New York/New York Hall of Science/ New Visions for Public Schools / NSF, 2013 – 2018;

Network Science for the Next Generation, SUNY Binghamton/Boston University/New York Hall of Science / NSF, 2011- 2017;

Ocean Communities in Education and Social Networks - University of Massachusetts / New York Hall of Science / Boston Public Schools / Association for the Sciences of Limnology and Oceanography / Centers for Ocean Science Education Excellence / NSF, 2010 – 2016;

Connected Worlds, New York Hall of Science / Columbia University / Design I/O / New York University / Yale University / NSF / JPB Foundation / Google / Carnegie / NASDAQ / Xylem Corporation, 2009 – 2015;

Pathways: Sensemaking of Big Data, New York Hall of Science / Indiana University / NSF, 2012 – 2014;

CS-STEM, Topcoder / New York Hall of Science / DARPA, 2010 – 2012.

Other Funded Research & Program Development

Teachers Tryscience, IBM/New York Hall of Science: (Project Director for a development of a social website for K-12 teachers to develop, share and rate STEM lesson and unit plans), 2009 – 2011;

Connections: The Nature of Networks, New York Hall of Science/NSF: (exhibit and program developer/researcher for the first museum exhibit and programs on the science of complex networks), 2000 – 2004;

TryScience, IBM/New York Hall of Science/Association of Science-Technology Centers (technical and content manager for $50M global website for science center content and programs for 800 ASTC and ECSITE member museums), 1999 – 2005;

Technical Education and Mentoring Program, Castilleja School Foundation/AAUW/Silicon Graphics, Inc./Stanford University (supervisor/evaluator), 1996 – 1999;

Program for the Twenty-First Century - Castilleja School Foundation: (director of information resources for program and capital development project to provide new STEM teaching facilities, programs and professional development), 1996 – 1999;

MST Integrated Program for Physical Science - Bay Shore School District: (curriculum and technical coordinator for program to team teach high school science, math technology and literacy), 1995-1996;

Literacy Evaluation and Assessment Program - Bay Shore School District: (co-PI), 1995-1996;

Sciences of the Environment and Advanced Technology Education Consortium - State University of New York, Brookhaven National Laboratory, Suffolk Board of Cooperative Educational Services, Bay Shore UFSD (PI for NSF-funded CTE program to teach vocational STEM), 1994 – 1996;

Long Range Plan for Technology - Bay Shore School District: (project director/facilitator), 1993 – 1995;

Computer Integration into Restructured Collaborative Learning Environments - Bay Shore School District (PI for grade 5 technology integration program including some of the earliest uses of programmable data loggers in science education), 1992 – 1995;

Rainbow Networks Consolidation Project - Rainbow Programming Enterprises: (project director for $20M capital project to build a new network operation and studio facility to consolidate existing operations), 1990 - 1992

Joint Center for Computers, Learning, and Technology - New York Institute of Technology/Howard University (director of engineering), 1988 – 1990;

Interaction of Color - NYIT, Pratt Institute, Apple Computer, The Albers Foundation, and Yale University Press (engineer in charge of production), 1987 – 1988.

Courses, Workshops, Conferences and Lectures

2023

24 Hour - Around the World - Macroscopes: Interactive Data Visualizations Event. Indiana University (panelist)

Twelfth Network Science and Education Symposium: Vienna, Austria (organizer);

Analyzing Youth's Problem-Solving in Computational Making Through a Community-Engaged Maker Program in session: Purpose, Aspirations, and Well-Being: Holistic Adolescent Development. American Educational Research Association, Annual Meeting. (Paper);

Thirteenth International Workshop on Complex Networks: University of Aveiro, Aveiro, Portugal (steering/program committee);

Enhancing middle school physical science lessons with embodied learning. 2023 National Association for Research in Science Teaching Annual International Conference, Roundtable Strand 12: Technology for Teaching, Learning, and Research (panel).

2022

24 Hour Human Reference Atlas Event: Let's map the human body at single-cell resolution! Panel on Human Atlas Exhibits. Ideation panel on developing a public experience on the human body atlas. Indiana University and National Institutes of Health (panel organizer and facilitator).

Where and How is Data Science Happening? Workshop on Foundations of Data Science for Students in Grades K-12. National Academies of Science, Engineering and Medicine, Washington D.C. (Invited Panelist);

Eleventh Network Science and Education Symposium: online (organizer);

Supporting Youth Engagement in Online Maker Education Workshops: Pandemic Lessons, Future Potentials. In Session: Braving the Challenges of the Pandemic: Research on Navigating Learning Environments in Times of Emergency. AERA Annual Meeting, April 21, 2022, San Diego, CA;

Twelfth International Workshop on Complex Networks, Online (steering/program committee);

DataWise. Workshop series for K-12 teachers to integrate data science into teaching practice. In collaboration with STEM Teachers NYC;

NSF/TERC STEM for All Video Showcase: online (facilitator).

2021

How Virtual Networking Events Can Catalyze Convergence. American Geophysical Union Fall Meeting, New Orleans, LA (poster);

Tenth Network Science and Education Symposium: online (organizer);

Studying Shared Regulation in Immersive Learning Environments. 15th International Conference of the Learning Sciences (short paper);

Studying Collective Problem-Solving Regulation in an Immersive Open-Ended Museum Exhibit. American Educational Research Association, Annual Meeting. (poster);

The Network for Earth-space Research Education and Innovation with Data. 237th Meeting of the American Astronomical Society, Webinar (invited speaker);

Tenth Network Science and Education Symposium: online (organizer);

Eleventh International Workshop on Complex Networks, Online (steering/program committee);

NSF/TERC STEM for All Video Showcase: online (facilitator);

Math, Science and Technology in Education II, New York Institute of Technology, Old Westbury, NY (instructor).

2020

The Pack: Using Game-based Learning to Infuse Computational Thinking into Science Teaching and Learning. New Frontiers in K12 CS Education, U.S. Department of Education Webinar (invited speaker);

Formative Fugues: Helping Learners Understand Complex Systems through Causal Inference and Lag Sequential Analysis. The Fifth CCS Satellite Symposium on Complex Systems and Education: Research and Practice Conference on Complex Systems (contributed paper);

Ninth Network Science and Education Symposium: online (organizer);

Measuring STEM and Computational Thinking Outcomes: Education Innovation and Research Project Directors and Evaluators Technical Assistance Meeting, online, U.S. Dept of Education (invited speaker);

Summer of COVID-19 - Kids Online?" Institute of Digital Media and Child Development New York (invited panelist);

Data Science for All: Designing the Successful Inclusion of Data Science in High School Computer Science, New York Hall of Science and Columbia University, Cornell Tech, New York, NY (organizer);

Tenth International Workshop on Complex Networks, Online (steering/program committee);

Accelerating Convergence of Earth and Space Data in Teaching and Learning Through Participatory Design, Earth Science Information Partnership Federation Winter Meeting, Bethesda, MD (co-panelist);

Network for Earth-space Research Education and Innovation with Data: NEREID, Earth Science Information Partnership Federation Winter Meeting, Bethesda, MD (poster);

Math, Science and Technology in Education II, New York Institute of Technology, Old Westbury, NY (instructor).

2019

Connected Worlds: Sustainability Science and Learning, Stanford Research Institute, International, Menlo Park, CA (invited speaker);

Network for Earth-space Research, Education and Innovation with Data (NEREID): Building Convergence and Capacity Across Earth, Space, and Data Sciences, in session: Communities, Tools, and Policies That Enable Integration of Earth, Space, and Environmental Science Data and Cyberinfrastructures II: Tools and Policies, American Geophysical Union Fall Meeting, San Francisco, CA (co-panelist);

Network for Earth-space Research, Education and Innovation with Data (NEREID): Collaboration for Earth-Space Data Science Education and Practice, in session: Reaching the Researcher: Collaborations Between Educators, Scientists, and the Public for the Advancement of STEM and Geosciences II, American Geophysical Union Fall Meeting, San Francisco, CA (poster);

NEREID Earth-Space Data Convergence Accelerator Workshop, Associated Universities, Inc. Green Bank Observatory, Green Bank, WV (organizer);

Make-A-Vis: Come Build a Data Visualization from The Ground Up. With Börner, K., Kennedy, B. Herr, B. Keune, A. ASTC Annual Conference (Pre-Conference Workshop). Toronto, ON, Canada;

Making a Difference: Engaging Young People in Engineering and Computer Science through Computational Making and Social Entrepreneurship, 2019 Maker Educator Convening, Pittsburgh, PA (speaker);

Connect-to-Connected Worlds: Data-Driven Reflection Tools for an Open-Ended Simulation at a Museum, Association of Science-Technology Centers Annual Conference, Toronto, Canada (speaker/panelist);

Math, Science and Technology in Education II, New York Institute of Technology, Old Westbury, NY (instructor);

Network for Earth-space Research Education and Innovation with Data: NEREID, Earth Science Information Partners Summer Meeting, Tacoma, WA (Poster);

Ways of Developing Literacies – Inspiration: Successes of Literacy Projects Networks and Data, International Society of for Systems Science Conference, University of Oregon, Corvallis, OR (invited speaker);

Eighth Network Science and Education Symposium, International Workshop & Conference on Network Science University of Vermont, Burlington, VT (organizer/convener);

Media Impact Screening Toolkit Retreat, Institute of Digital Media and Child Development, Setauket, NY (facilitator);

Ninth International Workshop on Complex Networks: Universidad Rovira i Virgili, Tarragona, Spain (steering & program committee);

Partnering for the Future: Opportunities and Challenges for Advancing Science and Technology, Huston-Tillotson University International Alumni Association, Austin, TX (invited keynote speaker);

Design for Understanding, Princeton University, Princeton, NJ (invited speaker);

Data Literacy in Communities, Columbia University/New York Hall of Science (Host, Organizer);

Interdisciplinarity and Design: Opportunities in science and learning, Clarkson University School of Arts and Sciences, David A. Walsh Seminar, Potsdam, NY (invited speaker).

2018

Panel on Non-Traditional Educational Tools, *A Visionary Resource for Instilling Fundamental Principles of Rigorous Neuroscience Research Workshop,* National Institutes of Health/National Institute of Neurological Disorders and Stroke, Bethesda, MD (invited panelist/speaker);

Interdisciplinary workshop on research and screening methods, Digital Media and Developing Minds Second National Congress, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (organizer & facilitator);

Math, Science and Technology in Education II, New York Institute of Technology, Old Westbury, NY (instructor);

Meeting of the Minds: CubeSats, Aerospace, Education and STEM, U.S. Department of Education/Luminary Labs: New York, NY (invited domain expert);

LabVenture Re-launch Fall 2018 - Gulf of Maine Research Institute, Portland, ME (invited panelist, speaker);

Community Challenges with Data Workshop: Addressing Community Challenges with Data-Driven Solutions Data for Good Exchange, Bloomberg Finance LLP, New York City, NY (invited workshop speaker-facilitator);

Data Science for All: Democratizing data for a global citizenry, Data for Good Exchange, Bloomberg Finance LLP, New York, NY (poster);

Complex Systems: Literacy and Learning, International Conference on Complex Systems, New England Complex Systems Institute/Massachusetts Institute of Technology, Cambridge, MA (organizer, speaker);

Science Media Awards and Summit, Jackson Hole Wildlife Film Festival and WGBH, Boston, MA (judge);

Seventh Network Science and Education Symposium, International Workshop & Conference on Network Science, Institut des Systèmes Complexes de Paris, France (organizer);

Shaping the Pack: Using Design-Based Research to Instill Empathy in a Computational Problem-Solving Game, Community for Advancing Discovery Research in Education, National Science Foundation Principal Investigator Meeting, Washington, DC (poster);

Science and The Public Interest Roundtable, Washington University/Dilenschneider Group, New York, NY (invited speaker);

Hudson River Estuarium: Making the Invisible Visible, Hudson River Symposium, State University of New York at New Paltz, NY (poster);

Advancing Data Literacy, Oregon State University, Corvallis, OR (invited speaker);

Northeast Regional Conference on Complex Systems, Binghamton University, Center for Collective Dynamics of Complex Systems, Binghamton, NY (invited panelist, Young Researchers Preconference event);

U.S. Science and Engineering Festival - The Pack, National Science Foundation, Washington, DC (invited presenter);

Northeast Big Data Innovation Hub - 2018 Summit, Columbia University, New York, NY (steering committee, workshop organizer);

Eighth International Workshop on Complex Networks, Northeastern University, Boston, MA (steering/program committee);

Cultivating Tipping Points: Network Science in Teaching 9th International Workshop on Complex Networks, Northeastern University, Boston, MA (Poster);

International Big Cats Film Festival, Jackson Hole Wildlife Film Festival Conservation Summit, Jackson Hole, WY (judge).

2017

The Third Task: Adventures in Complexity Literacy and Learning, Binghamton University Center for Collective Dynamics of Complex Systems and Evolutionary Studies Program Seminar Series, Binghamton, NY (Invited Speaker);

Evolution of NYSCI and Connected Worlds, Panel Discussion, The Panasonic Experience, Powered by InfoComm, New York Hall of Science, Corona, NY (invited panelist);

Sixth International Workshop on Complex Networks and their Applications, Université de Lyon, France (program committee);

Data Modeling with Young Learners and their Families, Visualizing STEAM Data in Support of Smart Decision Making, Science Centre World Summit, Tokyo, Japan (invited panelist);

Wicked Problems: Opportunities for the science museum community to address society's biggest challenges, Association of Science-Technology Centers Annual Conference, Montreal, Canada (panel organizer/convener/speaker);

Math, Science and Technology in Education II, New York Institute of Technology, Old Westbury, NY (instructor).

Alternative Institutional and Educational Mechanisms: Panel on Informal Data Science Education National Academies of Sciences, Engineering and Medicine, Board on Mathematical Sciences and Analytics. Roundtable on Data Science Postsecondary Education Meeting #4, Northeastern University, Evanston, IL (invited panelist/domain expert);

Keeping Data Science Broad: Alternative Avenues for Development of Data Science Education Capacity, South Big Data Hub, Georgia Institute of Technology, Atlanta, GA (webinar, invited speaker);

Big Data and the 95% Solution: Looking for Learning in All the Wrong Place, Data for Good Exchange. Bloomberg Finance, LLP, New York, NY (invited speaker);

Computational Thinking Summit, Educational Development Corporation, Newton, MA (invited participant);

Enaction: The Role of Embodiment in the Cultivation of Understanding Resilience in the Coupling of Human and Natural Systems, American Cybernetics Society Annual Conference, Salem, MA (facilitator, instructor, guest lecturer);

Networks in Classroom Education U.S. Military Academy, West Point, NY (facilitator, instructor, guest lecturer);

Jackson Hole Wildlife Film Festival, Jackson Hole, WY (judge);

Institute in Education: Art Integration to Deepen Interdisciplinary Learning, New York Institute of Technology, Old Westbury, NY (course creator, instructor);

Sixth Network Science and Education Symposium, International Workshop & Conference on Network Science Indiana University, Network Science Institute, Indianapolis, IN (organizer);

Highlighting Network Literacy Opportunities in NGSS: Pathways connecting essential concepts with disciplinary core ideas, Sixth Network Science and Education Symposium, International Workshop & Conference on Network Science, Network Science Institute, Indiana University, Indianapolis, IN (speaker);

Consortium for the Society of Young Network Scientists Symposium, Sixth Network Science and Education Symposium, International Workshop & Conference on Network Science, Network Science Institute, Indiana University, Indianapolis, IN (facilitator);

Macroscopes for Making Sense of Science and Technology, International Workshop & Conference on Network Science, Network Science Institute, Indiana University, Indianapolis, IN (speaker);

Applied Research in Immersive Environments for Learning American Educational Research Association Annual Meeting, San Antonio, TX (workshop presenter);

Engaging Complex Social and Scientific Issues in Informal Learning Spaces, American Educational Research Association Annual Meeting, San Antonio, TX (panelist);

Big Data Literacy: Building Capacity for Regional Collaboration in Closing the Big Data Divide, New York Hall of Science and Columbia University, Corona, NY (co-organizer, host);

Data Driven STEM: Opportunities and challenges for science learning and literacy, Associated Universities Incorporated, Washington, DC (invited speaker);

Big Data Literacy, NSF BIGDATA Joint PI Meeting National Science Foundation: (speaker);

Big Data Literacy, Columbia University: Annual Workshop of the Northeast Big Data Innovation Hub, New York, NY (invited speaker);

Seventh International Workshop on Complex Networks, Inter University Center, Dubrovnik, Croatia (steering & program committee);

STEM+C for Environmental Education, Harvard Graduate School of Education, Cambridge, MA (invited speaker);

Play Data Consortium, Massachusetts Institute of Technology, Cambridge, MA: (invited collaborator).

2016

Submerge NYC, New York Hall of Science and Hudson River Park Trust, New York, NY (Co-host and Co-organizer for annual marine science festival on Pier 26);

The 5th International Workshop on Complex Networks and their Applications, Università degli Studi di Milano, Milan, Italy (program committee);

NetSciEd: Teaching Networks to Everyone, Satellite Symposium on Complex Systems in Education: Questions, Methods and Implications for Practice, Conference on Complex Systems, Amsterdam, The Netherlands (co-organizer);

Connected Worlds: Connecting the Public with Complex Environmental Systems, American Geophysical Union Fall Meeting, San Francisco, CA: (speaker/panelist);

From Wow! to Why?: Building Science Literacy with Data Visualization Visitor Studies Association Annual Conference, Boston, MA (invited panelist);

Art Integration to Deepen Interdisciplinary Learning, Institute in Education, New York Institute of Technology, Old Westbury, NY (instructor);

Open Education Resources Research Convening, National Science Foundation, Arlington, VA (invited domain expert);

Tracing Learning Across Time and Space, Cyberlearning 2016: Designing for Deeper, Broader, and More Equitable Learning, SRI International and National Science Foundation, University of Wisconsin, Madison, WI (invited co-speaker);

Fifth Network Science and Education Symposium, International School & Conference on Network Science, Korea Advanced Institute of Science and Technology, Seoul, Korea (organizer);

Enaction: Embodied Interfaces for Learning, Culture Analytics Workshop II**:** Cultural Analytics and User Experience Design, Institute for Pure and Applied Mathematics, University of California, Los Angeles, CA (invited speaker);

Teaching and Learning About Networks: A Metacognitive Dilemma, International Network for Social Network Analysis: Sunbelt 36 Conference, Newport Beach, CA: (speaker);

Crowdsourcing Network Literacy: A Grassroots Story, International Network for Social Network Analysis: Sunbelt 36 Conference, Newport Beach, CA (speaker);

Teaching Network Science to University Undergraduates, International Network for Social Network Analysis: Sunbelt 36 Conference, Newport Beach, CA (panelist);

Sixth International Workshop on Complex Networks, Université de Bourgogne, Dijon, France (steering & program committee);

IEEE Integrated STEM Education Conference, Princeton University, Princeton, NJ (co-organizer for NetSci High school student poster presenters);

Complex Systems in Education Symposium, Georgia Institute of Technology, Atlanta, GA (invited panelist/ speaker/moderator);

Connected Worlds: Pathways to Engaging the Public in Sustainability Science, Cary Institute of Ecosystems Study, Millbrook, NY (invited speaker);

The Genome Revolution: Understanding and Teaching DNA Sequencing (New York Hall of Science President's Council Event), New York Genome Center, New York, NY (invited panelist);

Biochemistry Science Outreach Panel, Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, NY (invited panelist).

2015

Education Connecter Workshop for Northeast Big Data Innovation Hub, Columbia University, New York, NY (co-organizer);

STEM Integration & 21st Century Learning: Bringing Authenticity to K-12 Teaching and Learning, The Challenge of STEM Education Symposium: International Perspectives, Academia Brasileira de Ciências, Rio de Janeiro, Brazil (invited speaker);

Supersizing Science: The Present and Future of Embodied Learning Through Technology, Association of Science-Technology Centers Annual Conference, Montréal, Canada (panel organizer/speaker);

Submerge NYC, New York Hall of Science and Hudson River Park Trust, New York, NY (Co-host and Co-organizer for annual marine science festival on Pier 26);

Math, Science and Technology in Education II, New York Institute of Technology, Old Westbury, NY (instructor);

Sackler Colloquium: Children and Screens, National Academies of Science, Irvine, CA. (invited domain expert);

Sixth Annual PostDoc Symposium, Icahn School of Medicine, Mt. Sinai Hospital, New York, NY (invited panelist/domain expert);

Tracing Learning Through Time and Space, New York Hall of Science, Corona, NY (co-PI/co-organizer);

The Extended Mind: How Doing Makes You Smarter, Beacon Institute for Rivers and Estuaries: Third Thursday Public Lecture, Beacon, NY (invited lecturer);

Fourth Symposium on Network Science and Education, International School & Conference on Network Science, Universidad de Zaragoza, Zaragoza, Spain (organizer);

Data Visualization Literacy of Youth and Adult Science Museum Visitors, American Educational Research Association Annual Meeting, Chicago, IL (co-author/presenter);

Sixth International Workshop on Complex Networks, New York Hall of Science, Corona, NY (chair/host/organizer/program committee);

STEM Engagement and Learning Technology Leadership Forum, New York Institute of Technology (invited speaker);

Cyberlearning 2015: Connect, Collaborate, and Create the Future, SRI International and National Science Foundation, Arlington, VA (program committee, invited speaker).

2014

Network Science for the Next Generation Summer Workshop, Boston University (co-PI/co-organizer);

Third Symposium on Network Science and Education, International School & Conference on Network Science, U.C. Berkeley, Berkeley, CA (organizer/speaker);

Big Data and the Legible City: Connected Worlds, Science Centre World Summit, Technopolis, Mechelen, Belgium (invited panelist);

New Technologies for Learning and Engagement, Science Centre World Summit, Technopolis, Mechelen, Belgium (co-author);

Toward a Network Model of Learning, Fifth International Workshop on Complex Networks, Università di Bologna, Bologna, Italy (invited speaker);

Submerge NYC, New York Hall of Science and Hudson River Park Trust, New York, NY (Co-host and Co-organizer for annual marine science festival on Pier 26).

2013

The 4th Paradigm: Connecting Visitors to Complex Science, Association of Science-Technology Centers Annual Conference: Albuquerque, NM (panel organizer/speaker);

Network Science for the Next Generation Summer Workshop, Boston University, Boston, MA (co-PI/co-organizer);

Second Symposium on Network Science and Education, International School & Conference on Network Science, Danmarks Tekniske Universitet and Det Kongelige Bibliotek, Copenhagen, Denmark (organizer/speaker).

The Fourth Paradigm: Connecting Learners to Complex Science, National Socio-Environmental Synthesis Center, Annapolis, MD (invited speaker);

Sensor Networks and Social Networks: Effective Strategies for Education and Outreach, American Society for Limnology and Oceanography Aquatic Sciences Meeting, New Orleans, LA (co-author);

Fourth International Workshop on Complex Networks, Freie Universität Berlin, Germany (program committee);

Collaboration+Metrics=Funding, Jackson Hole Wildlife Film Festival Symposium, Denver, CO (invited panelist);

Deconstructed: Connected Worlds, Jackson Hole Wildlife Film Festival Symposium, Denver, CO (invited speaker);

Network Science for the Next Generation Summer Workshop, Boston University, MA (co-PI/co-organizer);

Symposium on Network Science and Education, International School & Conference on Network Science, Northwestern University, Evanston, IL (organizer/speaker);

Evaluating Meaning and the Visitor Experience, Metropolitan Museum of Art, New York, NY (invited speaker);

Third International Workshop on Complex Networks, Massachusetts Institute of Technology/Florida Institute of Technology, Melbourne, FL (program committee/poster).

Other Courses, Workshops, and Lectures

Authentic Data Workshop, National Academies of Science, National Board on Science Education, Irvine, CA (invited panelist/domain expert);

Modeling and Mapping Science Workshop, Indiana University, Bloomington, IN (invited panelist);

Mapping the Structure and Evolution of Sustainability Science, American Association for the Advancement of Science, Washington, DC (invited panelist);

Network Paradigms for STEM Learning, International School & Conference on Network Science, Massachusetts Institute of Technology, Cambridge, MA (speaker);

National STEM Education Exchange Working Group, White House Office of Science and Technology Policy, Washington, DC (domain expert/invited panelist);

The Right Approach: Methods for Computational Thinking both Formally and Informally, National Academies of Science/National Research Council, Washington, DC (invited panelist/domain expert);

NSF Workshop on How to Measure, Map and Dramatize Science, Indiana University, Bloomington, IN (host/co-organizer);

20/20 Vision: Next Generation of STEM Learning Research, Institute for Learning Innovation, Oregon State University, Corvallis, OR: (invited speaker);

The Seen and the Unseen: from Scientific Visualization to Data Visualization and its Impact on the Understanding of Science, Gordon Research Conference on Scientific Visualization and Education, Magdalen School, Oxford University, Oxford, UK (invited speaker);

Connections: The Nature of Networks, International School & Conference on Network Science, University of East Anglia, Norwich, UK: (invited convener/speaker);

NSF Workshop on Knowledge Management & Visualization Tools in Support of Discovery, New York Hall of Science, Corona, NY and National Science Foundation, Arlington, VA (co-organizer/co-facilitator/host);

International School & Conference on Network Science, Notre Dame University, Harvard Medical School and New York Hall of Science, Corona, NY (co-PI/host/co-organizer);

Image and Meaning 2, Massachusetts Institute of Technology and J. Paul Getty Museum, Los Angeles, CA (session collaborator);

Exhibits and Expansion in the 21st Century, National Association of Museum Exhibition and Association of Science-Technology Centers Roundtable for the Advancement of Professionals, Jersey City, NJ (invited panelist);

Learning Design and Technology Master's Program, Stanford University, Stanford, CA (presenter, advisor and mentor);

Using Emerging Technologies in Classroom Teaching, Castilleja School Foundation, Palo Alto, CA (curriculum developer/instructor);

Models for Successful Faculty Development Integrating Technology, National Coalition of Girls Schools, National Conference, San Francisco, CA (invited speaker);

Teaching Secondary French with Multimedia, California Language Teaching Association Annual Conference, San Francisco, CA (lecturer);

MST Pre-service Faculty Preparation Standards Workgroup, State University of New York, Stony Brook, NY (invited domain expert);

Technologies and Applications for K-12 Assessment, New York State Board of Regents, New York City Schools Under Registration Review Annual Conference, New York, NY (invited speaker);

Applied Science Workshop in Math Science, and Technology for Environmental and Marine Sciences, Mid-Suffolk Tech Prep Consortium (invited speaker);

Seals of Blackfish Rock, Group for the South Fork, Bridgehampton, NY (program leader/instructor);

Telecommunications with a Costa Rican Rain Forest, National Science Teaching Association: National Convention, Boston, MA (lecturer);

Marine Science and Fisheries Program, Roskilde Universitet, New York, NY (advisor/host);

Sachem's Neck in Winter, The Nature Conservancy, South Fork Shelter Island Chapter, Shelter Island, NY (program leader/instructor);

Imaging in Extreme Environments, International Design for Extreme Environments Assembly Two, Growth and Environment: Challenging Extreme Frontiers, McGill University Center for Northern Studies and Research, Montreal, Canada (panelist/lecturer);

The Tombolo of Upper Beach, Shoreline Morphology of Shelter Island, Group for the South Fork, Bridgehampton, NY (program leader/instructor);

Discrepancies in Color Reproduction Technology, Association for Computing Machinery Special Interest Group on Computer Graphics and Interactive Techniques Annual Conference, Boston, MA (course developer/instructor);

Use of Electronic Bluescreen Traveling Mattes in Live Distance Learning and Professional Development Programs, J.C. Penney Corporation, New York, NY (invited speaker).

Publications

Using Open-World Games to Support Inclusive Approaches to Computational Thinking. Using Open-World Games to Support Inclusive Approaches to Computational Thinking. Connected Science Learning, (Volume 5, Issue 1). With Bennett, D., Brunner, C., Hartmann, N. National Science Teaching Association (2023).

An Investigation of the Northeast Big Data Innovation Hub through Social Network Analysis. In: *The Social Leader: Catalyzing Networks for Educational Change* (C., Daly & Liou, Y., Eds.). With Bastón, R., Catherine, C., Daly, A., Hudson, F.D., Liou, Y., Naum, K., Thompson, W, & Umer, L. Bloomsbury Publishing (2023).

Exploring the utility of social-network-derived collaborative opportunity temperature readings for informing design and research of large-group immersive learning environments. Journal of Learning Analytics, 9(1), 53-76. (2022) With Mallavarapu, A. and Lyons, L.

Studying Shared Regulation in Immersive Learning Environments. 15th International Conference of the Learning Sciences. With Cohen, R., Mallavarapu, A. & Lyons, L. In de Vries, E., Hod, Y., & Ahn J. (Eds.). (2021). Proceedings of the 15th International Conference of the Learning Sciences - ICLS 2021. Bochum, Germany: International Society of the Learning Sciences.

From screen time to the digital level of analysis: a scoping review of measures for digital media use in children and adolescence; with: Browne, D., May, S.,Colucci, L.,Hurst-Della Pietra, P.,Christakis, D., Asamoah, T., Hale, L., Delrahim-Howlett, K., Emond, J., Fiks, A., Madigan,S., Perlman, G., Rumpf,H.-J., Thompson, D., Stapleton, J., Neville, R., Prime,H., The MIST Working Group. (2021) British Medical Journal.

Mapping computational thinking mindsets between educational levels with cognitive network science; with Stella, M., Kapuza, A. & Cramer, C. (2021) Journal of Complex Networks, Oxford University Press.

Formative Fugues: Reconceptualizing Formative Feedback for Complex Systems Learning Environments Mallavarapu, A. and Lyons, L. (2021) International Journal of Complexity in Education.

NetSci High: Bringing Agency to Diverse Teens Through the Science of Connected Systems, with Cramer, C..; Sayama, H.; and Faux, R. (2021) Northeast Journal of Complex Systems (NEJCS): Vol. 3: No. 2, Article 2. Available at: https://orb.binghamton.edu/nejcs/vol3/iss2/2.

Formative Fugues: Helping Learners Understand Complex Systems through Causal Inference and Lag Sequential Analysis. With Malavarapu, A. and Lyons, L. In Argyrakis Panos. *CCS2020 - Conference on Complex System 2020 - Book of Abstracts.* Presented at the Conference on Complex Systems 2020 (CCS2020), online: Zenodo. http://doi.org/10.5281/zenodo.4427919. (2020).

Co-Designing Learning Dashboards for Informal Educators. With Beheshti, E., Lyons, L., Mallavarapu, A., Thompson, W. and Wallingford, E. In Design Make Play for Equity, Inclusion and Agency edited by H. Ba, K. Culp & M. Honey. Routledge Publishing (2021).

The Pack: Eliciting Playful Embodied Computational and Systems Thinking. With Lyons, L., Ba, H., and Thompson, W. In *Design Make Play for Equity, Inclusion and Agency* edited by H. Ba, K. Culp & M. Honey. Routledge Publishing (2021).

Design Considerations for Data-Driven Dashboards: Supporting Facilitation Tasks for Open-Ended Learning. In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems. With Beheshti, E., Lyons, L., Mallavarapu, A., & Wallingford, B. (2020).

Research Culture: Framework for Advancing Rigorous Research (report from Workshop to Develop A Visionary Resource for Instilling Fundamental Principles of Rigorous Neuroscience Research). With W. Koroshetz, et al. eLife (2020);9:e55915. DOI: https://doi.org/10.7554/eLife.55915.

Getting it to Work: Exploring Student-Driven Problem Solving in Computational Making. With Wallingford, B., Beheshti, E., Wells, D., Kirk, D., Vargas, L. Proceedings of the FabLearn 2020 - 9th Annual Conference on Maker Education, April 2020 Pages 110–113, https://doi.org/10.1145/3386201.3386216.

Reframing Playful Participation in Museums: Identity, Collaboration, Inclusion, and Joy. With: Berland, M., McKinney de Royston, M., Lyons, L., Kumar, V., Hansen, D, Hooper, P., Lindgren, R., Planey, J., Quigley, K., Thompson, W., Behesht, E., Hladik, S., Helvaci Ozacar, B., Shanahan, M., Sengupta, P., Ahn, J., Kraus, K., Kaczmarek-Frew, K. & Booker, A. The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 3 (pp. 1503-1510). Nashville, Tennessee: International Society of the Learning Sciences.

Museum Makers: Family explorations of data science through making and exhibit design. With Susan Letourneau, S., Liu, C.C., Donnelly, K., Meza, D. & McMillan Culp, K. Curator: The Museum Journal (2020) New York: John Wiley and Sons. DOI:10.1111/cura.12348.

From 'Screen Time' to the Digital Level of Analysis: Protocol for a scoping review of digital media use in children and adolescents. With Browne D.T., May S., Hurst-Della Pietra P. and the Media Impact Screening Toolkit Workgroup of Children and Screens: Institute of Digital Media and Child Development, et al. BMJ Open (2019);9:e032184. doi: 10.1136/bmjopen-2019-032184.

Networks and Data: Adventures in Literacy and Learning. In Proceedings of the 63rd Annual ISSS Meeting, Corvallis, OR, USA. June 27 - July 2nd, 2019, Plenary. With Cramer, C.

Connect-to-Connected Worlds: Piloting a Mobile, Data-Driven Reflection Tool for an Open- Ended Exhibit. In CHI Conference on Human Factors in Computing Systems Proceedings (CHI 2019), May 4–9, 2019, Glasgow, Scotland UK. ACM, New York. With Mallavarapu, A., Lyons, L., Thompson, W., Levy-Cohen, R., and Slattery, B. (2019).

Proceedings of NetSciEd 2018: The NetSci Satellite Symposium on Network Science and Education at the International Workshop & Conference on Network Science, Institut des Systèmes Complexes de Paris. With C. Cramer, R. Gera, E. Panagakou, M. A. Porter, H. Sayama, L. Sheetz, M. Stella, eds. (Preprint: https://osf.io/7v9xt/).

Networks in Classroom Education Teacher Workshop: Engaging K-12 Teachers in the Development of Curricular Materials That Utilize Complex Networks Concepts. With Towlson, E., Sheetz, L., Gera, R., Roginski, J., Cramer, C. and Sayama, H. Complicity: International Journal of Complexity in Education, Vol. 15, No. 1. Edmonton: University of Alberta. 5 (2018).

Network Science in Education: Transformational Approaches in Teaching and Learning. Edited Volume, With C. Cramer, M. Porter, H. Sayama & L. Sheetz. Cham, Switzerland: Springer International Publishing AG (2018).

Network Visualization Literacy: Novel Approaches to Measurement and Instruction. With; Adam Maltese, A., Katy Borner, K., and Angela Zoss, A. In *Network Science in Education: Transformational Approaches in Teaching and Learning*. Edited by, C. Cramer, M. Porter, H. Sayama L. Sheetz & S. Uzzo. (2018).

Pedagogical Content Knowledge in STEM: Research to Practice. Edited Volume: With S. Graves, E. Shay, M. Harford & R. Thompson. Cham, Switzerland: Springer International Publishing AG. (2018).

Collaborative PCK in Practice: Bringing together secondary, tertiary and informal learning in a STEM residency program. With Harouna Ba and Laycca Umer. In *Pedagogical Content Knowledge in STEM: Research to Practice* edited by S. Uzzo. S. Graves, E. Shay, M. Harford & R. Thompson. (2018).

Cultivating Tipping Points: Network science in teaching. With Cramer, C., Gera, R., Labriole, M., Sayama, H., Sheetz, L., and Towlson, E, In Cornelius, S., Coronges, K., Gonçalves, B., Sinatra, R., Vespignani, A. (Eds.) *Complex Networks IX: Proceedings of the Ninth International Workshop on Complex Networks*, *CompleNet 2018*. Springer.

Big Data and the 95% Solution: Looking for Learning in All the Wrong Places, With Lyons, L. Proceedings for the Data for Good Exchange, New York: Bloomberg Finance, LLP (2017).

AUI Education and Public Outreach Advisory Council Review Report (AUI) (2017).

NetSciEd: Network Science and Education for the Interconnected World. With Cramer, C., Sayama, H., Sheetz, L. Complicity: International Journal of Complexity in Education, Vol. 14, No 2. (2017) https://journals.library.ualberta.ca/complicity/index.php/complicity/article/view/29339.

STEM Integration & 21st Century Learning: Bringing Authenticity to K-12 Teaching and Learning. Proceedings: Challenges for STEM Education in Brazil symposium, Brazilian Academy of Sciences, Rio de Janeiro, Brazil. In press.

A Common Vision for Undergraduate Mathematical Sciences Programs in 2025. 2015. Washington, DC: Mathematical Association of America Press.

What are essential concepts about networks? Journal of Complex Networks. 2015 Vol. 3 No. 4 Oxford: Oxford University Press. With: Cramer, C., Porter, M., Sayama, H., Sheetz, L.

Network Literacy: Essential Concepts and Core Ideas, 2015, NetSciEd. https://sites.google.com/a/binghamton.edu/netscied/teaching-learning/network-concepts. With: Cramer, C., Porter, M., Sayama, H., Sheetz, L.

Data Visualization Literacy of Youth and Adult Science Museum Visitors. AERA Conference Paper. 2015. With Borner. K., Maltese, A. and Balliet, R.

Complex Networks VI: Proceedings of the 6th Workshop on Complex Networks CompleNet 2015. In Series: Studies in Computational Intelligence, Vol. 597. With Mangioni, G., Simini, F., Wang, D. (Eds.).

NetSci High: Bringing Network Science Research to High Schools. With Cramer, C., Sheetz, L., Sayama, H., Trunfio, P., Stanley, H.E. In Complex Networks VI: Proceedings of the 6th Workshop on Complex Networks CompleNet 2015.

COSEE OCEAN Inquiry Group Report: Opportunities for Creating Lifelong Ocean Science Literacy. Boston, MA: School for the Environment, University of Massachusetts, Boston. 2014.

Puntacana Ecological Foundation and the Scaling of Sustainable Tourism Development. Ecology and Society, Vol. 18 No. 4. Resilience Alliance. 2013.

Ripple Effects: Small-Scale Investigations Into the Sustainability of Ocean Science Education Networks. In Complex Networks, Studies in Computational Intelligence, 424. A. Evsukoff, M. González, R. Menezes, Eds. Berlin: Springer Publishing Company. With R. Chen, C. Cramer, P. DiBona, and R. Faux. 2012.

Report of a Workshop of Pedagogical Aspects of Computational Thinking. Washington, DC: Computer Science and Telecommunications Board, National Academies Press. 2011.

Connections: The Nature of Networks, Communicating Complex and Emerging Science. In Science Exhibitions, Communication and Evaluation. Edited by Anastasia Filippoupoliti. Edinburgh: MuseumsEtc. With Eric Siegel. 2010.

Knowledge Management and Visualization Tools in Support of Discovery: NSF Workshop Report. Indiana University, Los Alamos National Laboratory, Yale University and the New York Hall of Science. With Luís M.A. Bettencourt, Mark Gerstein and Katy Börner. 2010.

Teaching Children the Structure of Science, Paper 7243-6, Proceedings of SPIE Conference on Visualization and Data Analysis, 2009, San Jose, CA: International Society for Optics and Photonics. With Katy Börner, Fileve Palmer, Julie M. Davis, Elisha Hardy and Bryan J. Hook.

The Man Who Spoke to Stones. In anthology "Terra Nova – Writing the Future: Progress and Evolution". Edited by David Rothenberg and Wandee Pryor. Massachusetts Institute of Technology Press, Cambridge: MA. 2004.

Light and Imaging in Extreme Environments: Proceedings, 2nd International Design for Extreme Environments Assembly, 1993, McGill University, Centre for Northern Studies, Montreal, PQ.

Perceptual Discrepancies in Color Reproduction Technology: Computer Output Technology (Course #1), Association for Computing Machinery, SIGGRAPH Conference, 1989, Boston, MA.

Advisory, Boards & Consultancies

- Airborne Instruments Laboratory
- American Institutes of Research
- American Zoological Association
- Associated Universities Incorporated
- Brooklyn Children's Museum
- Blue Sky Productions
- Central Intelligence Agency
- Concept Web Alliance

- Dutchess County Community College
- Fundación Grupo Puntacana
- Gulf of Maine Research Institute
- Greenport Schools
- Half Hollow Hills Youth Development Corporation
- Harvard University Professional Extension, Museum Studies Program
- Huntington Youth Board
- Luddy School of Informatics, Computing, and Engineering, Indiana University
- Institute of Digital Media and Child Development
- Lawrence Hall of Science
- The Long Island Aquarium
- McGill University Undergraduate Earth Science Program
- Monteverde Conservation League
- Nassau County Board of Cooperative Educational Serveice
- National Research Council
- National Science Foundation
- Network Science Society
- Northport-East Northport School District.
- Papalote-Museo Del Niño
- Real Pictures, Pty
- Salonga Wetlands Advocacy Network
- Science Gallery, Trinity College, Dublin
- Space Studies Institute
- Televisio Catalunya
- U.S. Air Force
- U.S. State Department
- University of North Dakota

Peer Review

- American Association for the Advancement of Science
- Canadian Society for Ecology and Evolution
- Cultural Data Analytics Open Lab Tallinn University
- Ecological Society of America
- Ecology and Society
- Frontiers Marine Science
- Institute of Museum and Library Services
- International Conference on Complex Networks and Applications
- International Conference on Complex Networks, Complenet
- Jackson Hole Wildlife Film Festival
- National Academy of Sciences
- National Aeronautics and Space Administration
- National Oceanographic and Atmospheric Administration
- National Science Foundation
- Northeast Regional Conference on Complex Systems
- Sloan Foundation
- Springer Nature

Membership

(Current)

- American Association for the Advancement of Science
- American Society for Cybernetics
- American Geophysical Union
- Association of Computing Machinery & ACM Special Interest group on Computer graphics and Multimedia (SIGGRAPH)
- Complex Systems Society
- Ecological Society of America
- International Network for Social Network Analysis
- International Society for Systems Science
- National Science Teaching Association
- Network Science Society
- Society for Industrial and Applied Mathematics
- Sigma Xi Scientific Research Honor Society

(Previous)

- Academy of Television Arts & Sciences
- American Society for Photogrammetry and Remote Sensing
- ACM Special Interest Group on Computer Uses in Education (SIGCUE)

- Association for the Development of Computer-Based Instructional Systems
- Association for Supervision and Curriculum Development
- Human Factors Society
- Institute of Electrical and Electronic Engineers/IEEE Computer Society
- Instructional Television Association
- International Society for Technology in Education
- Society for Information Display
- Society of Motion Picture and Television Engineers

Additional Information

- Please use: “stephen miles uzzo” or “stephen uzzo” as keywords in a web search engine.
- References available upon request.