


Data Science for High School Computer Science Workshop: Identifying Needs, Gaps, and Resources

Attendee Contact Information

	<p>Ajay Anand currently serves as the Deputy Director of the Goergen Data Science Institute at the University of Rochester where he is responsible for managing the data science education program and identify opportunities for expanding the curriculum offerings. As part of leading education outreach initiatives for the institute, Ajay recently launched an introductory high-school data science summer course within Rochester's pre-college program. Recently, Ajay served as a curriculum committee member of an international cooperative venture (http://www.idssp.org/) to create curriculum frameworks in Introductory Data Science to high-school students. He is the site-PI of an ongoing NSF-funded Research Experiences for Undergraduates (REU) program intersecting data science and music. Ajay also directs the data science capstone program working closely with industry partners. Prior to joining University of Rochester, Ajay served in R&D roles in the medical imaging industry as a senior research scientist and technical project leader in the area of medical ultrasound and healthcare data analytics. He is the co-inventor on more than 25 patent applications and co-authored more than 35 journal articles and conference proceedings. His research interests are in time-series analysis, physical model-based predictive analysis, and biomedical data analytics. Ajay earned his PhD and MS degree from University of Washington, Seattle.</p>
<p>Ajay Anand ajay.anand@rochester.edu</p>	<p>René Bastón is the Executive Director of the Northeast Big Data Innovation Hub, dedicated to building or strengthening cross-sector and interdisciplinary partnerships to address large challenges. He is an instructor of the Lean Startup methodology for the NSF's I-Corps program and the co-founder of three startups. Previously, René was Special Advisor on Innovation and Entrepreneurship to the City University of New York Vice Chancellor for Research; Director of Industry Interactions and Entrepreneurship at Columbia University's Data Science Institute; Chief Business Officer at the New York Academy of Sciences; Associate Director at Columbia's Science & Technology Ventures; a manager in Ernst & Young's Healthcare IT consulting group; and spent several years in the laboratory of Eric Kandel at Columbia University's Center for Neurobiology and Behavior. He earned both his M.A. in Biomedical Informatics and his B.A. from Columbia University. René has served on the Advisory Boards of the CUNY Hub for Innovation and Entrepreneurship, Center for an Urban Future, Columbia Center for Advanced Information Management, and the NY Battery and Energy Storage Consortium.</p>
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Dorothy Bennett
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Dorothy Bennett is currently NYSCI's Director of Creative Pedagogy, responsible for researching and developing how design, making, and play experiences can offer powerful pathways for diverse learners into STEM. Drawing on 30 years of experience creating k-12 educational media, curricula and teacher enhancement programs, she has researched and developed core pedagogical approaches and preliminary content for NYSCI's Design Lab, a 9,000 square foot interactive exhibit dedicated to engaging school groups and families in hands-on engineering design experiences that spark creative problem solving and invention. She is currently leading a large scale NSF-funded design-based research study with museum partners investigating how narrative elements can shape girls' engagement in museum-based engineering tasks. She also spearheaded the development of NYSCI's Noticing Tools, a suite of innovative apps that enable children to make math and science discoveries in context of creating compelling digital design projects, with a focus on how they can enhance English Language Learners' mathematics, science, and data literacy. Prior to joining NYSCI, she was a Senior Project Director and Principal Investigator at EDC's Center for Children and Technology, leading an array of national research studies focused on opening up science, engineering, and technology to underrepresented groups. Her most notable work involved creating narrative-rich, online tinkering and mentoring environments that draw women and girls into STEM.

Jo Boaler

Stanford University



Dr. Kirk Borne
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Dr. Kirk Borne is the Principal Data Scientist, first Data Science Fellow, and an Executive Advisor at global technology and consulting firm Booz Allen Hamilton since 2015. He provides thought leadership, mentoring, training, and consulting activities in data science, machine learning, and AI across multiple disciplines. Previously, he was Professor of Astrophysics and Computational Science at George Mason University for 12 years in the graduate and undergraduate data science programs, the latter of which he co-created in 2006. Prior to that, he spent nearly 20 years supporting data systems activities for NASA space science programs, including a role as NASA's Data Archive Project Scientist for the Hubble Space Telescope. Dr. Borne has degrees in physics (B.S., LSU) and astronomy (Ph.D., Caltech). He is an elected Fellow of the International Astrostatistics Association for lifelong contributions to big data research in astronomy. As a global speaker, he has given hundreds of invited talks worldwide, including keynote presentations at dozens of data science, AI and analytics conferences. He is an active contributor on social media, where he promotes data literacy for all and has been named consistently among the top worldwide social influencers in big data, data science, and AI since 2013.



Amy Busey
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Amy Busey is a Senior Research Associate at EDC's Oceans of Data Institute (ODI) where she leads and contributes to a diverse array of initiatives that support STEM proficiency and school, college, and career success. Her recent work has focused on developing and testing data-centered science curriculum for middle and high school students, and she is Co-PI on newly funded work that explores the potential for authentic data to promote data literacy in elementary grades. Busey was a primary author of ODI's Visualizing Oceans of Data report—a groundbreaking effort to provide guidelines to support interface and tool designers in bridging cyberinfrastructure to classrooms, enabling students to work with large, high-quality scientific datasets. Busey also has experience in qualitative research, promotion of knowledge utilization, and researcher-practitioner partnerships. She engages groups of STEM education researchers in knowledge sharing and dissemination around topics including educational technologies. Busey holds a BS in Psychology from the University of North Carolina at Chapel Hill and an EdM in Mind, Brain, and Education from the Harvard Graduate School of Education.




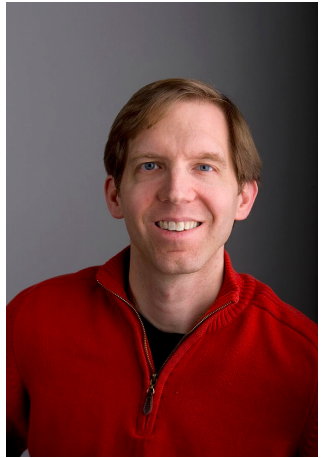

Ian Castro
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Ian Castro is an undergraduate student majoring in Media Studies and Microbial Biology at the University of California, Berkeley. Through Berkeley's Division of Data Science and Information, Ian works on designing introductory data science education programs at the undergraduate and graduate level. Under the guidance of Professor Karen Chapple, Ian is the lead instructor for Introduction to Data Science for Graduate Students: a hybrid course for professional track graduate students utilizing massive open online course materials and in-person discussion sections to teach Python and basic data science techniques. At the undergraduate level, he is involved as a student instructor for UC Berkeley's Data 8 course, Foundations of Data Science. He is particularly interested in issues of access, equity, diversity, and inclusion for women and underrepresented minority students in STEM and is currently researching solutions for these problems.



Catherine Cramer
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Catherine Cramer works at the intersection of data-driven science and learning, specifically as it pertains to the understanding of complexity and its application to data and network sciences, with a focus on underrepresented communities. For over 20 years she has developed tools and programs for the teaching and learning of complex network and data science, centering on identifying, creating, sustaining and growing productive and innovative collaborations and partnerships between research, industry and academia. She worked with the centers for Ocean Science Education Excellence (COSEE) and the Ocean Literacy initiative from 2004-2014, and was one of the founders of the Network Literacy and Network Science in Education movements. She remains active in both, most recently organizing the 8th annual Network Science in Education symposium at the University of Vermont as part of the 2019 International School and Conference on Network Science, and is on the Board of the Network Science Society. She is co-editor and co-author of the Springer volume Network Science in Education, published in October 2018. She is

	<p>currently co-leading the data literacy efforts at the Northeast Big Data Innovation Hub, located at the Columbia University Data Science Institute, as well as a Social Network Analysis of the Hub itself. She is also Founder and Principal of the Woods Hole Institute.</p>
 <p>Yadana Desmond yadana@stemteachersnyc.org</p>	<p>With almost fifteen years experience teaching and managing science education programs in both formal and non-formal settings, from grades pre-K to undergraduate, I continually seek ways to integrate and create partnerships around STEM and environmental subjects, incorporating organizational, statistical and research skills, into locally relevant project-based learning experiences and materials. Working as program director for STEMteachersNYC, an organization that offers professional development programs created and delivered by and for teachers, allows me to support others in doing just that! Prior experience includes work in Thailand for the Enjoy Science Partnership, through the Consortium for Policy Research in Education at Teachers College, and several years as Program Manager of Education Services at the New York Hall of Science.</p>
 <p>Chad Dorsey cdorsey@concord.org</p>	<p>Chad Dorsey is President and CEO of the Concord Consortium, which has been an innovation leader in researching and developing STEM educational technology for the past twenty years. Chad's experience ranges across the fields of science, education, and technology. In addition to overseeing a wide variety of STEM projects at the Concord Consortium, he serves as a leader in educational technology across the field on numerous advisory groups and professional workshops. Prior to joining the Concord Consortium in 2008, Chad led teacher professional development workshops as a member of the Maine Mathematics and Science Alliance. Chad has also taught science in classrooms from middle schools through college and has guided educational reform efforts at the district-wide and whole-school levels. While earning his B.A. in physics at St. Olaf College and his M.A. in physics at the University of Oregon, Chad conducted experimental fluid mechanics research, built software models of Antarctic ice streams, and dragged a radar sled by hand across South Cascade Glacier. He first met computers when his family hooked an Apple II to their fancy new color TV set, and he's been a shameless geek ever since.</p>
 <p>Ana Echeverri ana.echeverri@us.ibm.com</p>	<p>Ana Maria Echeverri works at IBM focused on Data Science, Machine Learning, and Artificial Intelligence Skills Growth and Strategy. Her career spans multiple leadership roles in Sales, Marketing, Partner Ecosystems, and Analytics in the Technology industry (Informix, Microsoft, Citrix and IBM); and also leadership roles in startups as Founder and as leader in Digital Marketing and Analytics. A lifelong learner, avid reader, and an entrepreneur at heart, her passion is to build from scratch (businesses, strategies, teams, programs) while leveraging data science and AI capabilities and digital competencies. At IBM she has built a Data Science Skills Competency model, a Data Science Apprenticeship program, spearheaded the creation of an Open Source Data Science Curriculum Kit, and multiple Data Science, Machine Learning and AI learning programs. She holds a Computer Engineering degree, an</p>

	<p>MBA, a Master of Science in Analytics, and a Graduate Certificate in Strategic Management.</p>
 <p>Susan Ettenheim susanettenheim@gmail.com</p>	<p>Susan Ettenheim started her professional life as a visual artist and is a recipient of a National Endowment for the Arts Award in Painting. She worked in libraries and bookstores and created commissioned embroidery pieces, then was Director of Community for Oxygen Media working with Oprah Winfrey’s message boards and chats and specializing in women and teen girls online. Susan is a Computer Science and Arts teacher at Eleanor Roosevelt High School, 02M4161, a BJC (Beauty and Joy of Computing) Master Teacher and is a part of the Turtlestitch.org digital embroidery team. With Emmanuel Schanzer, creator of the Bootstrap Data Science curriculum, she is facilitating the first ever Data Science course for CS4All, New York City Department of Education to be taught at 15 schools in the 20-21 school year. Integrating Art and Computer Science is a video about using Turtlestitch to teach Computer Science in Susan Ettenheim’s classroom in New York City. The Coding and Stitching website is an international project, using Snap and Turtlestitch to interpret traditional cultural patterns for the purpose of stitching and coding collaboratively.</p>
 <p>Melissa Floca mfloca@ucsd.edu</p>	<p>Melissa Floca leads the development and implementation of the Center’s academic programming and research agenda. Her work focuses on issues of education, workforce development and economic competitiveness and she is the Co-Director of the Mexican Migration Field Research Program. Formerly, she worked at the Mexico City-based office of McKinsey & Co., serving clients on projects related to financial inclusion, public health and low-income housing. She went on to found Sé Más Microfinanzas, a microfinance organization providing financial education and financial services to micro-entrepreneurs in Mexico. She holds a degree in Political Science and Economics from Johns Hopkins University and a Graduate Diploma in International Relations from the Johns Hopkins SAIS Bologna Center. She is also a graduate of Columbia Business School. Melissa sits on the Leadership Council of the UC Mexico Initiative, the Inclusive Growth Steering Committee of the San Diego Regional Economic Development Corporation, and the International Affairs Board of the City of San Diego.</p>



Jeff Forbes
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Jeff Forbes is a Program Director for the Education & Workforce program in the National Science Foundation's Directorate for Computer & Information Science & Engineering (NSF CISE), managing programs that address the critical and complex issues of education and broadening participation in computing. Jeff is currently on leave from Duke University where he is an Associate Professor of the Practice of Computer Science. He received his BS and PhD in computer science from Stanford University and the University of California, Berkeley, respectively. His research interests include computer science education, social information processing, and learning analytics.



Daniel R. Fuka
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Daniel is a cross-disciplinary scientist working on the Big Island of Hawai'i for Virginia Tech University. He is passionate about mentoring researchers young and old about the scientific opportunities that exist when bridging many disparate sciences. Daniel is an active member of the EarthCube(EC), ESIP, and NEREID communities, a key collaborator on the EC Architecture BCube brokering project, and is a Co-PI on the NSF BALTO data brokering project. He has been active in the NSF RCN on Intelligent Systems for Geosciences (IS-GEO) creating collaborations to better our understanding of Earth systems through applications of intelligent information systems. Outside of his research scientist day job, Daniel enjoys the challenges and rewards of teaching and mentoring students who are at risk of starting their college education under-prepared, and he has been using data architectures in unique ways to bring less prepared college students up to speed quickly while not compromising the education of their better-prepared peers. Daniel is a cross-disciplinary scientist working on the Big Island of Hawai'i for Virginia Tech University. He is passionate about mentoring researchers young and old about the scientific opportunities that exist when bridging many disparate sciences.




Matt Gee

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Crystal Furman
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Crystal Furman is a former AP CS teacher of 17 years, who leads the AP Computer Science Principles (AP CSP) curriculum, instruction and assessment development. As a pilot teacher for AP CSP, becoming an instructional designer for College Board, was the next right path for Crystal to pursue. During her four years at College Board, she has been pivotal in the successful launch of AP CSP, AP's largest course launch in its over 60 year history. She worked with the AP CSP development committee to finalize the exam, authored the instructional approaches section of the Course and Exam Description, and created training materials for AP Summer Institutes and AP Mentoring. In her work as former AP lead of AP Computer Science A (AP CSA), she worked with a committee

	<p>to articulate this course, beyond just topics, identifying big ideas and skills and articulating the exam task types to provide more transparency to all teachers. The culminating results of this work is the new AP CSA Course and Exam Description that was released in May 2019.</p>
 <p>Michelle Gilman mgilman@ubalt.edu</p>	<p>Michele Gilman is the Venable Professor of Law at the University of Baltimore School of Law. Professor Gilman teaches in the Civil Advocacy Clinic, where she supervises students representing low-income individuals and community groups in a wide range of litigation, legislation, and law reform matters. She writes extensively about privacy, poverty, and social welfare issues, and her articles have appeared in journals including the <i>California Law Review</i>, the <i>Vanderbilt Law Review</i>, and the <i>Washington University Law Review</i>. For the 2019-2020 academic year, she is a faculty fellow at Data & Society, where she is researching the intersection of data privacy law and the concerns of low-income communities. She attended Duke University and the University of Michigan Law School.</p>
 <p>Narine Hall nhall@champlain.edu</p>	<p>Narine Hall is an Assistant Professor and Program Director in Data Science at Champlain College, where she has been a faculty member since 2015. Narine holds a Ph.D. in Computer Science and Complex Systems from the University of Vermont. Narine’s research interests lie in the area of data mining, machine learning, cloud computing, evolutionary computation, and complex systems. In 2014 she founded a company called BlinkSecure while working on her Ph.D. Previously she worked at Wolfram Research, IBM, Watson, and Lycos Europe. Currently, she advises local startups in data science and artificial intelligence strategy and implementation. Narine is an enthusiastic advocate for local farms, sustainable agriculture and general education around food sourcing and farm to table movement. She enjoys running races with her kids, CrossFit and competing at Dragon Boat Festival with Champlain’s team.</p>
 <p>Nicholas Horton nhorton@amherst.edu</p>	<p>Nicholas Horton is Beitzel Professor of Technology and Society and Professor of Statistics and Data Science at Amherst College. His recent work has focused on statistics and data science education. Nick is a fellow of the American Statistical Association and the American Association for the Advancement of Science. He chaired the Committee of Presidents of Statistical Societies and the ASA Curriculum Guidelines for Undergraduate Programs in Statistical Science workgroup. Nick serves on the National Academies Committee for Applied and Theoretical Statistics, was a co-author of the 2018 "Undergraduate Data Science: Opportunities and Options" consensus study report and the ASA's 2016 revised GAISE (Guidelines for Assessment and Instruction in Statistics Education) College Report, and served on the NASEM Roundtable on Post Secondary Data Science Education.</p>
<p>Allyson Kennedy</p>	<p>National Science Foundation</p>



Shriram Krishnamurthi
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Shriram Krishnamurthi is a Professor of Computer Science at Brown University. With collaborators and students, he has created several influential systems and written multiple widely-used books. He also co-directs the Bootstrap integrated computing outreach program. For his work he has received SIGPLAN's Robin Milner Young Researcher Award, SIGSOFT's Influential Educator Award, SIGPLAN's Software Award (jointly), and Brown's Henry Merritt Wriston Fellowship for distinguished contribution to undergraduate education. He has authored over a dozen papers recognized for honors by program committees. He has an honorary doctorate from the Università della Svizzera Italiana.






Victor R. Lee
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Victor R. Lee is an Associate Professor in the Graduate School of Education at Stanford University. Through his research, he tries to understand the new opportunities for people of all ages to learn STEM content and practices with the support of emerging digital technologies. Current research examines computational thinking in elementary school, maker education in out of school settings, and teaching and learning about data in K-12 settings. Lee completed his undergraduate studies at UC San Diego with emphasis in cognitive science, human computer interaction, and mathematics. He earned his doctorate in Learning Sciences at Northwestern University. Since leaving the midwest and beginning his professional academic career, he has received the National Science Foundation CAREER award, the Jan Hawkins Award, and a post-doctoral fellowship from the National Academy of Education and the Spencer Foundation. His book, *Learning Technologies and the Body* (published by Routledge), is the first compendium of current research on embodied technologies for learning. With Abigail Phillips, he published a new book, *Reconceptualizing Libraries: Perspectives from the Information and Learning Sciences* (2018). Victor sits on the editorial board of several leading journals, including *Journal of the Learning Sciences*, *Cognition & Instruction*, and *Educational Technology Research & Development*.



Diane Levitt is the Sr. Director of K-12 Education for Cornell Tech. She drives our engagement with the national and NYC computing education communities, including the NYC Dept. of Education's CSforAll initiative, and works with nonprofit partners and individual schools to catalyze K-12 computer science. [@diane_levitt](https://twitter.com/diane_levitt)

<p>Diane Levitt diane.levitt@cornell.edu</p>	
 <p>Meredith Mante meredith.mante@ibm.com</p>	<p>Meredith Mante is a Data Scientist with a focus on education. Within IBM's Data and AI group, she develops curriculum on Data Science and Artificial Intelligence topics for client audiences and the broader Data Science/AI Learning Community. She has a bachelor's degree in Psychology (Princeton) and two master's degrees, in Computer Science (NYU) and School Counseling (Manhattan College). She has taught in a variety of settings and she has university experience as a teaching assistant and lecturer in computer science.</p>
 <p>Joe Melendez jam967@cornell.edu</p>	<p>Joe Melendez recently joined Cornell Tech as Teacher-in-Residence, after overseeing Computer Science development and integration in K12 public schools, as the Computer Science Education Manager for the Borough of Manhattan with the New York City Department of Education's CS4All Initiative. Previously Joe had been the STEM Manager at ExpandEd Schools, curriculum developer and edtech specialist at the New York Academy of Sciences, and an educational program developer at the Liberty Science Center. Prior to working in education Joe had been a computer hardware specialist for a small startup in New Jersey and a staff-reporter for the Santa Barbara News-Press in California.</p>
 <p>Katie Naum ken2115@columbia.edu</p>	<p>Katie Naum is the Operations Manager of the Northeast Big Data Innovation Hub, a Science Writer for the National Center for Supercomputing Applications, and a consultant specializing in science and technology communication. She earned a B.A. in sustainable development from Columbia University.</p>



Tom O'Connell
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Tom O'Connell is the Chief Partnerships Officer at Mouse, where he develops strategic partnerships to ensure that every young person has the opportunity to access and amplify technology as a force for good. He is a former high school physics & computer science teacher who started his education career through Teach For America. Prior to his role at Mouse, Tom taught in Houston and Brooklyn, instructed graduate students in CS education, and served as the Interim Executive Director at Code/Interactive, which merged with Mouse in 2018. Tom is a facilitator for Exploring Computer Science, Google CS First, and the CSForAll Initiative's SCRIPT workshop. He is a co-PI on an NSF funded research grant with Hunter College studying formative assessment practices in CS education and a frequent speaker at CS and STEM education related events and conferences.



Stephanie Ogden
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Stephanie Ogden leads AP Calculus and AP Statistics for the College Board, where she enjoys the opportunity to support teaching and learning of mathematics for all students and to collaborate with likeminded individuals across the broader program.

Stephanie taught students in higher education and secondary math classrooms for more than three decades. During that time, she also became a school leader focused on developing teachers and innovative STEM curriculum. Dr. Ogden was the Principal Investigator for Knox County Schools' First to the Top Grant establishing the East Tennessee hub of the Tennessee STEM Innovation Network and the L&N STEM Academy. In that capacity, she enjoyed the opportunity to coordinate with regional and national representatives from higher and secondary education, government agencies and research entities, philanthropic organizations, and industry—all sharing an interest in STEM education. Stephanie presented frequently at workshops and conferences for leaders and teachers interested in developing individual, regional, and national capacity through education. As work-related tasks and roles have evolved over time, Stephanie's definition of herself as a professional has remained steadfast: Stephanie is a teacher.



Tapan Parikh
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Tapan Parikh is an Associate Professor of Information Science at Cornell Tech in New York City. His research interests include human-computer interaction and the design and use of information technologies for supporting youth and community development. He currently teaches the Remaking the City course at Cornell Tech, which connects graduate students with civic organizations to work on service learning and design projects for local impact. Previously, he was a professor at the UC Berkeley School of Information, where he was one of the founders of the field of Information and Communications Technologies and Development (ICTD), and helped start several international social enterprises working in this area. He has received the NSF CAREER award, a Sloan Fellowship, a UW Diamond Early Career Award and was named Technology Review magazine's Humanitarian of the Year in 2007.



Aankit Patel
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Aankit Patel recently joined the City University of New York (CUNY) as Director of STEM Education Programs ([@cunyteachered](https://twitter.com/cunyteachered)) to support the development of STEM technical, pedagogical, and content knowledge of teacher education students. Over the past five years, he worked to bring [creative, physical, and critical computing](#) to K-12 classrooms (trained over 2,300 in-service teachers) as a leader of the Computer Science for All at the NYC Department of Education, utilizing [co-design with teachers and community stakeholders](#) to develop a [NYC K-12 CS framework, learning objectives](#), and [resources](#) that could meet a range of differentiated needs. He forged a partnership with NYU and the [Processing Foundation](#) to help officially launch the [p5js web editor](#), co-PI'd a grant with EDC and UC Berkeley to adapt the [Beauty and Joy of Computing \(BJC\)](#) curriculum for NYC high schools, and won an NSF grant with EDC to help focus lower performing schools to successfully implement CS.



Kelly Powers
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Kelly is a dedicated professional with 20 years of experience in education and 14 years in business. Established the first Computer Science Teachers Association Chapter in Massachusetts to collaborate with a team of teachers to improve CS education and to support CSTA at the national level. While in New York, launched the New York City Scratch Educators Meetup Group and formed relationships with CSNYC, Code/Interactive, NYC DOE CS leaders, and Cornell Tech. While in Massachusetts established strong relationships with the Massachusetts Department of Education, University Professors, industry leaders, local business leaders, NSF funded project leaders from CAITE/ECEP, BAITEC to collaborate on common efforts to improve CS education funding, certification, and opportunities for teachers and students. Worked with student leaders outside of school to run workshops for local communities to learn about Computer Science while creating artifacts. Developed an innovative Computer Science curriculum for schools and have led major projects for IBM, John Hancock and Harvard University. The combination of education and corporate experience has helped me sustain excellent peer and client relationships with policy leaders, industry leaders, teachers, parents, and students.



Hari Raghavan
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Hari Raghavan is a Senior Program Manager with IBM Corporate Social Responsibility in New York City, where he works on a variety of tech-related education and skills development initiatives for adults and young people across the world.



Meg Ray
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Meg Ray is a K12 Education Advisor at Cornell Tech. Meg teaches education courses at NYU and Hunter College, and is an experienced high school computer science teacher and curriculum developer. She was a writer for the CSTA Standards for CS Educators, CSTA K-12 CS Standards, and K12 CS Framework. She conducts educational research related to teaching CS to students with disabilities and CS teacher preparation. Meg is the author of the book *Code This Game!*



Jennifer Rosato
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Jennifer Rosato leads the National Center for Computer Science Education at the College of St. Scholastica in Duluth, MN. The Center champions, researches, and provides equitable computer science education opportunities for K16 students and educators through research, curriculum, and professional development. Curricula for Advanced Placement courses include Mobile CSP and CS Awesome, which are used by thousands of teachers and students across the country. Rosato has also created and directs programs to prepare computer science teachers in pre-service and in-service programs. She is the principal investigator and consults on multiple grants from the National Science Foundation, Google, and Infosys Foundation, USA totaling over \$6 million. Rosato is currently the Chair of the Board of Directors for the Computer Science Teachers Association. Rosato has a bachelor's degree in Biochemistry from St. Scholastica and a Masters of Arts in Information Systems Management from Carnegie Mellon University.



Andee Rubin
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Andee Rubin is a mathematician, computer scientist, and learning scientist who has been studying the growth of students' and teachers' statistical reasoning for almost 30 years, particularly as it is enabled by research-based tools for statistics education. She was involved in the development of several such pieces of software and led the ViSOR (Visualizing Statistical Reasoning) project, which studied how middle and high school teachers used data visualization tools with their students. She was co-PI of Science Literacy through Infographics (SLI), which studied the development of a socio-technical system for supporting high school students in creating science infographics and is co-PI of Data Clubs for Middle School Youth, which is developing introductory data science out-of-school experiences.



Emmanuel Schanzer
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Emmanuel spent several years as a program manager and developer before becoming a public high school teacher and middle school academic coach in Boston. He is the founder and co-director of Bootstrap, which he first designed as a curriculum for his own students. He has long been involved in connecting educators and technology, connecting parties at the Computer Science Teachers Association, Google, Microsoft, Facebook and at universities across the country. He holds degrees in computer science and curriculum development, and completed his doctoral studies at Harvard with a research focus on using programming to teach algebra.






Lisa Singh
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Lisa Singh is a Professor in the Department of Computer Science and a Research Professor in the Massive Data Institute (MDI) at Georgetown University. She has authored/co-authored over 70 peer reviewed publications and book chapters related to data-centric computing. Current projects include studying privacy on the web, identifying noise and poor quality information on social media, developing methods and tools to better understand forced movement due to conflict, and learning from public, open source big data to advance social science research involving the understanding of human behavior. Her research has been supported by the National Science Foundation, the Office of Naval Research, the Social Science and Humanities Research Council, and the Department of Defense. Dr. Singh has also recently organized three workshops involving future directions of big data research and is currently involved in different organizations working on increasing participation of women in computing and integrating computational thinking into K-12 curricula. Dr. Singh received her B.S.E. from Duke University and her M.S. and Ph.D. from Northwestern University.



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Julia Stoyanovich is an Assistant Professor at New York University in the Department of Computer Science and Engineering at the Tandon School of Engineering, and the Center for Data Science. Julia's research focuses on responsible data management and analysis practices: on operationalizing fairness, diversity, transparency, and data protection in all stages of the data acquisition and processing lifecycle. She established the Data, Responsibly consortium (<https://dataresponsibly.github.io/>), and served on the New York City Automated Decision Systems Task Force, by appointment from Mayor de Blasio. In Spring 2019, Julia developed and is teaching a course on Responsible Data Science at NYU (<https://dataresponsibly.github.io/courses/spring19/>). In addition to data ethics, Julia works on management and analysis of preference data, and on querying large evolving graphs. She holds M.S. and Ph.D. degrees in Computer Science from Columbia University, and a B.S. in Computer Science and in Mathematics and Statistics from the University of

	<p>Massachusetts at Amherst. Julia's work has been funded by the NSF, BSF and by industry. She is a recipient of an NSF CAREER award and of an NSF/CRA CI Fellowship.</p>
 <p>Rochelle Tractenberg rochelle.tractenberg@gmail.com</p>	<p>Rochelle Tractenberg is a tenured professor at Georgetown University who focuses on cognitive scientific aspects of teaching and learning in graduate and post-graduate/professional education. Her research falls into three main categories: methodology and clinical trial design; psychometrics for, and measurement of, difficult-to-assess clinical entities; and curriculum development and evaluation in higher education. She is the creator of the Mastery Rubric construct, which captures the knowledge, skills, and abilities of a curriculum and maps their developmental trajectory into performance level descriptors that can be concretely demonstrated using a variety of evidence and assessment methods. An elected fellow of both the American Statistical Association and the American Association for the Advancement of Science, she has been recognized for her commitment to ethical practice (of statistics and data science) and for her stewardship of science.</p>
 <p>Stephen Uzzo suzzo@nysci.org</p>	<p>As Chief Scientist for the New York Hall of Science (NYSCI), Stephen Uzzo develops and leads large-scale initiatives to research and integrate cutting edge science into teaching and learning. He currently develops programs to build communities of practice in complexity, data-driven science and engineering, and improve science, technology, engineering and math (STEM) literacy of the public. His background includes over 20 years experience in the research of connected systems and teaching and learning in STEM; and prior to that, 10 years in video and computer graphics systems engineering. Dr. Uzzo's research interests include the coupling of complex human and natural systems, complex networks, smart cities, and the impact of big data on communities of need. He holds a terminal degree in network theory and environmental studies and serves on a number of institutional and advisory boards related to his interests. His work also includes developing, studying and teaching graduate programs in STEM learning. Having never lived very far from the ocean in New York and California, Dr. Uzzo has been a lifelong advocate for marine conservation.</p>
 <p>Sara Vogel svogel@gradcenter.cuny.edu</p>	<p>Sara Vogel is a doctoral candidate in Urban Education at the Graduate Center of the City University of New York, writing her dissertation about how emergent bilingual middle schoolers use diverse language resources during computer science activities. She is currently the lead research assistant on Participating in Literacies and Computer Science (PiLaCS), a National Science Foundation-funded project which aims to leverage the diverse language practices of bilingual youth as resources in their computer science learning. In collaboration with the NYC-based Hive Research Lab, she founded the CS Education Visions project, which has surfaced the diverse visions that formal and informal educators have for universal computer science education initiatives.</p>



Michelle Wilkerson
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Hello! I am an Assistant Professor in the Graduate School of Education and the Graduate Group for Science and Mathematics Education (SESAME) at UC Berkeley. I study how young people learn with and about digital texts such as simulations, visualizations, and data explorers. Using participatory design-based methodologies, I develop tools and pedagogies that position students as authors of computational texts by building on familiar expressive practices such as sketching, crafting, and storytelling. Much of my work focuses on computational data visualization and analysis. My 2014 project "DataSketch" exploring young learners' data visualization literacies was awarded a 2014 NSF CAREER grant. "Writing Data Stories," a new collaboration between UC Berkeley, the Concord Consortium, North Carolina State University, and the University of Texas at Austin is exploring the development of students' sociocritical data literacies in the middle school science context. I am fascinated by how learners' relationships to data impact their learning. Recently, along with Joseph Polman, I guest edited a special issue of the *Journal of the Learning Sciences* devoted to this topic—I hope you check it out! I hold a PhD in Learning Sciences from Northwestern University, and was an Assistant Professor at Tufts University before joining UC Berkeley.



Elena Yulaeva
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Dr. Elena Yulaeva is an expert in global and regional climate and weather analysis and modeling, with years of experience in high-performance computing, numerical methods in geophysics, statistical analysis, machine learning, data science, and management of international multi-stakeholder projects. She received her Ph.D. in atmospheric sciences from the University of Washington. For the last 20+ years she has been engaged in climate change analysis and its impacts on global communities. In addition to her research work at UCSD, Elena runs (as an Executive Director) Community Commons, a San Diego based non-profit organization that develops innovative solutions to support informed, healthy, equitable, and sustainable communities. In this capacity, she has organized and led educational STEM programs at several levels, from K-12 to university students. She is the founder and co-director of the award-winning international Global Forest Link Project (globalforestlink.com), which emphasizes active learning and engages youth from multiple countries in field environmental data collection, data analysis, development of digital stories, and collaboration. The project's curriculum spans existing high school courses, employing innovative data science gateway tools and real datasets to get youth engaged and prepare them professionally for 21-st century jobs.