Drexel University ✲ SUNY Cortland ✲ University of Massachusetts Boston

Noyce Northeast Conference

March 26-28, 2015 • Boston, MA

AGENDA

Thursday, March 26, 2015

2:15 PM – 4:00 PM	**Pre-conference Workshop**	MIT Museum
5:00 PM – 7:00 PM	**Registration**	2nd Floor Foyer

Friday, March 27, 2015

7:30 AM – 8:45 AM	**Continental Breakfast & Registration**	2nd Floor Grand Ballroom
8:45 AM – 9:30 AM	**Welcome** • **Dr. Lisa Gonsalves, University of Massachusetts Boston, Dr. Sheila Vaidya, Drexel University, and Dr. Gregory Phelan, SUNY Cortland** • **Dr. Terry Woodin, NSF Program Officer, Noyce Scholarship Program**	2nd Floor Grand Ballroom
9:30 AM – 10:30 AM *Keynote Address*	**The Adventures of Teaching in an Urban Classroom** **Marilyn Decker** What happens once Noyce Scholars begin teaching? How can we work together to ensure our educators stay in the classroom? Marilyn Decker's address will include vignettes from new teachers and her own experience as a science director in a large urban district.  **Marilyn Decker** is the Director of the Office of Science, Technology, Engineering and Mathematics (STEM) at the Massachusetts Department of Elementary and Secondary Education (DESE), which oversees the development and implementation of the STEM standards. The office is currently developing new K-12 Digital Literacy and Computer Science Standards. Prior to coming to DESE, Marilyn was the Director of Science/STEM in several districts including Milton, MA, Boston Public Schools, Louisville, KY and Keene, NH. Marilyn began her career as a Physics and Chemistry teacher and has taught science in all grades K-12. Marilyn has served as a Co-Principal Investigator on numerous NSF projects including the B**oston Science Partnership (**$13.8M), Boston's **Urban Systemic Initiative ($5M),** Track 2, GK-12: The Watershed-Integrated Sciences Partnership-2 (WISP-2) ($1.7M) and **IMPACT**, A K-12 Mathematics and Science Curriculum Implementation Center ($5.9M). These projects have had a strong focus on developing teacher content and pedagogical knowledge as well as teacher leadership.	2nd Floor Grand Ballroom
10:30 AM – 10:45 AM	**Break**	

10:45 AM – 11:45 AM *Concurrent Sessions*	**1) Effectively Using Mobile Technology in the Math Classroom** **Chris Widdall, SUNY Cortland** From simple writing tasks to the infusion of collecting and presenting student work, mobile technologies can bring the extra edge you have needed to keep today's 21st century student engaged. Come join this hands-on workshop where you will have the opportunity to see and use apps to supplement a lesson, engage students, design projects, collect data, and use app-in-app tools, while showcasing the power of math! The presentation will focus on the OS mobile platform, with infusion of Android and some cross platform apps.	Breakout Rooms, 2nd /3rd Floors
	2) Infusing Engineering into Science Learning Experiences **Kristin Wendell, University of Massachusetts Boston** The *Next Generation Science Standards* differ from previous national science education frameworks in several fundamental ways, including the elevation of engineering design "to the same level as scientific inquiry in science classroom instruction at all levels." This prominence of engineering in the *NGSS* raises new challenges and opportunities for K-12 science teachers and students. This session will describe an approach to infusing engineering design into science courses and provide participants with an opportunity to solve an engineering problem that extends and applies science knowledge and reasoning.	
	3) Next Generation Science Standards & Project-based Science **Regina Toolin, Adam Fortin, Justin Gay, Meghann Palermo, Guillermo Sarriera, Brian Varga, University of Vermont** Participants will engage in a creative exploration of the principles and practices of the Next Generation Science Standards (NGSS) and project-based science. University of Vermont Noyce scholars will share examples of STEM projects aligned to the NGSS that they developed for their student teaching internship this spring.	
	4) The Three Books I Wish I'd Read in Ed School **Greg Banks, Urban Science Academy** In most education programs, educators are prepared for the classroom by teaching them up to prepare lessons aligned to state and national learning standards. Strong 'backwards design' planning starts with the strand to be learned by the student, develops the instrument to measure this learning, then works backwards to plan instructional activities that impart the learning to the student. While this is arguably one of the best ways to impart content, the model seems to fail to engage the vast majority of students (even those who succeed), with many students in urban districts leaving school with minimal academic skills or appetite for further learning. Critics of such failure argue that schools and teachers just need to work harder, that schools put too much effort into 'taking care of' students, and that teenagers lack a work ethic and are too narcissistic. Come to this session to learn of three books that challenge the notion that current society is too nice to kids and that teenagers are more self-absorbed. Together, these books put forth a vision of education focused on helping students develop a positive self-image alongside skills in inquiry, argumentation, and project-based learning.	

10:45 AM – 11:45 AM *Concurrent Sessions*	**5) Goldilocks & the Three Pigs: Teaching Students to Argue from Evidence in the Science Classroom** **Douglas Larkin, Montclair State University** In this session, participants will learn about and engage in the argumentation practices emphasized in Next Generation Science Standards. Using materials developed from the Modeling and Understanding in Science Education (MUSE) project, the focus of the session will be on fostering student discourse and sense-making practices.	Breakout Rooms, 2nd /3rd Floors
	6) A Longitudinal Analysis of Noyce Scholars' Professional Growth **Paul Bischoff, Paul French and John Schaumloffel, SUNY Oneonta** The purpose of this study was to investigate the professional growth trajectories of 12 Noyce Scholars who were successful in beginning full-time teaching careers in high-need school districts within a few months of completing their undergraduate degrees. Data used to investigate their professional growth trajectories were three essays written at two-year intervals. Each essay focused the writers on how they envision themselves as science teachers. The first essay was part of the scholar's application to the Noyce program. The second essay, written two years later, was a reflection on the first essay, and the third essay, written two years later while full-time teaching was a reflection on both the first and second essays together. Qualitative data analyses shows shifts in the frequency of professional growth categories. Specifically, there are marked shifts across the essays from shallow or naive views of teaching to more focused and experience-based understandings of the complexity of classroom science teaching in high-need schools. ***PI Focused Session***	
	7) Keynote Speaker Discussion **Marilyn Decker, Director of the Office of STEM at the Massachusetts Department of Elementary and Secondary Education (DESE)** Come to this follow-up session to Marilyn Decker's keynote address. Participants will meet Mrs. Decker and can discuss current topics related to STEM education in Massachusetts. Come prepared to ask questions and participate in a lively discussion!	
12:00 PM – 1:00 PM	**Lunch**	2nd Floor Grand Ballroom
1:00 PM – 2:00 PM *Concurrent Sessions*	**1) Effectively Using Mobile Technology in the Science Classroom** **Chris Widdall, SUNY Cortland** From simple writing tasks to the infusion of collecting and presenting student work, mobile technologies can bring the extra edge you have needed to keep today's 21st century student engaged. Come join this hands-on workshop where you will have the opportunity to see and use apps to supplement a lesson, engage students, design projects, collect data, and use app-in-app tools, while showcasing the power of science! The presentation will focus on the OS mobile platform, with infusion of Android and some cross platform apps.	Breakout Rooms, 2nd /3rd Floors
	2) Integrating Engineering in K-12 Classrooms **Maria Rivera Maulucci, Barnard College** This session will present strategies for integrating engineering design into existing science curricula through curricular adaptation and hosting a Family Engineering Night at the schools. Highlights will be shared from elementary and middle school classroom-based projects involving pre-service and in-service teacher teams.	

1:00 PM – 2:00 PM *Concurrent Sessions*	**3) CCSS 2 Go: Developing Mathematics APPS for In-and-Out of School Learning *(Bring Your Own Laptop)*** **Irina Lyublinskaya, College of Staten Island** Usually access to educational software for students is limited to the school computer lab. In contrast, practically every student has a personal tablet, smart phone and/or laptop. Learn how you can generate interactive apps for your students for different mobile platforms to explore mathematics concepts and practice skills outlined in CCSS. Please download a free trial version of the Geometry Expressions software from http://geometryexpressions.com/ prior to the workshop.	Breakout Rooms, 2nd /3rd Floors
	4) Factors That Influence the Climate for Learning **Behailu Mammo, Hofstra University** A growing body of research establishes that there is a positive, significant, relationship between students' self-efficacy beliefs and their academic performance. Because self-efficacy is specific to the task being attempted, high self-efficacy in one area may not coincide with high self-efficacy in another area. This presentation will discuss a research project that studies self-efficacy beliefs and other attributes that influence the climate for learning in high-need schools. Using well-known measurement tools, this study is focused on two classrooms taught by a full-time teacher who had been a Noyce fellow.	
	5) #NewVisions4Learning: Reimagining Academic Engagement with/through Twitter & Instagram **Jevon Hunter, Buffalo State College** During this workshop, attendees will learn how Twitter and Instagram were used as digital literacy tools that fostered and supported academic engagement and learning. Participants will then explore the application of these social networking sites in their own classrooms. Handouts and student sample work will be shared.	
	6) From Apprentice to Leader: A Scaffold Approach for Noyce Fellows' Professional Development **Cynthia Callard, Wendy Ferris, Michael Occhino, Denise Schultz, and Fayne Winter, University of Rochester** Noyce Fellows and the University of Rochester Project Director will share the experiences that supported them in developing and implementing high quality professional development in math and science. Using the Louckes-Horsley text as the backdrop, Noyce Fellows were engaged in a supported and scaffolded series of project experiences that took them from a PD apprenticeship, to leading study groups, to facilitating a significant (minimum 18 hours) professional learning institute with city school district participants.	
	7) Exploring Noyce Program Strategies That May Influence Retention of Teachers in Their Districts and the Profession **Abigail Jurist Levy, Jacqueline DeLifi, The Education Development Center (EDC)** EDC designs, implements, and evaluates programs to improve education, health, and economic opportunity worldwide. EDC is committed to education that builds knowledge and skill, makes possible a deeper understanding of the world, and engages learners as active, problem-solving participants. Come to this session to explore ways in which we can retain our Noyce Scholars in high-need districts. ***PI Focused Session***	

2:00 PM – 2:15 PM	**Break**	
2:15 PM – 3:15 PM *Keynote Address*	**Who's That Girl? The Role of Identity and Society in STEM Learning and Beyond** **Connie Chow** Equity in science education outcomes is a women's rights and a civil rights issue. Educators are the vanguards in this movement. As designers of inclusive learning experiences, teachers dissect and leverage personal and community motivation to increase participation. As mentors and guides, teachers engage and support students as whole persons, in relationship. As allies in girls' educational and life-long empowerment, educators examine and confront the social systems and personal biases that hold students back. Just as science itself is tackling big questions through interdisciplinary approaches, so must we embrace the complex humanity of those with whom we are sharing science, as well as our own. This talk will use stories, strategies and ideas to remind, inspire and challenge.  **Dr. Connie Chow** is a dedicated educator who has a long-term interest in humanistic science education and social justice. A molecular microbiologist by training, Connie received her Ph.D. through the program in Virology at Harvard University, and conducted her postdoctoral research on malaria gene expression at the Harvard School of Public Health. Dr. Connie Chow was the Science Club for Girl's first Executive Director from July 2006 to December 2014. Prior to that, she was an assistant professor in Biology at Simmons College, where she was co-principal investigator of "Technology at the Crossroads", a National Science Foundation-funded science and technology summer camp for middle school girls and boys in the Boston public schools. Dr. Chow is a leader-member of the Greater Boston Girls Coalition and the co-chair of the Leadership Council of the Southern New England Girls Collaborative Project, a regional arm of the National Science Foundation-funded National Girls Collaborative Project. She is a member of the Diversity Subcommittee of the MA STEM Advisory Council. She served on the City of Cambridge Blue Ribbon Commission on Middle School Youth and was the Youth Council co-chair of the MetroNorth Regional Employment Board. Connie was a member of the Steering Committee of Amnesty International USA's Women's Human Rights program for three years. Connie co-founded the Boston Area Girls STEM Collaborative in 2008. She co-founded the Massachusetts CEDAW Project in 2002, an action and research collaborative that seeks to implement international human rights principles, in local contexts. This project is currently housed at the Suffolk University Center for Womens' Health and Human Rights.	2nd Floor Grand Ballroom
3:15 PM – 4:30 PM	**Noyce Scholarship Poster Session** 3:15 PM – 3:45 PM *(odd numbered)* 3:45 PM – 4:15 PM *(even numbered)*	2nd Floor Salon IV
4:30 PM – 5:30 PM	**Science Club for Girls** This session will provide an opportunity for educators to listen and be in conversation with high school and early university students to design actions and commitments to increase equity in science education.	2nd Floor Grand Ballroom
5:30 PM –	**Dinner on Your Own**	

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Noyce Northeast Conference

Saturday, March 28, 2015

7:30 AM – 8:45 AM	**Continental Breakfast** **Collaborate!** Breakfast today will offer Noyce Scholars and Project Personnel to get to know each other by region. Please find the table with the sign indicating the state in which your project is located. The signs are also color-coded by region: **Blue** New York **Red** Connecticut Massachusetts Rhode Island **Yellow** Maine New Hampshire Vermont **Green** Delaware Maryland New Jersey Pennsylvania	2nd Floor Grand Ballroom
8:45 AM – 9:30 AM *Keynote Address*	**From *Brown v. Board* 1954 to Ferguson 2014: Why Have We Not Made More Progress?** **Richard Rothstein** Sixty years after *Brown*, schools remain segregated because the communities in which they are located are segregated. A yawning achievement gap remains. Ferguson, Missouri, where schools are 90 percent African American, is typical. Its explosion could have happened anywhere, and it will happen elsewhere. How did we get here? Can we do anything about it?  **Richard Rothstein** is a research associate of the Economic Policy Institute and senior fellow of the Chief Justice Earl Warren Institute on Law and Social Policy at the University of California (Berkeley) School of Law. His most influential books have been *Grading Education: Getting Accountability Right* and *Class and Schools: Using Social, Economic and Educational Reform to Close the Black-White Achievement Gap*. His recent work has focused on residential racial segregation and its impact on student achievement. Links to his numerous articles and reports on education and race can be found at http://www.epi.org/people/richard-rothstein/, and he can be contacted at riroth@epi.org.	2nd Floor Grand Ballroom
9:30 AM – 9:45 AM	**Break**	
9:45 AM – 10:45 AM *Concurrent Sessions*	**1) Teaching for the Boston Public Schools (BPS): A Presentation on Hiring by BPS Human Resources Personnel** **Krystal Cummings, Amanda Preston, Boston Public Schools** Noyce Scholars are welcome to attend this session with the Boston Public Schools. A general overview of working in Boston will be provided, including opportunities, leadership pathways, and innovative programs. Join us to ask questions and discuss opportunities in Boston!	Breakout Rooms, 2nd /3rd Floors

9:45 AM – 10:45 AM *Concurrent Sessions*	**2) Science Anywhere & Everywhere: No Wires Attached! Using Mobile Devices for Data Collection with Vernier Go Wireless** **Irina Lyublinskaya, College of Staten Island** Get excited about science all over again! With new Go Wireless probes from Vernier students can collect and analyze sensor data on mobile devices making every lab a collaborative and individual learning experience. Using free Graphical Analysis APP, lab group members collaboratively collect data from an experiment. Students can then share the data and use mobile devices to analyze an individual copy of the data. Come to this workshop to experience wireless data collection with your own device. Download free Graphical Analysis APP to your phone or tablet before you come.	Breakout Rooms, 2nd /3rd Floors
	3) Teaching Robotics in an Urban School **Luis Martínez, Boston Public Schools** This session will focus on explaining the different strategies currently being used at the English High School to teach Programming to 9th graders by the use of Robotics. Special focus will be given to explaining the classroom set up that has been found to work the best. The advantages and disadvantages of the different robots and equipment available will be reviewed. Finally, some of the students themselves will attend to showcase their successful projects.	
	4) The Ithaca College Skype Professional Learning Community (IC Skype PLC). New Teacher Support Through Semi-Personalized Collaborative Professional Development **Marty Alderman, Ithaca College** New teachers are often placed into their role of classroom teacher with little or no continuing support and few opportunities for collaboration. There are studies that identify such lack of support as one cause of attrition among teachers. The Robert Noyce scholarship program (and the PhysTEC Noyce Scholarship and others) have proven very effective at recruiting teachers and bringing them into promising teaching careers. The IC Skype PLC offers continuing support to new teachers from the STEM segment of our teacher education program through the first few years of their teaching careers. We meet every other week and provide semi-personalized professional development and a collaboration platform to help new teachers feel confident moving forward. This session will include: how to start an online PLC, a sampling of topics covered, anecdotal evidence of the value of the PLC, and consideration of challenges encountered. Attendees will be asked to 'brainstorm' ways to get new teachers to value professional development even during the stressful early years in the career.	
	5) Strategies for Teaching Science to ELLs **Armando Vierra, Brockton High School** The objective of this workshop is to (1) situate the teaching of science to English Language Learners (ELLs) within a framework capable of delivering both effective and efficient language and science instruction. Within this framework, we will (2) briefly discuss the approaches (i.e., theories/philosophies) pillar to teaching science to ELLs. Finally, we will (3) discuss, through Q&A, actual methodologies and techniques that are imperative to teaching science to ELLs. When situated within the WIDA (World-class Instructional Design and Assessment) framework, many features of the SIOP (Sheltered Instruction Observation Protocol) model offer a robust set of strategies proven to be successful in teaching science to ELLs. However, inquiry-based models (such as the 7E model) that emphasize activity before concept (ABC) should be incorporated into the SIOP model to make it a model capable of teaching the whole of science literacy. This merger has to occur in a manner that prevents the essential features of language instruction from being sacrificed. We will discuss strategies that allow SIOP and the 7E model to be incorporated into the WIDA framework to create lesson plans capable of delivering effective, efficient, and relevant language and science instruction to ELLs. Specifically, vocabulary teaching, science and classroom talk, graph organizers, sentence frames and meaningful inquiry-based activities.	

9:45 AM – 10:45 AM *Concurrent Sessions*	**6) Opening Doors to STEM Teaching with a Learning Assistant Program at the Community College** **Debra Poese, Jasmine Aviles Vega, Andrew Potocko, Carolyn Schick, Montgomery College** Learning Assistants (LAs) are recruited as support in a variety of STEM classrooms and laboratories, where they gain experience teaching and work with faculty mentors to enhance student engagement. In this community college model, students are also connected to LA programs and Noyce Scholar programs at partner four-year institutions. Come hear how the LAs, their faculty mentors, and the field of STEM education can all benefit from this collaboration. ***PI Focused Session***	Breakout Rooms, 2nd /3rd Floors
	7) Keynote Speaker Discussion **Richard Rothstein, University of California at Berkeley** Come to this follow-up session to Richard Rothstein's keynote address. Participants will have the opportunity to meet Rothstein and discuss topics from his latest book. Come prepared to ask questions and participate in a lively discussion!	
10:45 AM – 11:15 AM	**Break**	
11:15 AM – 12:00 PM *Plenary Session*	**Voices from the Field : First Year Teachers** **Facilitator: Dr. Lisa Gonsalves** **Participants:** • **Shirla-An Davis:** Math teacher at TechBoston Academy, Boston, MA *UMass Boston Noyce Scholar* • **Hayden Frederick-Clarke:** Math teacher at Charlestown High School, Boston, MA *UMass Boston Noyce Scholar* • **Rebecca Janeshefskie**: Math teacher at Nathan Bishop Middle School, Providence, RI *Millersville University Noyce Scholar* • **Peter Kovach:** Science teacher at King Middle School, Boston, MA *UMass Boston Noyce Scholar* • **James Louis:** Science teacher at TechBoston Academy, Boston, MA *UMass Boston Noyce Scholar* • **Kelsey O'Donnell:** Math teacher at Newark Valley High School, NY *SUNY Cortland Noyce Scholar*	2nd Floor Grand Ballroom
12:00 PM	**Closing Remarks** **Dr. Lisa Gonsalves, University of Massachusetts Boston**	2nd Floor Grand Ballroom
1:30 PM – 3:00 PM	**Optional Visit to MIT Museum** ***Sign-up at registration desk. Depart from lobby at 1:30 PM.***	1st Floor Lobby