LEADERSHIP IN SCIENCE EDUCATION:
RINGING THE BELL FOR EQUITY, FINDING COMMON GROUND,
AND BELIEVING IN EVERY CHILD’S FUTURE
Welcome to the 2018 NSELA Summer Leadership Institute

Leadership in Science Education: Ringing the Bell for Equity, Finding Common Ground, and Believing in Every Child’s Future

On behalf of the National Science Education Leadership Association (NSELA), I want to welcome you to historic Philadelphia! Through its annual SLI, NSELA connects and supports emerging and experienced leaders by providing a forum for high quality professional development, collegial networking, and access to the latest research and resources from researchers, practitioners and policy makers at the state and national levels.

We have a talented slate of speakers and facilitators to engage with us over the next few days. The 2018 SLI strands and the focus for our inquiry will be:

**Authentic Collaboration to Connect Mathematics and Science**
- Cathy Seeley, Author, Speaker, and Past President of the National Council of Teachers of Mathematics will facilitate sessions that emphasize the importance of collaboration between math and science leaders and the unique role math and science play in STEM education.

**Career Implications for Science Education**
- A variety of esteemed leaders will facilitate sessions that examine ways to make meaningful science connections across all disciplines.

**Computational Thinking/Computer Science**
- Okhee Lee, Professor of Childhood Education, along with Scott Grapin and Alison Haas from New York University Steinhardt, will facilitate sessions that demonstrate how to incorporate computational thinking into science learning for all students.

**Equity for Students in STEM**
- Okhee Lee and her colleagues will also facilitate sessions that integrate science and language learning for all students, including EL learners.

Jody Bintz, Associate Director for Strategic Partnerships and Professional Learning, BSCS will explore the resource NextGen TIME, a toolkit for instructional materials evaluation and implementation. Keynote Dr. Mark A. Pauley, Program Director, Division of Undergraduate Education, Directorate for Education and Human Resources, National Science Foundation will explain the importance of bioinformatics in understanding biological data. Keynote Rodger Bybee, Author and NGSS Writing Team Leader, will elaborate on the impact of STEM on the history of the United States.

Special thanks to the NSELA Professional Development Committee for the effort and dedication that went into planning this institute. Thanks also to our event sponsors, including ExploreLearning, Texas Instruments and Vernier. Please plan to attend our social event Monday evening to meet our sponsors and to enjoy an informal networking opportunity to connect and collaborate with colleagues from around the country.

Thank you for supporting NSELA in its mission to build strong connections amongst science leaders that advocate for public support of high-quality science education and improved science instruction and learning for all students. As you endeavor to be at the forefront of new developments in science education, please consider getting more involved with NSELA’s Board of Directors or committees. Once again, thank you for your commitment to science education and we look forward to seeing you next summer in Orlando, Florida!

Scientifically,

Dr. Missi Zender-Sakach
NSELA President, 2018-2019
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# Program at a Glance

**Monday, July 9, 2018**
- 7:00 am–5:00 pm: Conference Registration
- 7:30 am: Breakfast
- 8:30 am: Welcome & Introductions
- 9:15 am: Concurrent Sessions
- 12:15 pm: Lunch
- 1:15 pm: Concurrent Sessions
- 3:30 pm: Roundtable on Equity
- 4:45 pm: Wrap-up & Daily Evaluation
- 6:30 pm: Group Dinner

**Tuesday, July 10, 2018**
- 7:00 am–5:00 pm: Conference Registration
- 8:30 am: Breakfast
- 12:15 pm: Lunch
- 1:30 pm: **General Session II:** Need For and Ways of Collaborating Between Math and Science Leaders, and the Unique Role of Math and Science in STEM
- 3:00 pm: Break
- 3:15 pm: **General Session III:** Keynote: Rodger Bybee, "STEM Education Now More Than Ever"
- 4:15 pm: **General Session IV:** Making Sense of What We’ve Learned
- 4:45 pm: Wrap-up & Daily Evaluation
- 5:30 pm: VESELS Recipients Gathering

**Wednesday, July 11, 2018**
- 7:00 am–12:00 pm: Conference Registration
- 7:45 am: Breakfast
- 8:45 am: Concurrent Sessions
- 10:15 am: Break
- 10:30 am: Concurrent Sessions
- 12:00 pm: Wrap-up & Daily Evaluation
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Monday, July 9, 2018

7:00 am–5:00 pm: Conference Registration
FRANKLIN HALL FOYER

7:30 am–8:15 am: Breakfast
FRANKLIN HALL 1 & 2 M

8:30 am–9:00 am: Welcome, Introduction & Overview of the 2018 NSELA Summer Leadership Institute
FRANKLIN HALL 1 & 2 G

9:15–12:00 pm: Concurrent Sessions I

Session A: Integrating Science Learning and Computational Thinking with All Students Including English Learners
FRANKLIN HALL 4 C
Speakers: Alison Haas, New York University, Steinhardt; Scott Grapin, New York University, Steinhardt; Okhee Lee, Professor of Childhood Education, New York University, Steinhardt
The education system is rapidly changing due to three emerging forces: traditional minority groups are now the majority with English learners as the fastest growing population; standards in STEM are academically rigorous; and technological innovations are advancing quickly. This presentation will address integration of science and computational thinking with all students including English learners. First, the presentation will briefly describe science (NGSS) instructional shifts. Second, it will describe how to integrate science learning and language learning with all students including English learners. Finally, it will describe how to integrate science with computational thinking and modeling.

Session B: NextGen TIME: A Suite of Tools for Evaluating Curriculum Materials and Designing Curriculum-Based Professional Learning; Part 1
FRANKLIN HALL 3 C
Speaker: Jody Bintz, Associate Director for Strategic Partnerships & Professional Learning, BSCS
This full day session examines NextGen TIME, which is both a Toolkit for Instructional Materials Evaluation and a process for Transforming Implementation through Materials Evaluation. It is a set of tools and processes which allows districts and educators to analyze and select materials based on specified criteria and scoring guidance and to provide educators with a transformative professional learning experience highly focused on the NGSS and the implementation of high quality materials.

12:15 pm–1:00 pm: Lunch
FRANKLIN HALL 1 & 2 M

1:15 pm: Concurrent Sessions II

Session A: (ends at 3:15 pm) Science Education for All: Instructional Shifts to Promote Science and Language Learning
FRANKLIN HALL 4 C
Speaker: Okhee Lee, Professor of Childhood Education, New York University, Steinhardt
A Framework for K-12 Science Education (National Research Council, 2012) and the Next Generation Science Standards (NGSS) offer a vision of rigorous standards across K-12 classrooms. As these standards offer both learning opportunities and demands, educators must enact instructional shifts to achieve the vision. This session highlights how science instructional shifts, based on the vision of the NGSS, and language instructional shifts, based on contemporary thinking in second language acquisition, are mutually supportive in promoting both science and language learning for all students. Using examples from science curriculum materials and classroom instruction, the session will highlight what educators can do to ensure all students are supported in learning science while developing language. The session will conclude with how science education is connected to English language arts and English language education.

Session B: (ends at 4:45 pm) NextGen TIME: A Suite of Tools for Evaluating Curriculum Materials and Designing Curriculum-Based Professional Learning; Part 2
FRANKLIN HALL 3 C
Speaker: Jody Bintz, Associate Director for Strategic Partnerships & Professional Learning, BSCS

3:30 pm–4:30 pm: Roundtable on Equity (immediately following Okhee Lee’s session)
FRANKLIN HALL 4 D
Speaker: Larry Plank, STEM Supervisor, Hillsborough County Schools, Tampa, FL, NSELA Board Member
Round table discussion on equity. Questions and ideas from these conversations will be followed up on at Tuesday morning’s coffee with Okhee Lee, Professor of Childhood Education, New York University, Steinhardt.

4:45 pm–5:00 pm: Wrap-up and Daily Evaluation
FRANKLIN HALL 1 & 2 G

6:30 pm: Group Dinner at Maggiano’s Little Italy M (across from the Marriott)
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<tr>
<th>Time</th>
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<tr>
<td>7:00 am–5:00 pm</td>
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<td>Lunch &amp; Keynote: Bioinformatics - Mark A. Pauley, Ph.D., Program Director, Division of Undergraduate Education, Directorate for Education and Human Resources, National Science Foundation</td>
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<td>General Session IV – Making Sense of What We’ve Learned</td>
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Wednesday, July 11, 2018

7:00 am–12:00 pm: Conference Registration
FRANKLIN HALL FOYER

7:45 am–8:30 am: Breakfast
FRANKLIN HALL 4

8:45 am–10:15 am: Concurrent Sessions III

Session A: Considerations for Implementing a Local Comprehensive Assessment System (LCAS)
FRANKLIN HALL 13
Speakers: James Blake, K-12 Science Curriculum Specialist, Lincoln Public Schools; Grant Gardner, Assessment Services, Inc.; Jason Thomsen, Teacher & Department Chair, Lincoln Southwest High School; Deborah Tucker, Science Education Consultant
As leaders in science education, we are often charged with developing assessment systems for our school or district. What makes up a local comprehensive assessment system? What structures and processes best support an effective system? How do classroom-embedded assessment tasks that involve students’ using “physical stuff” fit in? This session provides resources and rationale to use as you introduce shifts in assessment called for by the NRC Framework, the NRC Developing Assessments for the Next Generation Science Standards, and the NGSS.
In addition to thinking about the system as a whole, you will engage in a classroom hands-on performance assessment task as you consider a variety of assessment strategies. Bring your expertise to share and learn from others what’s working in their districts.

Session B: Continued Conversations: How Can We Use STEM as an Opportunity for Collaborations Among Science Leaders and Math Leaders?
CONFERENCE ROOMS 407, 408 & 409
Speaker: Cathy Seeley, Author, Speaker, and Past President of the National Council of Teachers of Mathematics
Unique Role of Math and Science in STEM: Discussions about the STEM Position statement.

Session C: Science and Language Instruction and Assessment With All Students Including English Learners
FRANKLIN HALL 4
Speakers: Scott Grapin, New York University, Steinhardt; Alison Haas, New York University, Steinhardt; Okhee Lee, Professor of Childhood Education, New York University, Steinhardt
The Next Generation Science Standards (NGSS) are being implemented in the context of increasing student diversity in the nation. In particular, the NGSS present opportunities and demands for a rapidly growing population of English learners, who are learning science while developing proficiency in English. As science and language are integrally related and mutually supportive of each other, this session will address how to design science instruction that incorporates formative assessment of science and language with all students including English learners. After engaging in a science investigation, participants will assess student artifacts in terms of both science and language and consider how to use the assessment to inform instructional next steps.

10:15 am–10:30 am: Break

10:30 am–12:00 pm: Concurrent Sessions IV

Session A: “Burning Issues” Join us for an “Unconference”
FRANKLIN HALL 13
What are your burning issues? Come ready to network with colleagues! What questions do you have? What solutions have others found? Are there resources to support the work you doing? Your questions and interests drive the conversation in this interactive session.

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CONFERENCE ROOMS 407, 408 & 409
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12:00 pm–12:30 pm: Wrap-up and Daily Evaluation
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October 11–13, 2018
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November 29–December 1, 2018
Charlotte, NC

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April 10, 2019
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2019 NSELA Summer Leadership Institute
Orlando, FL

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