

# Iowa Science Standards

## 2016 Science Standards Immersion Institute

June 15, 2016

West Des Moines Valley High School

#iowascience

WiFi: wdmcs-guest

- 8:30-9:00 Registration
- 9:00-9:20 Welcome, Introductions – Staplin Performing Arts Center (PAC)
- 9:20-9:30 Transition Time to Large Break-out Rooms
- Green Ticket – Media Center
- Blue Ticket – PAC
- Yellow Ticket – Orchestra Room
- 9:30-12:00 Investigating Phenomenon through 3D Learning
- Unpacking: Analysis of 3D Science Lesson
- 12:15-1:30 Lunch and Informal Networking
- 1:30-3:30 Making Sense of the Iowa Science Standards
- Examining Grade Level Performance Expectations
- 3:30-3:45 Closing and Next Steps

Complete the Survey - <http://bit.ly/28klomL>

Resources:

<https://iowacore.gov/iowa-core/subject/science>

<https://iowacore.gov/content/science-resources>



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## Institute Facilitators – Elementary



**Carla Zembal-Saul** is professor of science education, co-director of elementary teacher education, and Kahn Professor of STEM Education at Penn State University. She is a former middle school science teacher whose research and practice have focused on elementary teacher learning and development as it relates to supporting children's scientific discourse and practices for constructing evidence-based explanations. Zembal-Saul is committed to school-university partnership work, and several of her funded projects have involved digital tools for engaging teachers in video analysis of practice to scaffold their learning. She is the co-author of *What's Your Evidence? Engaging K-5 Students in Constructing Explanations in Science (2013)*, and was recognized with the NSTA Fellow Award in 2015. She earned a B.S. and Ph.D. from University of Michigan, and an M.Ed. from University of Houston.



**Leigh Ann Haefner** is an associate professor of science education and Co-Director of the Childhood and Early Adolescent Education program at Penn State. Her current research examines the use of science talk to support young learner's sense making in science, and the ways in which teachers integrate science and engineering in the classroom. Leigh Ann is a former middle and high school science teacher who taught biology and general science to grades 7-11.



**Alicia M. McDyre** is an assistant professor at Penn State University, whose responsibilities include teaching Elementary Science Method's courses in residence and in the Professional Development School setting, and managing the Childhood and Early Adolescent Education program. Alicia's research focuses on young girls, identity work, science instruction, and communities of learners. Before coming to Penn State to pursue her doctoral degree, Alicia taught middle school science for ten years.



## Institute Facilitators – Elementary



**Brian J. Reiser** is professor of learning sciences at Northwestern University. Dr. Reiser's research examines how to make the scientific practices of argumentation, explanation, and modeling meaningful and effective for classroom teachers and students. Dr. Reiser is a member of the National Research Council's Board on Science Education. He has served on the NRC committees authoring the reports *A Framework for K-12 Science Education*, which guided the development of the Next Generation Science Standards (NGSS), *Developing Assessments for the Next Generation Science Standards*, and *Guide to Implementing the Next Generation Science*

*Standards*. Dr. Reiser has also worked with Achieve on tools to help states implement NGSS. Dr. Reiser is currently collaborating with several state initiatives to design and provide professional development and develop curriculum materials for K-12 teachers to support them in realizing the reforms in NGSS in their classrooms. Dr. Reiser earned his Ph.D. in cognitive science from Yale University.



**Patty Whitehouse** has been in the field of education for over 25 years, and currently teaches science and engineering to 1st- through 4th-grade students at Goudy Technology Academy in Chicago, Illinois. She holds Masters Degrees in Administration and Education. During the course of her teaching career, Patty has provided PD for FOSS, STC, and NGSS. Most recently, Patty partnered with NGSX to train teachers and administrators in Chicago Public Schools. She is the author of over 100 books introducing science and engineering to elementary school readers.



**Mike Fumagalli** is a high school life science teacher and is the recipient of the 2013-2014 Illinois Science Teachers Association Exxon/Mobil Outstanding Teacher of the Year award and is a 2015 Presidential Award finalist. Mike was selected as one of 16 Illinois high school teachers charged with developing 3-dimensional middle and high school units aligned to the NGSS and is one of seven EQUiP Rubric-science national trainers. Mike has presented at state and national conferences on the implementation of NGSS and on the development of high quality instructional materials and educators.

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**Michael Novak** is a 2014 Golden Apple Fellow and National Board Certified teacher, who has taught science, mathematics, and social science in grades 6-8 for over 18 years. He also teaches courses in new approaches to learning and teaching and the high school science methods course in the School of Education and Social Policy at Northwestern University. He has authored instructional units and computational models for high school science classrooms through the Center for Connected Learning at Northwestern

University for the past 10 years, and has worked with partnerships in multiple states to develop NGSS-aligned storyline based curriculum materials. Novak is also a facilitator and member of the design team for the Next Generation Science Exemplar System for Professional Development (NGSX), a web-based professional development system designed to help educators grow in their understanding of three-dimensional learning.



**Mike Fumagalli** is a high school life science teacher and is the recipient of the 2013-2014 Illinois Science Teachers Association Exxon/Mobil Outstanding Teacher of the Year award and is a 2015 Presidential Award finalist. Mike was selected as one of 16 Illinois high school teachers charged with developing 3-dimensional middle and high school units aligned to the NGSS and is one of seven EQiP Rubric-science national trainers. Mike has presented at state and national conferences on the implementation of NGSS and on the development of high quality instructional materials and educators. In addition to his NGSS work, Mike worked with WestEd and the University of Illinois-Chicago on a

disciplinary literacy where he piloted and revised curriculum while evaluating students' ability to obtain evidence from text and engage in argumentation.

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## Institute Facilitators



**Tricia Shelton** is a High Science Teacher and Teacher Leader with a BS in Biology and MA in Teaching, who has worked for 20 years in Kentucky driven by a passion to help students develop critical and creative thinking skills. Tricia is a 2014 NSTA Distinguished Teaching Award winner for her contributions to and demonstrated excellence in Science Teaching. As a Professional Learning Facilitator and NGSS Implementation Team Leader, Tricia has worked with educators across the United States to develop Best Practices in the Science and Engineering classroom through conference presentations, webinars, coordinating and co-moderating #NGSSchat on Twitter, and virtual and face to face PLC work. Tricia's current Professional Learning Facilitation includes work around the Next Generation Science Standards and helping STEM students develop the 21st Century Skills of critical and creative thinking, collaboration and communication (including Social media and Video) and Project-Based Learning. Tricia serves on the NGSS@NSTA Advisory Board and works as a NSTA *Discover the NGSS* Trainer and NGSS EQiP Rubric National Trainer for Achieve.



**Michael Novak** is a 2014 Golden Apple Fellow and National Board Certified teacher, who has taught science, mathematics, and social science in grades 6-8 for over 18 years. He also teaches courses in new approaches to learning and teaching and the high school science methods course in the School of Education and Social Policy at Northwestern University. He has authored instructional units and computational models for high school science classrooms through the Center for Connected Learning at Northwestern University for the past 10 years, and has worked with partnerships in multiple states to develop NGSS-aligned storyline based curriculum materials. Novak is also a facilitator and member of the design team for the Next Generation Science Exemplar System for Professional Development (NGSX), a web-based professional development system designed to help educators grow in their understanding of three-dimensional learning.

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