



Illinois State Board of Education

Gery J. Chico, Chairman

Dr. Christopher Koch, State Superintendent

ILLINOIS MATHEMATICS AND SCIENCE PARTNERSHIPS I-STEM NETWORK RFP WEBINAR

SEPTEMBER 24, 2014

Key Contributors:

Tara Bell, ISBE Principal Consultant

April Fogarty-Underwood, ISBE Principal Consultant

Dora Welker, ISBE Division Administrator

Amy Jo Clemens, ISBE Assistant Superintendent

Dr. Brian Reiser, NGSX

Aubrey Neihaus, Intel Math

IMSP I-STEM NETWORK

Agenda

- Federal Requirements
- Purpose, Vision and Goals
- Grant Award and Period
- Eligible Applicants
- Deliverables
- Tentative Timeline
- Submission Requirements
- NGSX, Intel Math and ISBE Model Curriculum
- Contact Information
- Questions

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Federal Requirements

- Legislation: <http://www2.ed.gov/policy/elsec/leg/esea02/pg26.html#sec2201>
- Formula grant to ISBE to enable ISBE to award subgrants, on a ***competitive*** basis, to eligible partnerships to carry out the authorized activities outlined in the federal legislation.
- Research-based professional development designed to promote content and pedagogical knowledge for K-12 math and science teachers.
- Comprehensive Needs Assessment
- Use of scientifically-based research, data and assessment
- Equitable Participation of Private Schools
- Annual Performance Report (APR)
- Access to mathematicians, scientists and engineers, sophisticated equipment and resources.

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MSP DEFINITIONS

■ **Summer Workshops**

- By definition, summer workshop requirements include professional development activities that are conducted for a period of not less than two weeks and consist of a minimum of 80 hours; and include, as a component, a program that provides direct interaction between classroom teachers and university faculty.

■ **Institute Dates**

- Also by definition, institute dates are intended to be follow-up trainings during the academic year for a period of not less than four (4) consecutive or nonconsecutive days and a minimum of four (4) hours in duration. If the follow-up training is for teachers in rural school districts, the follow-up training may be conducted through distance learning.

*One (1) or more of the institute days can be used to participate in the annual IMSP I-STEM Network Conference described below in Deliverable 5.

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Vision

The I-STEM Network will be designed to provide regional support to teachers in order to improve student achievement in the STEM disciplines.



IMSP I-STEM NETWORK

Purpose

The purpose of this RFP is to identify a Lead Partnership for the IMSP I-STEM Network Program. The I-STEM Network will function to provide equitable access to high-quality professional development and resources for Illinois K-12 math and science teachers.

The I-STEM Network Program will be implemented in two (2) stages:

- In stage one (1), ISBE is releasing this RFP for the purpose of funding a single eligible partnership to be the IMSP I-STEM Network Lead Partnership; and
- In stage two (2), an RFP will be released to fund multiple I-STEM Regional Partnerships to join the I-STEM Network. These Regional Partnerships will provide professional development through a Regional Workshop Institute Program (R-WIP) model utilizing math and science resources coordinated by the Lead Partnership.

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Goals

1. Improve student performance in math and science through professional development and resource development for K-12 teachers;
2. Develop classroom culture with learning opportunities for students and teachers by including high-quality research-based instructional materials such as ISBE Model Curriculum for Math and Science as well as others and providing support for the New ILS and Framework for K-12 Science Education;
3. Manage the I-STEM Network comprised of several R-WIPs consisting of at least 1 (one) math and one (1) science partnership per area except Area I and Chicago Public Schools (CPS) which can have 2 (two) math and 2 (two) science partnerships per area due to size of population (see RFP Appendix G for an Area map). The R-WIPs must support teacher's understanding of high-quality math and science instruction incorporating the New ILS; give teachers access to mathematicians, scientists, and engineers (along with their technologies and resources) in order to help them develop their individual knowledge, skills, and resources; and help high-need LEAs prepare their students to be positioned to be college- and career-ready in an innovative and globally competitive society;

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Goals Continued

4. Promote strong teaching skills by increasing instructors' understanding and application of scientifically-based educational research appropriate to math and science teaching and learning; and
5. Build the capacity of math and science teacher leaders within a regional statewide context; assist IHE teacher education faculty and pre-service teaching candidates in understanding the vision and instructional shifts outlined in the New ILS and Framework for K-12 Science Education.

**These goals form the basis for the deliverables of the IMSP I-STEM Network Lead Partnership Program that the successful applicant will be expected to implement.*

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Grant Award

The Lead Partnership must include*:

- An engineering, mathematics, or science department of an institution of higher education (IHE);
- A high-need local education agency (LEA);
- A Regional Office of Education (ROE)/Intermediate Service Center (ISC);
- A business/industry/nonprofit (BIN) or for-profit organization with demonstrated effectiveness in improving the quality of mathematics and science teachers.

*This is a minimum requirement. The proposed Lead Partnership may include multiple IHEs including schools of education, additional LEAs to comprise the entire K-12 spectrum in science and math, and additional BIN or for-profit organizations.

- Federal legislation allows the state to designate which entity will serve as the fiscal agent. For the I-STEM Network Lead Partnership, the ROE/ISC from the funded eligible partnership will be named the fiscal agent. A complete description of the composition of the Lead Partnership and responsibilities of each entity is in the “Program Specifications” section of this RFP.
- Priority points will be awarded to partnerships comprised of entities with demonstrated success in leadership of current or previous IMSP Projects or management of a statewide network or grant. (See Appendix H for scoring rubric.)

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Grant Amount

The anticipated grant to be awarded to a single grantee in each year of the grant period is \$1 million (\$3 million total over a three-year period).

Grant Period

The initial grant period will begin no earlier than November 3, 2014, and will extend from the execution date of the grant agreement until September 30, 2015. Funding will be available via continuing application for two additional fiscal years (i.e., FY 2016 {October 1, 2015 through September 30, 2016} and FY 2017 {October 1, 2016 through September 30, 2017}) contingent upon a sufficient appropriation for the program and satisfactory progress of the grantee in the preceding grant period.

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Deliverables

Each of the required deliverables is more fully explained in the **Program Deliverables** section of the RFP.

- Deliverable 1: Provide leadership and management for the statewide I-STEM Network and establish one (1) I-STEM Network Partnership
- Deliverable 2: Area Teacher Leaders (ATL)
- Deliverable 3: Development of IMSP I-STEM Network Resources
- Deliverable 4: Planning, Development, and Delivery of High-quality Professional Development
- Deliverable 5: Evaluation and Accountability Plan, and Reporting Requirements
- Deliverable 6: IMSP I-STEM Network Conference

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DELIVERABLE 1: PROVIDE LEADERSHIP AND MANAGEMENT FOR THE STATEWIDE I-STEM NETWORK AND ESTABLISH ONE (1) I-STEM NETWORK PARTNERSHIP (APPENDIX A)

Deliverable 1:

The IMSP I-STEM Network Lead Partnership provides leadership and management responsibilities that includes, but is not limited to, the following:

- I-STEM Network Lead Partnership: Develop a highly-effective, balanced partnership;
- I-STEM Network Experts: Mathematics and science activities will be facilitated by experts selected in collaboration between the funded Lead Partnership and ISBE IMSP staff;
- I-STEM Network Steering Committee: This committee will be appointed in collaboration between the funded Lead Partnership and ISBE IMSP staff. It will consist of representatives from a variety of stakeholder groups;
- I-STEM Network Capacity-Building: Organize and support the production and/or identification of the I-STEM Network capacity-building resources described in deliverables;

PROVIDE LEADERSHIP AND MANAGEMENT FOR THE STATEWIDE I-STEM NETWORK AND ESTABLISH ONE (1) I-STEM NETWORK PARTNERSHIP (APPENDIX A)

Deliverable 1 Continued

- I-STEM Network Fiscal Agent: Management of federal funds for the Lead Partnership and budget oversight for R-WIPS (http://www.isbe.net/funding/pdf/fiscal_procedure_handbk.pdf);
- Collaboration with ISBE IMSP Staff: The I-STEM Network Lead Partnership will fully collaborate with ISBE;
- I-STEM Network Website: An I-STEM Network website with social media components will be established and maintained throughout the duration of grant funding; and
- Promote Publishing/Presentation: The Lead Partnership will promote sharing of research/resources.

STEERING COMMITTEE

Steering Committee Membership (13 members):

- ISBE IMSP Staff, Tara Bell & April Fogarty-Underwood (co-chairs)
- I-STEM Network Administrator (co-chair)
- Dr. Brian Reiser, NGSX PI
- Aubrey Neihaus, Intel Math Project Manager
- Two (2) IHE representatives (1 math and 1 science)
- One (1) High-need LEA
- One (1) ROE/ISC
- One (1) BIN or for-profit organization
- Two (2) ATL Members (1 representing math and 1 representing science)
- One (1) Evaluator

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DELIVERABLE 2: AREA TEACHER LEADERS (ATL) (APPENDIX B & G)

Deliverable 2:

This RFP requires the Lead Partnership to recruit and establish a cohort of geographically equitable K-12 Area Teacher Leaders known as the ATL.

- The ATL will be a group of at least 18 experienced math and science educators from across the state that will be trained to co-facilitate professional development and supportive services in the R-WIPs in their Area;
- One (1) ATL for math and one (1) ATL for science are required for each Area. However, in Area I and Chicago Public Schools (CPS), two (2) ATL for math and (2) ATL for science can be recruited due to size of population.
- The ATL will undergo specialized training during the 2014-2015 academic year (Spring Semester) which will consist of professional development in science and math content, ISBE Model Math Curriculum, and ISBE Model Science Curriculum, as well as facilitation skills.
- The Lead Partnership will work collaboratively with ISBE and the Steering Committee to design and deliver professional development for the ATL in the Area Teacher Leaders Academy and Cohort I in the R-WIPs.

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DELIVERABLE 2: AREA TEACHER LEADERS (ATL) (APPENDIX B & G)

Deliverable 2: Continued

- Beginning in summer 2015, the ATL will co-facilitate the R-WIP attended by Cohort I (the first groups of K-12 teacher participants)
- A plan for recruitment of ATL should be present in proposal (not names of proposed ATL).

AREA TEACHER LEADERS (ATL)



| I-STEM Area | # of K-12 Science Area Teacher Leaders | # of K-12 Math Area Teacher Leaders |
|--------------|--|-------------------------------------|
| I | 2 | 2 |
| II | 1 | 1 |
| III | 1 | 1 |
| IV | 1 | 1 |
| V | 1 | 1 |
| VI | 1 | 1 |
| CPS | 2 | 2 |
| Total | 9 | 9 |

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DELIVERABLE 3: DEVELOPMENT OF IMSP I-STEM NETWORK RESOURCES

Deliverable 3:

High-quality instructional materials are an important key to providing support to K-12 math and science teachers as they work toward preparing their students for college and career readiness. An important component of the I-STEM Network will be utilizing state and national instructional materials for math and science. These resources include, but are not limited to:

- **ISBE K-8 Mathematics/High School Integrated Mathematics 1, 2 and 3 Model Curriculum**
 - ISBE has led the process for development of K-8 and high school Integrated Model Math Curriculum to aid school districts and teachers in implementing the New ILS. Currently, this model is being piloted by several teachers across the state in order to design and refine the model units and lessons. The following link provides additional information about the development of the ISBE Curriculum Models. Please contact Diane Beedy dibeedy@isbe.net or visit http://www.isbe.net/common_core/htmls/math-models.htm

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DELIVERABLE 3: DEVELOPMENT OF IMSP I-STEM NETWORK RESOURCES

Deliverable 3: Continued

■ **ISBE K-12 Model Science Curriculum**

- ISBE has led the process for development of a Model Science Curriculum Project for grades 6-12 to aid school districts and teachers in implementing the New ILS. Currently, the grade 6-12 science team is working on curriculum development led by national experts Dr. Joe Krajcik, Dr. Brian Reiser, and Michael Novak. The I-STEM Network Lead Partnership will work collaboratively with ISBE and these experts in utilizing these resources.-Please contact Diane Beedy dibeedy@isbe.net for more information about these materials.

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DELIVERABLE 4: PLANNING, DEVELOPMENT, AND DELIVERY OF HIGH-QUALITY PROFESSIONAL DEVELOPMENT (APPENDIX D AND APPENDIX E)

Deliverable 4:

The I-STEM Network Lead Partnership will design and deliver high-quality capacity-building professional development activities designed to improve student achievement for K-12 math and science students enabling them to be better prepared for college and careers.

- **Next Generation Science Exemplar System for Professional Development (NGSX)**
 - NGSX is a high-quality, content-rich professional development experience originally funded by the National Science Foundation.
 - Featured component for professional development in science for the I-STEM Network.
 - Designed to engage educators in implementing three dimensional learning as described in the *Framework for K-12 Science Education* .

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DELIVERABLE 4: PLANNING, DEVELOPMENT, AND DELIVERY OF HIGH-QUALITY PROFESSIONAL DEVELOPMENT (APPENDIX D AND APPENDIX E)

Deliverable 4: Continued

■ **Intel® Math**

- Intel® Math is a high-quality content-rich professional development course originally funded by the National Science Foundation.
- Intel® Math is an 80-hour professional development course focused on developing teachers' understanding of K–8 mathematics and deepening core concepts.
- Course is co-facilitated by a practicing mathematician and a mathematics educator.
- Aubrey must approve ATL and will coordinate trainers for the ATL Academy.

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DELIVERABLE 5: EVALUATION AND ACCOUNTABILITY PLAN, AND REPORTING REQUIREMENTS (APPENDIX E)

Deliverable 5:

The external evaluator selected must be qualified to conduct a program evaluation that includes the following:

- A rigorous evaluation as described in the Abt Associates' "A Guide for Reporting on Rigorous Evaluations for the U.S. Department of Education Mathematics and Science Partnerships (MSP)", which can be found at http://www.edmsp.net/public_documents/document/resource/Guide%20for%20Reporting%20on%20MSP%20Evaluations.pdf);
- Meets deadlines for state and federal reporting; and
- Provides technical support to the I-STEM Network and R-WIP participants for data collection and reporting.

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DELIVERABLE 6: IMSP I-STEM NETWORK CONFERENCE

Deliverable 6

- The IMSP I-STEM Network Lead Partnership will coordinate an annual statewide conference for math and science.
- The purpose of this conference is to share work from the R-WIPs, statewide I-STEM Network, as well as national, state, and local resources designed to assist with implementation of the New ILS.
- State and national leaders in math and science education, educational theory, and other experts should be part of the conference, as well as participants in the I-STEM Network and R-WIPs.
- The funded Lead Partnership, in collaboration with ISBE, will identify one person to Chair the Committee to coordinate the I-STEM Network Annual Conference (do not name individuals in proposal but suggest methods for recruitment);
- The date and location for the conference will be collaboratively established by ISBE, the Lead Partnership, and R-WIPs.
- Identifying funding for continuing the I-STEM Network Conference beyond the life of the grant is a priority for the Lead Partnership, as well as the Conference Committee Chair.

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OVERVIEW OF I-STEM NETWORK DELIVERABLES

| Federal Fiscal Year | Fall--May Milestones | June-September Milestones |
|---|---|---|
| <p>FY 2015</p> <p>Fall 2014 — September 30, 2015</p> | <ul style="list-style-type: none"> • Develop Network Infrastructure ➤ Establish a Steering Committee ➤ Select I-STEM Network Administrator • Recruit and train ATL <ul style="list-style-type: none"> ➤ Science: NGSX ➤ Math: Intel® Math ➤ All: Facilitator and Presenter Training • Plan Summer I Institute with R-WIPs • Assist in recruitment of Cohort I (Teacher Participants) in R-WIPs • Plan the R-WIP Institutes • Plan & Deliver Statewide STEM Conference | <ul style="list-style-type: none"> • Deliver Summer I Workshops for R-WIPs including at least 80 hours of Professional Development <ul style="list-style-type: none"> ➤ Cohort I Teachers are participants ➤ ATL are co-facilitators ➤ Science content: NGSX and Model Science Curriculum ➤ Math content: Intel® Math and Model Math Curriculum |

FY 2015

IMSP I-STEM NETWORK

OVERVIEW OF I-STEM NETWORK DELIVERABLES

| Federal Fiscal Year | Fall--May Milestones | June-September Milestones |
|--|--|--|
| <p>FY 2016</p> <p>October 1, 2015 – September 30, 2016</p> | <ul style="list-style-type: none"> • Deliver Network Institutes (R-WIPs) <ul style="list-style-type: none"> ➤ Four (4) follow-up workshops ➤ Implement ISBE Model Curriculum for Math & Science ➤ Include additional content training for math and science, as needed. ➤ Cohort I Teachers are participants/piloting curriculum ➤ ATL: Co-facilitators • Plan Summer II Workshops for R-WIPs • Plan & Deliver Statewide STEM Conference | <ul style="list-style-type: none"> • Deliver Summer II Workshops for R-WIPs including at least 80 hours of Professional Development <ul style="list-style-type: none"> ➤ Cohort I Teachers are participants ➤ ATL are co-facilitators ➤ Science content: NGSX and Model Science Curriculum ➤ Math content: Intel® Math and Model Math Curriculum |

FY 2016

IMSP I-STEM NETWORK

OVERVIEW OF I-STEM NETWORK DELIVERABLES

| Federal Fiscal Year | Fall--May Milestones | June-September Milestones |
|--|--|--|
| <p>FY 2017</p> <p>October 1, 2016 – September 30, 2017</p> | <ul style="list-style-type: none"> ● Deliver R-WIP Institutes <ul style="list-style-type: none"> ➤ Four (4) follow-up institutes ➤ Implement ISBE Model Curriculum for Math & Science ➤ Cohort Teachers are participants/piloting curriculum ➤ ATL: Co-facilitators ● Plan Summer III R-WIP Workshops ● Plan & Deliver Statewide STEM Conference | <ul style="list-style-type: none"> ● Deliver Summer III Workshops for R-WIPs, including at least 80 hours of Professional Development |

FY 2017

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Timeline

- ✓ **November 3, 2014**
 - **Submission deadline for Lead Partnership RFP**
 - **Lead Partnership Commitment/Certs and Assurances submitted as part of proposal**

- ✓ **November 2014 (tbd)**
 - ***Tentative* date for R-WIP RFP released**

- ✓ **January 2015 (tbd)**
 - ***Tentative* awarding date for Lead Partnership RFP**

- ✓ **January 2015 (tbd)**
 - ***Tentative* date for Lead Partnership and ISBE to name I-STEM Network Administrator**

- ✓ **December 2014/January 2015 (tbd)**
 - ***Tentative* submission deadline for R-WIP RFP**

- ✓ **January/February 2015 (tbd)**
 - ***Tentative* R-WIP awarding date**

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Required for Successful Submission (11/3/14 by 5:00pm CST):

- Narrative
- Attachments 1-13
 - Commitment Form, Attachment 2 sections apply to specific entity addressed
 - Program-Specific Terms, Appendix 6
 - Equitable Participation, Attachment 12 and GEPA, Attachment 13 is completed by High-Need LEA
 - Business/Industry/Nonprofit Entity must complete Certs and Assurances, Attachments 7-10 if they receive any funds from IMSP I-STEM Network Program
- Any necessary appendices
- Submit as described in Proposal Format Section
- Original plus two copies and an electronic copy on CD or USB
- Budget Summary, Attachment 4
- Budget Narrative, Attachment 5
- FY 15 Required on ISBE Forms
- Proposal may include FY15 and FY16 on Spreadsheet or Word Document (for planning purposes)
- IMSP Benefits Worksheet (recommended not required) (upon request)

*State and Federal Grant Administration Policy, Fiscal Requirements and Procedures Handbook:
http://www.isbe.net/funding/pdf/fiscal_procedure_handbk.pdf

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Further Explanation:

ISBE MATHEMATICS MODEL CURRICULUM

http://www.isbe.net/common_core/htmls/math-models.htm

NGSX

<http://ngsx.org/>

INTEL MATH

<http://math.arizona.edu/~ime/intelmath/>

ISBE MATHEMATICS MODEL CURRICULUM

- Public Act 97-704
- Each middle school grade level and high school course contains a sequence of units
- Designed to address all standards for that level in a cohesive manner.
- The initial phase had a deadline of March 1, 2013
- The curricular units were designed in accordance with
 - PARCC Model Content Frameworks PARCC
 - CCSSM materials

ISBE MATHEMATICS MODEL CURRICULUM

ISBE expanded the Math Model Curriculum to include

- Scope-and-sequences and units for grades K-5
- Assessments, model lessons, and lesson documents for grades K-8 and Integrated Math 1, 2 and 3 high school courses
- All materials are updated as new information is released by PARCC

ISBE MATHEMATICS MODEL CURRICULUM

Assessments and Lessons

- Scope and Sequence
- Unit Map
- Assessments Lesson Map
- Looking for Balanced Assessment
 - Formative
 - Summative
 - Self assessment
 - Lessons Tab
 - Most have one multi-day lesson
 - Very few have multiple multi-day lessons
- Lessons (One multi-day lesson per unit)

ISBE MATHEMATICS MODEL CURRICULUM

Review Process

1. Development
2. Peer Review
3. Revision based upon Peer Review
4. External Review
5. Revision based upon External Review
6. Pilot Districts
7. Collecting student work – 3 levels
8. ISBE Approval
9. Made public on ISBE website
10. Revisions based upon Pilot feedback

NGSX: CYBER-ENABLED SUPPORT FOR TEACHER INVESTIGATION OF THE SHIFTS IN CLASSROOM TEACHING REQUIRED BY NGSS

Brian J. Reiser, *Northwestern University*

Sarah Michaels, *Clark University*

Jean Moon, *Tidemark Institute*

Cindy Passmore, *U. of Calif, Davis*

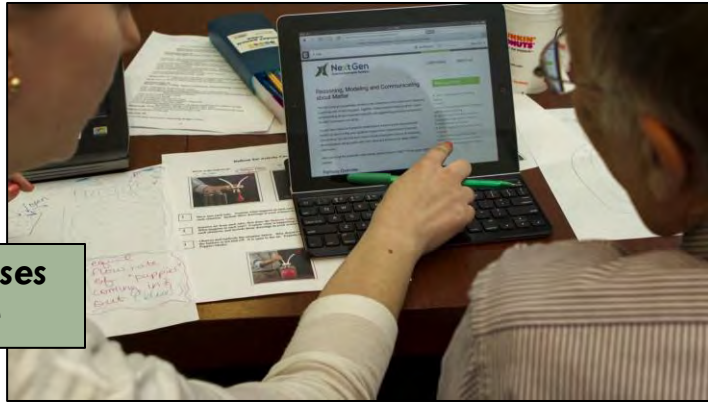


I-STEM Webinar, Sept 24, 2014

NGSX PD approach

- Ground teachers' learning of the **science**, **student thinking** about science, and **pedagogical support** of students around a common subject matter challenge.
- Analyze cases of classroom learning
 - ▣ How do **students** engage in science practices to build the explanatory idea, piece by piece, over time?
 - ▣ How do **teachers** support practices to build these ideas?
 - ▣ How do the **tasks** situate students' engagement in practices in making sense of phenomena?

Teacher study group blended learning model



NGSX poses challenge



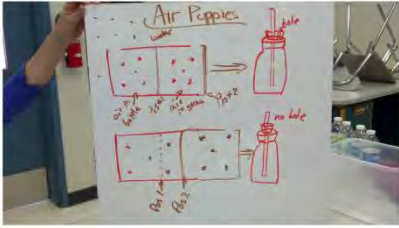
Teachers work together as science learners



Teachers analyze classroom cases


Lori McClanahan
North Olympic Peninsula Study Group
 Oct 14, 2013
 08:56pm PDT

Laura, Susan, Sandi
 The wall is the water, and with a hole in the stopper more puppies can enter and push on the water from that side, allowing the wall to move toward the drinker.



Teachers post work online

Unit 4 | How Do I Build a Classroom Culture that Supports Public Reasoning?

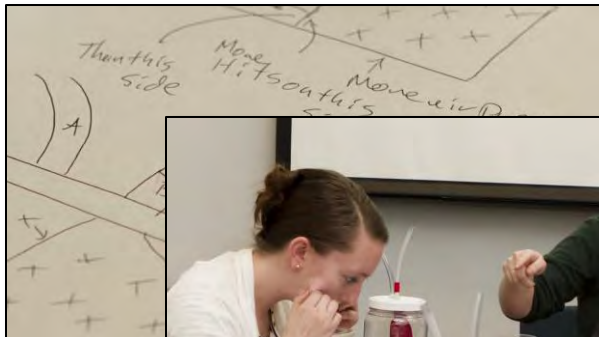


Embedded expert guidance

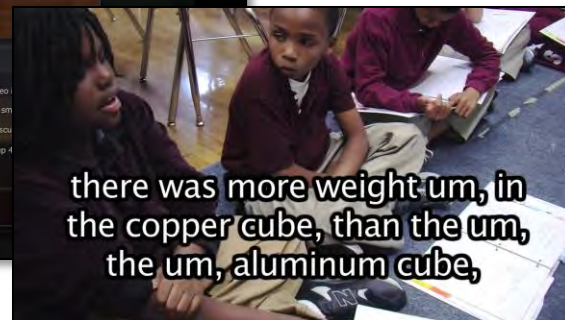


NGSX-trained facilitator

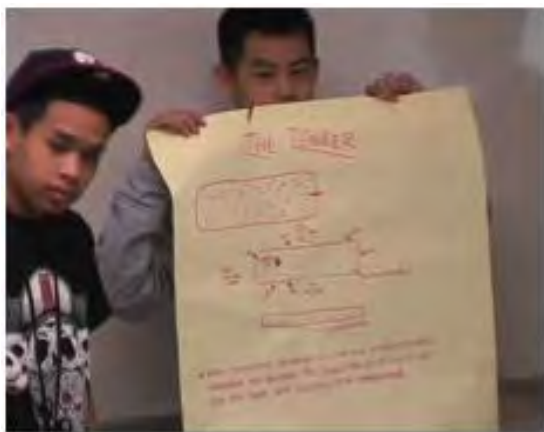
The modeling matter pathway



Units 1-3: Developing and using models to explain phenomena



Unit 4: Building a discourse community to support modeling

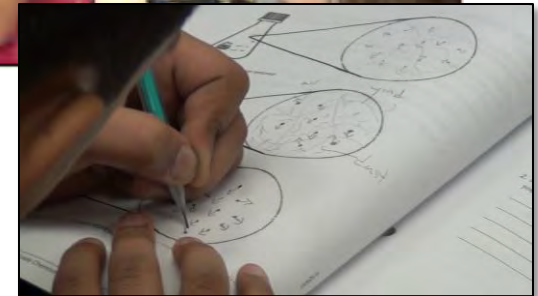
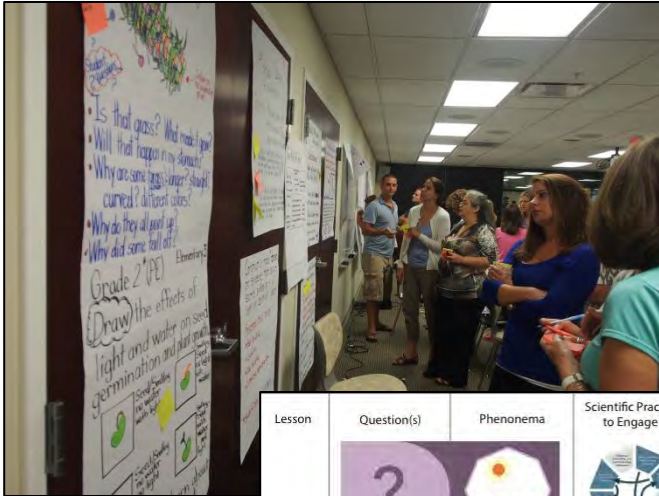






Unit 5: High school case of developing and refining models over time



Unit 6: Middle school case of argumentation to develop particle model

The modeling matter pathway (units to be developed for IL MSP)



| Lesson | Question(s) | Phenomena | Scientific Practice(s) to Engage In | What We Figure Out |
|--------|---|---|---|---|
| |  |  |  |  |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

Units 7-8: Designing Classroom Units that Reflect NGSS

Classroom video cases to support enactment of ISBE model science curriculum units

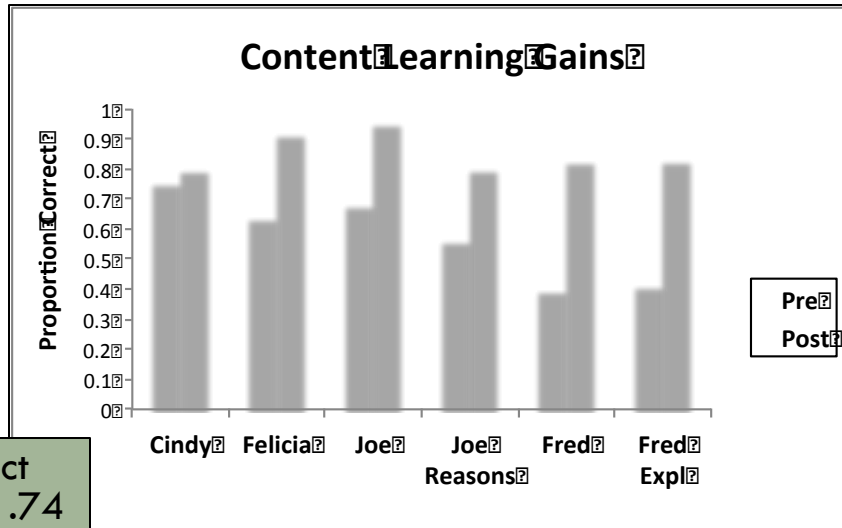
National Usage of NGSX

- 2013 NSF pilot with 200 teachers in 9 states
- 2014 partnerships with state/district department of education funding
 - ▣ Vermont, Connecticut, Denver

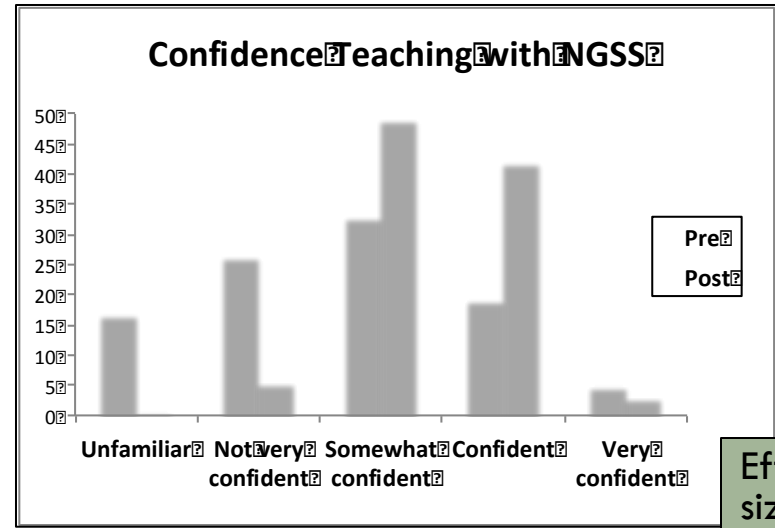


- To date, 350 teachers nationally

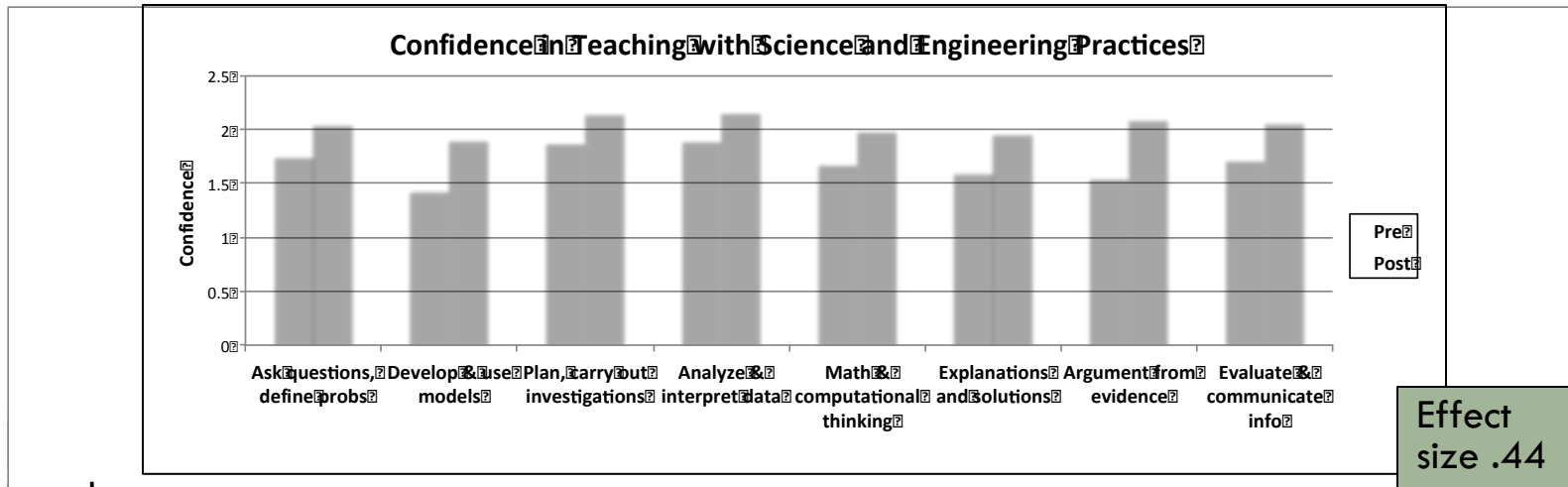
Teachers learn science and pedagogy for NGSS



Effect size .74



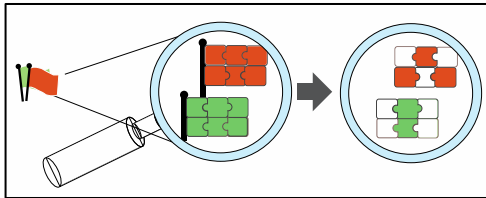
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NGSS Storyline Approach

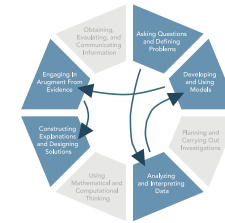
- Used to *design* ISBE model curriculum science units
- Teachers use storyline approach to *analyze classroom* cases to learn about 3D learning in NGSX
- Teachers use storyline approach to learn how to *enact* the ISBE model science curriculum units



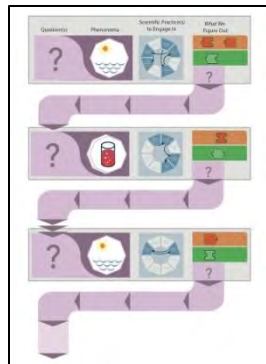
Unpack disciplinary core ideas and crosscutting concepts







Link unpacking to **questions** and **phenomena**



Select **practices** to make sense of phenomena



Develop **storyline** where each step arises from pending questions or gaps in explanations

| Lesson | Question(s) | Phenomena | Scientific Practice(s) to Engage In | What We Figure Out |
|--------|---|---|---|---|
| |  |  |  |  |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

Coherent Storyline for unit

Summary: NGSX for ISTEM

- **Matter pathway** (8 units, 25 hours) to involve teachers in the science and pedagogy of NGSS three dimensional learning
- **Facilitator pathway** for Area Teacher Leaders to prepare ATL to facilitate NGSX teacher study groups
- NGSX **ISBE science curriculum unit cases** to prepare teachers to enact and learn from ISBE units

Intel Math®

Aubrey Neihaus

Project Manager

Institute for Mathematics and Education

University of Arizona

Intel Math

- A nation-wide math content-based professional development program for K-8 teachers.
- Has been taught in AZ, CA, CT, FL, GA, IL, MA, MI, NJ, NM, OR, PA, UT, VA, and WI began in 2007, and has reached over 5,500 teachers to date.
- Adapted from the Vermont Math Initiative by author Dr. Ken Gross
- Piloted by the Intel Foundation
- National Scaling managed by the Institute for Mathematics and Education at the University of Arizona

Course Basics

- 80 hour professional development course
- For K-8 school teachers in mathematics content
- Emphasis on deepening the conceptual understanding of mathematics through exploration, inquiry activities, solution sharing, and homework
- 90% mathematics content & 10% mathematics pedagogy
- Co-teaching model → 1 mathematician instructor
1 mathematics educator instructor

Course Themes

- Mathematics is problem solving
- Arithmetic, geometry, & algebra are interconnected
- There are many ways to solve a problem
- Mathematics is not a spectator sport

Intel Math is not...

- remediation
- make and take activities
- only focused on the math a particular teacher teaches

Intel Math is...

- deeply conceptual
- building foundational knowledge of teachers
- about the coherent whole of K-8 mathematics

Costs for Intel Math

- **Materials:** budget \$125 per teacher for printed materials
- **National Training Agency fee:** budget \$4,250 per cohort.

The background of the slide features a series of vertical lines in various shades of blue and grey, creating a textured, abstract pattern. The lines vary in thickness and color, with some being solid and others semi-transparent, giving a sense of depth and movement.

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