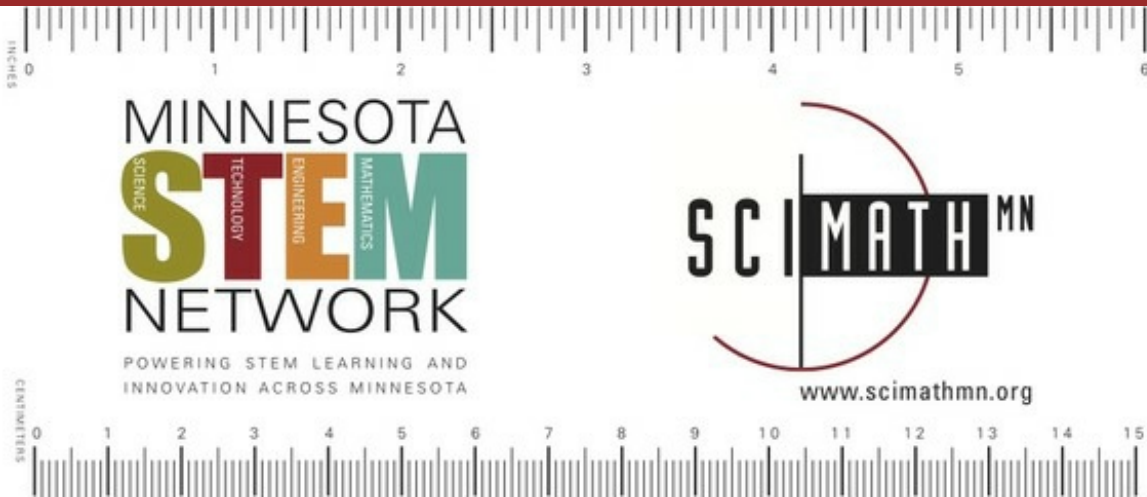


July 2011



**Bush Fellowship
Awarded to Anne
Hornickel for
Development of the
Minnesota STEM
Network**



[The Bush Foundation in Saint Paul](#) has recently announced its 2011 fellowships to 18 community leaders in Minnesota, North Dakota, and South Dakota. Among them is Anne Hornickel, recognized for her work in 2010 toward establishing the network as well as future plans to expand the network across Minnesota.

Anne's fellowship over the next two years will allow her time to work on two principal

An Update from SciMathMN and the Minnesota STEM Network

This newsletter produced with the support of:



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- Minnesota STEM Network Annual Meeting Highlights
- STEM Day at the 2011 Minnesota State Fair

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tasks:

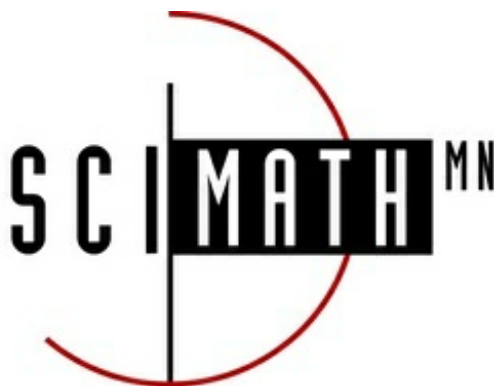
- Foster the development of smaller scale networks or hubs in regions of Minnesota, similar to the well-developed Rochester Area Math and Science Partnership
- Develop a framework for articulating the state of STEM education in Minnesota.

The fellowship will also provide travel funds to promote network development across the state and to network with other state STEM networks. Promoting regional hub development will take place in collaboration with the Minnesota High Tech Association as it hosts STEM summits across the state in 2011-12.

Boston Scientific Funds Strategic Planning Phase



To advance the strategic development of the Minnesota STEM Network, SciMathMN approached Boston Scientific for support for strategic planning. In April, Boston Scientific awarded a \$179,100 grant to SciMathMN which will allow SciMathMN to engage the LarsonAllen consultants in strategic planning for the network. Marilee Grant,



Letter from the Executive Director

On behalf of the Board of Directors I welcome you to a “year-in-review” of SciMathMN, a non-profit coalition advocating for quality K-12 education in science, technology, engineering and mathematics (STEM). Through our partnerships with business and education leaders and policymakers this year we have been able to move forward on a number of K-16 STEM initiatives and practices including: MN STEM Teacher Center and Frameworks, MN STEM Network, K-12 BIZ Connect, and our annual Policymaker Briefing. We have provided more detail in articles in this newsletter.



The Board of Directors congratulate board member Anne Hornickel on receiving a Bush Fellowship. Anne has been a tireless champion of the Minnesota STEM Network. Details on the award can be found in the newsletter.

We would like to thank our sponsors for their support of this year’s STEM initiatives:

- 3M
- Boston Scientific
- Ecolab
- HB Fuller
- Medtronic
- Medtronic Foundation
- Minnesota Department of Education
- Science Museum of Minnesota
- Friends of SciMathMN

We appreciate their financial support.

Hail and Farewell!

Six long-time members of the SciMathMN Board of Directors reached their maximum terms this spring. With gratitude for their years of dedicated service we bid farewell to:

- Cyndy Crist, MN State Colleges and Universities
- Barbara Kauffman, 3M
- Brad Meeks, Farmington Schools

director of community relations for Boston Scientific, announced the grant at the April 21st annual meeting.

All involved in the network agree that education, business, and community engagement in STEM will be critical to Minnesota's economic development. For Minnesota to remain competitive across a broad range of industries, STEM must be a strength. The Minnesota STEM Network is committed to making STEM a competitive advantage for Minnesota.

The Minnesota STEM Network is now at a point where it needs a strategic plan which will both expand and focus the work of the organization while building buy-in and engagement from a broad range of constituents. More specifically, the strategic plan is intended to bring clarity to:

- A pathway to impact: Where and how can the Minnesota STEM Network add the greatest value to Minnesota's STEM needs, especially at the interface of education, business, and economic development in STEM?
- A pathway to synergy: How can the data and "program inventory" of the Minnesota STEM Network be used to provide synergy and value, beyond information?

- Brad Meers, Farmington Schools
- Len Mrachek, University of Minnesota
- Beth Murphy, The Bakken Museum
- Nancy Walters, MN Office of Higher Education

We welcome seven new members to the Board of Directors:

- Kristil MacDonald, Pine River/Bacus Schools
- Amaza Ritemier, Medtronic
- Jerry Sosinske, Boston Scientific
- Doug Stang, 3M
- Troy Vincent, Farnsworth Elementary
- Bhaskar Upadhyay, University of Minnesota

It's been a great year and next year promises to be as exciting.

Sincerely,

Sally Standiford, Ph.D., Executive Director

MN STEM Teacher Center and Frameworks

The screenshot shows the website for the Minnesota STEM Teacher Center. The main heading is "Frameworks for MN Mathematics & Science Standards". Below this, there are two columns of navigation links for "Mathematics Frameworks" and "Science Frameworks", each with options for grades K, 1, 2, 3, 4, 5, 6, 7, 8, and 9-12. To the right, there is a section titled "About the Creators" which describes the partnership between SciMathMN and the MN Department of Education. At the bottom right, there is a logo for the Minnesota Department of Education.

We are completing our work with the Minnesota Department of Education to design a MN STEM Teacher Center and recreate Frameworks that guide the translation of Academic Math and Science Standards into K-12 classroom practice.

In partnership with the MN Department of Education, SciMathMN has been coordinating the effort involving over 170 teachers and curriculum experts. Many of the state's best K-16 science and math teachers and faculty have been involved in the Frameworks project to help teachers develop and organize their materials, instructional practices, and assessments at their local schools.

information?

- A pathway to stakeholder support: What will cause the institutional and individual leaders in STEM across the State to support the work of the Minnesota STEM Network . . . with their time, talent, and treasury?
- A pathway to financial sustainability: How can SciMathMN and the Minnesota STEM Network build and sustain the resource base needed to implement the initiatives identified in the strategic plan? What is the financial future of the organization?



We believe the Frameworks will be critical components in moving Minnesota's world-class standards to become world-class practice in Minnesota classrooms. The Frameworks provide supporting information and resources for each of the math and science standards, including:

- An **Overview** of the standard including Correlations to other standards
- **Student Misconceptions**
- A **Vignette** of that standard being delivered in the classroom
- **Resources** and new vocabulary
- **Sample Assessment** items
- **Differentiation** for the range of students in the classroom
- **Suggestions for Administrators and Parents**

Bookmark the [MN STEM Teacher Center](#) to have this resource close at hand!

The LarsonAllen team is working with a 13-member steering committee consisting of SciMathMN board members, Leadership Team members, and four members of the STEM community at large to guide the strategic planning and reflect upon the input received.

LarsonAllen will:

- Initiate a survey with those in the network database on buy-in of the mission/vision, goals and strategies established in 2010
- Conduct a number of one-on-one interviews with stakeholders
- Hold group interviews with stakeholders in STEM education in regions around the state;
- Carry out several

Please note: *The MN STEM Teacher Center opened to the public on June 30, 2011. However, we will still be reviewing and updating the content for a few weeks. We appreciate your patience with us during this process and welcome your suggestions. We hope you like what you find here and will become a regular visitor.*

Here is what MN educators have to say about the NEW MN STEM Teacher Center and Frameworks:



Policymaker Briefing on STEM Recap

Our 2011 Policymaker Briefing focused on "Moving from World Class Standards to World Class Practice."



case studies of how other state STEM networks have become established.

The strategic plan is expected to be substantially completed by October, 2011.

LarsonAllen will present their findings to a joint meeting of the SciMathMN board and the Minnesota STEM Network Leadership Team.

SciMathMN

SciMathMN is a non-profit, statewide education and business coalition advocating for quality K-12 science, mathematics and technology education based on research, national standards and effective practices.

SciMathMN Board of Directors

Liesl Chatman, Science Museum of Minnesota

Marshall Davis, St. Paul Public Schools

Joel Donna, University of Minnesota College of Education and Human Development

Angie Eilers, Sophia Learning

Jim Field, Minnesota Independent School Forum

Tracy Fredin, Hamline University

Julie Guelich, Normandale Community College

The program featured the new MN STEM Teacher Center. Dr. Rodger Bybee delivered the keynote address. A panel of STEM education experts provided teacher, administrator, post-secondary and business perspectives on the next steps in achieving world-class practice for MN K-12 STEM education. Panel members included:



- Sarah Etzel, Minneapolis Public Schools
- Maggie Hoody, Winona State University
- Pat Ridgeley, SciMathMN
- Troy Vincent, Farnsworth Middle School



To kick off the event, SciMathMN held its first-ever STEM Best of Best Showcase featuring top students and teams from a variety of Minnesota STEM competitions and organizations including:

- Clean Energy Exploration
- FIRST Robotics Edina
- FIRST Robotics Minneapolis
- High Tech Kids
- InSciEd Out/Zebrafish Project
- KidWind
- Leonardo's Basement
- MTEA Supermileage Competition
- Project Lead the Way
- TPT SciGirls

AND individual student representatives:



- Connor Klemenhagen
- Karin Sather
- Travis Sigafos

We would like to thank our sponsors for making this event possible:

HOST SPONSOR
Science Museum of Minnesota

Ed Hessler, Minnesota
Science Teachers
Association

Anne Hornickel, University of
Minnesota College of
Science and Engineering

Richard Hudson, Twin Cities
Public Television

Steve Kelley, University of
Minnesota Humphrey
Institute of Public Affairs

Mike Lindstrom, Minnesota
Technology and Engineering
Education Association

Jenny Manogue, Kelly
Mitchell Group

Kristil MacDonald, Pine
River/Bacus Schools

Tom Muchlinski, Minnesota
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Greg Mueller, H.B. Fuller

John Olson, Minnesota
Department of Education

Doug Paulson, Minnesota
Department of Education

Taylor Pettis, Sophia
Learning

Becky Rennieke, Perham
Dent High School

Matt Richey, St Olaf College

Pat Ridgely, Medtronic Inc.

Amaza Ritemier, Medtronic

Colleen Sauter, Colleen Riley
Sauter Consulting

Patty Simpson, St. Cloud
Community College

EVENT SPONSOR
3M

FRAMEWORKS SPONSOR
Minnesota Department of Education

K12 STEM BIZCONNECT Partnership Guide

SciMathMN, with the support of HB Fuller, hosted an Adopt-A-School/Adopt-A-Business pilot kickoff meeting on May 12, 2011. Participants representing business, education (K-12/higher ed), non-profits, and policymakers discussed ways to advance STEM engagement through community partnerships.



An initial draft of the K12 STEM BIZCONNECT Toolkit was shared with attendees. The toolkit serves as a sample guide to partnership formation and outlines a variety of program examples.

Pilot participants will review the contents of the toolkit and assist with future content revisions so the guide becomes a continuously evolving document authored by many contributors. In the future, SciMathMN plans to initiate a web-portal where partnerships can showcase their programs.

Please contact [Colleen Sauter](#) to obtain a copy of the K12 STEM BIZCONNECT Toolkit.



AN INITIATIVE OF



Annual Meeting Highlights

Over 175 educators, informal



State University

Jerry Sosinske, Boston
Scientific

Sally Standiford, SciMathMN

Doug Stang, 3M

Cathy Summa, Wellesley
College

Cassandra Svendsen,
Society of Women
Engineers

Julie Tangeman, Teacher-in-
residence, The Bakken
Museum

Bhaskar Upadhyay,
University of Minnesota

Troy Vincent, Farnsworth
Elementary

Carolyn Williams, St. Cloud
State University

Susan Wygant, Minnesota
Dept. of Education

Minnesota STEM Network

***The Minnesota STEM
Network is aimed at
addressing critical issues
in improving STEM
education in Minnesota.***

***By articulating and
aligning strategies, and
effectively communicating
the value of STEM, the
network is committed to
powering STEM learning
and innovation across
Minnesota.***

**MN STEM Network
2010-2011**

educators, and representatives
of business, government and
cultural community
organizations attended the
second annual Minnesota
STEM Network meeting on
Thursday, April 21, 2011 at
Boston Scientific in Maple Grove.



Leadership team member Jerry Sosinske and Boston Scientific's STEM Council hosted the daylong meeting. The meeting featured networking, plenary presentations, breakout sessions, and a poster session on successful programs promoting STEM to girls in underrepresented students.



Plenary presentations featured:

- Beth Aune, Director of Academic Standards and P-20 Initiatives, Minnesota Dept of Education (MDE)
- Margaret Anderson Kelliher, President and CEO of the Minnesota High Tech Association (MHTA)
- Randy Johnson, President of the Rochester Math and Science Partnership (RAMSP)
- Sally Standiford, Executive Director of SciMathMN
- Doug Paulson, STEM Specialist, Minnesota Dept of Education.

Dr. Aune highlighted MDE's initiatives to increase student achievement in STEM fields. Ms. Anderson-Kelliher provided an overview of the employment outlook in STEM in the next decade. Randy Johnson described the history and initiatives of the Rochester Area Math and Science Partnership. This partnership of 18 years involving IBM, Mayo Clinic, Rochester Public Schools, Winona State University and 13 regional school districts in SE Minnesota is dedicated to the professional development and support of area teachers, students, and communities through quality STEM education. Sally Standiford described SciMathMN's Frameworks project which provides background and pedagogy on each of the new science and math standards. She then introduced Marilee Grant, director of community relations of Boston Scientific who announced Boston Scientific's support toward the Minnesota STEM Network. She announced \$179,100 grant to SciMathMN which will fund the involvement of LarsonAllen consultants toward six months of strategic planning (see adjacent article). Doug Paulson provided an illustration of how the network aims to compile a website which will represent the numerous STEM

Leadership Team

SciMathMN board members:

Cynthia Crist, Minnesota State Colleges and Universities

Joel Donna, University of Minnesota College of Education and Human Development

Ed Hessler, Hamline University; Minnesota Science Teachers Association

Anne Hornickel, University of Minnesota College of Science and Engineering

Richard Hudson, Twin Cities Public Television

Steve Kelley, University of Minnesota Humphrey Institute

Mike Lindstrom, Minnesota Technology and Engineering Educators Association

Tom Muchlinski, Minnesota Council of Teachers of Mathematics

Doug Paulson, Minnesota Department of Education

Colleen Sauter, Colleen Riley Sauter Consulting

Jerry Sosinske, Boston Scientific

Sally Standiford, SciMathMN

Cassandra Svendsen, Society of Women Engineers

initiatives in Minnesota.

Breakout sessions featured discussions on business-school partnerships, research in STEM education, engaging girls, and engagement and career pathways in STEM.



The afternoon featured a brief address by Senator Al Franken, who expressed support for the network and offered his perspective on the value of STEM to Minnesotans and his current initiatives relevant to STEM in the U.S. Senate.

STEM Day at the 2011 Minnesota State Fair

The second annual STEM Day at the Fair, sponsored by the Minnesota STEM Network, will again have a prominent place in Carousel Park on Thursday, August 25th, opening day of the 2011 Minnesota State Fair. Families may visit over 25 exhibitors between 8 am and 5 pm in Carousel Park next to the Grandstand.



STEM Day at the State Fair is focused on reaching K-12 students, teachers and parents with the messages:

- STEM is fun
- STEM has a huge impact and benefit on our society
- Wonderful STEM career opportunities exist, both now and in the foreseeable future.



This year's roster of STEM Day at the State Fair participants includes:

- 3M Visiting Wizards
- The Bakken Museum

Community members:

Sarah Audet, Medtronic Inc.

Ron Bennett, University of
St. Thomas College of
Engineering

Sophia Ginis, University of
Minnesota Humphrey
Institute

Jake Lantry, Minnesota High
Tech Association

Mike Thyken, Merrill
Corporation

Kim Van Wie, STARBASE
Minnesota

Leah Wilkes, Univ. of MN
Humphrey School of Public
Affairs

Eva Scates-Winston,
Minnesota State Colleges
and Universities

Get Linked in

Join the MN
STEM



Network on Linked in. Post
news and events so
everyone in the network can
stay up-to-date on STEM
activities and news in
Minnesota.

[Hurry- Join us today.](#)

- Bell Museum of Natural History
- Cedar Park STEM Elementary
- Eagan FIRST Robotics
- ExploraDomeMN
- First Tech Challenge First Robotics
- Future City
- High Tech Kids
- Imation
- Independent Learning LLP
- KidWind
- Laura Jeffrey Academy
- MTS Systems Corporation
- Microsoft
- Minnesota 4-H
- Minnesota Space Grant Consortium
- Minnesota High Tech Association
- National Center for STEM Elementary Education at St. Catherine University
- Raptor Center at the University of Minnesota
- Science Museum of Minnesota
- SciGirls at Twin Cities Public Television
- STARBASE Minnesota
- St. Cloud State University
- South Central College
- STEM Education Center at the University of Minnesota

The University of Minnesota Physics Force and chemistry show, Microsoft, Raptor Center and The Bakken will present on the main stage on an hourly performance schedule.



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