



Online Mentoring
for New Math and
Science Teachers

Anytime.

Anywhere.

e-Mentoring for Student Success (eMSS) supports the development and retention of beginning science and math teachers through content-specific online mentoring that promotes student achievement.



Overview of the eMSS Program

eMSS is a nationwide teacher mentoring program in which beginning science and math teachers are matched with a mentor who has experience teaching their same science or math subject and grade level.

Through eMSS, new and veteran teachers collaborate in an interactive and facilitated professional learning community to exchange information, ideas, and experiences in order to advance high-quality science and math instruction for all students.

eMSS began in 2002, when the National Science Foundation (NSF) awarded a five-year grant to the National Science Teachers Association (NSTA), the New Teacher Center (NTC) at the University of California at Santa Cruz, and Montana State University's Science/Math Resource Center (MSU-SMRC) to develop the innovative eMSS project.

The eMSS Vision

"One of the most important challenges that we face is providing our students with exemplary instruction in math and science. In order to do that, we need to recruit some of the best and brightest candidates in America, and then offer these new secondary math and science teachers the kind of support they need to be successful. By pairing excellent science and math mentors with new teachers, we are able to reach teachers in rural settings as well as urban settings nationwide."

*Ellen Moir, Executive Director
New Teacher Center
University of California – Santa Cruz*

Online Content-Focused Mentoring Makes Sense for New Teachers

The biggest challenge confronting new teachers is ...

lack of time. With Internet access, all eMSS activities and discussions can be done anytime and anywhere. This makes it easy for time-pressed new teachers and their mentors to participate in deep and sophisticated conversations despite their busy schedules.

eMSS provides subject- and grade-level-specific

mentoring support. The eMSS online environment allows us to pair mentors and mentees based on their teaching assignments and grade level rather than on proximity or convenience.

eMSS provides new teachers access to a nationwide

network of math and science teachers. Teacher leaders and practicing scientists and mathematicians facilitate the community of math and science teachers nationwide who collaborate in discussion forums. The dynamic exchange between the larger group, made possible through the online network, is not possible through face-to-face mentoring. The eMSS program opens up a community of math and science teachers nationwide who collaborate in discussion forums facilitated by teacher leaders and practicing scientists and mathematicians.

eMSS emphasizes student learning

The eMSS model places a high priority on student learning and emphasizes two elements conspicuously absent in many mentoring and induction programs:

- eMSS organizes its program to help new teachers understand the ways in which students think and learn about science and math.
- eMSS provides new science and math teachers with facilitated and sustained discussions with experienced teachers and content experts.

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With eMSS, new teachers can find expert veteran teachers all over the country who have taught the same subject. eMSS gave me a variety of lesson plans and strategies to use in my classroom that were engaging and fun. This took my teaching to a whole new level — all of a sudden I had a resource to go to and I wasn't alone in my classroom.

— eMSS Mentee

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eMSS Mentee Success Story



Amy Troiano faced a disconcerting dilemma. Just as she completed her biology degree and was preparing for the final year of her teacher education program, her husband was laid off. With two small children to support, she knew she had to go to work. Determined to teach, she decided to take the leap directly into the classroom.

She was offered a position teaching seventh- and eighth-grade science, and Amy found herself confronting all the challenges of being a new teacher—without adequate training. “The first year was scary,” she said. “There were times when I felt as if I was faking it. I really didn’t know what I was doing. It was a whirlwind.”

It helped that her content—biology—was familiar, but assessment, classroom management, procedures, grading, and lesson planning were daunting. Although her students enjoyed her classes, Amy never felt comfortable. As she approached her second year, she encountered an additional conundrum: she was scheduled to teach physical science, a content area with which she was unfamiliar.

Just as she was wondering how she could go on—and knowing that she needed help—she saw an e-mail describing the eMSS program. Her first thought: “That’s exactly what I need.”

Amy immediately discovered how eMSS would help her teaching. “You can work at your own pace and at a time of your choosing. It never felt like extra work. It just enhanced whatever I was already doing.”

With easy access to a computer in her classroom, Amy used eMSS throughout the day. “Whenever I had a question or idea or concern, I would pop onto eMSS and type it in. I knew that when I went back online, whether it was an hour later—or two days later—there would be some kind of help for me. I could ask about anything, from dealing with colleagues to administrative changes to content for kids. And I would get feedback and an objective opinion from a skilled veteran.”

Amy has encouraged other new teachers at her school to enroll in eMSS. The reason, she says, is simple. “Being part of the eMSS community, I feel so much more confident in what I’m doing. My mentor helps keep me grounded by asking important, reflective questions. And my mentor is quick in helping me find ways to connect back to the standards, and she works with me to think out what to do next to help my students. eMSS gives me a huge advantage.”

eMSS Mentor Success Story



Aaron Mathieu was looking for a challenge. The veteran biology teacher had just finished his National Board certification and was seeking new ways to use his 13 years of teaching experience.

"I was at the point in my career where I felt it would be nice to learn to be a mentor," he said. "The eMSS program seemed like a perfect fit."

Aaron knew that during their first year or two in the classroom, new teachers often default to "survival mode" and are unable to spend much time reflecting on content or examining issues that go beyond getting through each day. But he found that the eMSS mentoring program changed that dynamic, allowing mentees to begin refining what they were doing immediately and to explore sophisticated questions about their teaching practice that rapidly improved their performance.

Aaron soon discovered that his eMSS mentoring work changed his teaching as well, pushing him to ask questions about his own practice. "You get so much out of the program personally," he said. "It re-engages your reflective questioning." Aaron began re-examining pedagogies that he took for granted.

"After a few years, you tend to reflect on the things that are interesting to you and not necessarily all the things that you need to work on. But as part of the eMSS program, you're suddenly engaging in conversations with other teachers and you are seeing issues from both a new teacher's and a veteran teacher's perspective. You begin to ask yourself if there might be a better way to do things."

Through the eMSS online community, Aaron has developed professional relationships with teachers across the country. "There are so many resources on the eMSS site. I get to have deep conversations about biology, which I love. It's like Facebook for science teachers," he said.

Aaron looks forward to continuing his mentoring for eMSS. "It's energizing to work with new teachers. And the mentors benefit so much from the program. In my entire teaching career, with all the professional development I've been involved with, eMSS is hands-down the best."

eMSS Program At-a-Glance

Anytime. Anywhere.

A Nationwide Network of Teachers.



Our Place



Mentee Place and Mentor Place



Organizations enroll their beginning teachers in eMSS

Our Place

A private area designed for mentees to work with their mentors. Mentees discuss their teaching practice and receive one-on-one mentoring from an experienced teacher in the same grade and subject.

Mentee Place and Mentor Place

Discussion forums for larger groups of mentees and mentors. Mentee Place allows mentees to share ideas and connect with other beginning teachers across the country. Mentor Place offers ongoing professional development and support for mentors.

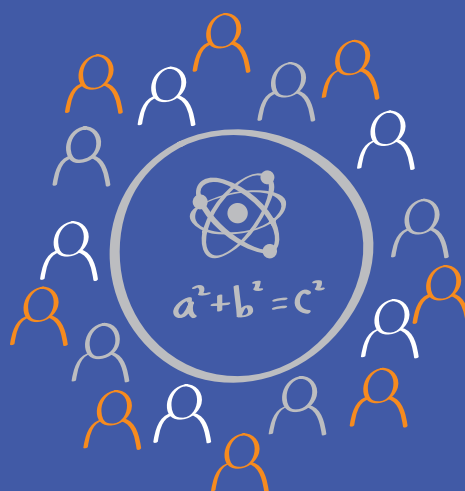
Inquiries



Inquiries

Self-selected small groups examine pedagogical or content practices that can be applied directly to the classroom. A foundational part of eMSS, this is a structured and facilitated curriculum, which guides participants through a plan, practice, and reflect cycle.

Community Forum and Resources



Community Forums and Resources

A community of middle and high school teachers participates in discussion forums facilitated by teacher leaders and practicing scientists and mathematicians. Content-focused discussions, dilemmas of practice, and access to resources are the heart of this area.

Online Content-Focused Mentoring Makes Sense for Education

eMSS provides content-specific support to secondary math and science teachers not typically available through induction programs. eMSS leverages an online technology network to extend flexible, personalized, content-specific support to beginning teachers nationwide. The eMSS program is inclusive of trained online mentors, a comprehensive math and science curriculum, and access to a vast array of math and science resources.

The eMSS curriculum is based on research and best practices in teacher development and online learning. eMSS Math and Science were developed only after comprehensive research of content-specific best practices including those from the National Science Education Standards, National Council of Teachers of Mathematics (NCTM) Principals and Standards for Math; and the vast resources of the NSTA.



To ensure that the content and curriculum remain relevant and up-to-date, eMSS is evaluated and refined on an ongoing basis by experts in the fields of math and science education as well as eMSS participants.

eMSS recruits highly qualified and experienced educators nationwide and then trains them to be outstanding mentors and facilitators. eMSS follows the NTC best-practice teacher induction recommendations, including careful and rigorous selection of mentors, initial and ongoing training for online mentors, formative assessment activities and beginning-teacher professional development.

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Being able to communicate with the whole eMSS community through posts, I was able to find new activities to try in my classroom and to ask questions when I was stuck. I appreciate how I can pose a question and quickly get many different educated responses.

– eMSS Mentee

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eMSS Program Features

eMSS Program



Professional Development and Networking

Through eMSS, new and veteran teachers—as well as university scientists and mathematics educators—collaborate in an interactive community to facilitate the exchange of information, ideas, and experiences in order to advance high-quality math and science instruction for all students.



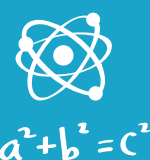
Online Learning Environment

eMSS extends flexible, personalized, content-focused support to beginning teachers nationwide through its online technology network. eMSS offers mentees a range of online activities they can participate in—the mentee chooses those that best suit their own teaching needs.



Program Management

Designed to be a turnkey mentoring program for schools, the eMSS staff manage all aspects of the program administration including online applications, data reporting and regular pre- and post-surveys of participants. The intended goal is to make implementation seamless for school districts.



Content Focused Mentoring Curriculum

eMSS includes a facilitated math- and science-specific curriculum that engages beginning teachers in planning, practicing, and reflecting on their classroom teaching. They exchange ideas with other beginning teachers as well as mentors who are working on similar goals.

The Results

- Improves teacher satisfaction
- Improves new teacher ability to teach science and math
- Improves new teacher understanding of content
- Provides access to science and math resources, otherwise unavailable to new teachers
- Provides differentiated, math- and science-specific support to new teachers
- Leadership development for veteran teachers
- Virtual extension of teaching staff

The Impact of eMSS



Since 2002, eMSS has had a significant impact on the nation's education community. We have:

- Worked in all 50 states
- Influenced the education of more than a quarter of a million students
- Mentored more than 1,500 new teachers
- Trained more than 500 mentors

The positive impact eMSS has had on beginning math and science teachers is validated through independent studies conducted by Horizon Research, Inc. This objective, third-party research has shown that eMSS has had a significant impact on:

- Preparedness to teach challenging courses and curricula
- Ability to teach content
- Preparedness in basic teaching and classroom management skills
- Teacher satisfaction

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When we are overwhelmed with students, it is together that teachers can help each other. That is why I like eMSS. Our job feels solitary at times, as we are alone in our rooms with the kids. We need to reach out to our fellow teachers to share help, advice, and most of all laughter.

— eMSS Mentee

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Partnering for Success

The eMSS program developed its unique online mentoring model by drawing from the special expertise of three nationally recognized education organizations:

- **National Science Teachers Association (NSTA)**
- **New Teacher Center (NTC) at the University of California - Santa Cruz**
- **Montana State University Science-Math Resource Center (MSU-SMRC)**

These three partners were drawn together to develop a strategy and program designed to tackle the multitude of challenges facing science and math educators nationwide. The partners combined their individual strengths and developed the vision of online induction for science and math teachers.

The Goal: Retain qualified math and science teachers while simultaneously improving teacher practice.

The Result: The nationwide eMSS program.



National Science Teachers Association

The world's largest organization of science teachers is committed to promoting excellence and innovation in science teaching and learning for all. NSTA is a national resource for instructional best practices in science.

New Teacher Center at the University of California - Santa Cruz

For the past 20 years, the NTC has been a national leader in the field of induction, teacher development, and innovative mentoring programs. The NTC staff are experts in accelerating new teacher development with a focus on student learning and classroom instruction.

Montana State University Science-Math Resource Center

The MSU Science-Math Resource Center has special expertise in starting, growing, and sustaining online communities. The SMRC also has years of experience in providing assistance to improve science and math education.

The Opportunity



eMSS is transforming the recruitment and retention of qualified middle and high school math and science teachers. NSTA, the NTC and MSU-SMRC are committed to continually working to improve eMSS to ensure it remains on the cutting edge of national math and science curriculum standards as well as best practice mentoring recommendations.

If you are passionate about science and math education and would like to provide eMSS online mentoring to beginning math and science teachers in your school district or organization, we would like to hear from you! Please contact us so we can discuss the opportunity.

Contact Us

For general questions pertaining to eMSS, please email emss@newteachercenter.org
www.newteachercenter.org/emss

New Teacher Center
University of California - Santa Cruz
Phone: 831-459-4323
Fax: 831-459-3822

eMSS Endorsements

“Each inquiry was very applicable to my classroom. They enabled me to focus on one aspect of my teaching, create an action plan, and carry it out. Such a direct approach allowed me to take a large unmanageable problem and break it into manageable pieces. I was able to focus on a few things at a time, which made the whole first year much more bearable.”

– eMSS Mentee

“The number-one benefit from eMSS was when I needed an idea for Monday to lighten up or enliven a topic for my students, I would post and ask for ideas from the eMSS community. I was amazed at the amount of responses you get from other mentors and mentees.”

– eMSS Mentee

“The State of Hawaii consists of eight islands, with secondary schools on every island. Many of our new teachers are working in schools that are remotely located and highly challenged as part of the No Child Left Behind (NCLB) corrective-action program. In addition, many of these new teachers are not teaching in their content area. The greatest impact of eMSS is that it enables us to provide content-specific mentoring assistance to new teachers on any island, however remotely located.”

– Karen Umeda, Hawaii eMSS Coordinator

