Integrated Mathematics, Science, and Technology at Home and Abroad

The Integrated Mathematics, Science, and Technology (IMaST) curriculum was developed by CeMaST and funded by the National Science Foundation, Eisenhower funds from the Illinois State Board of Education, and Illinois State University. The IMaST program was developed to provide an integrated curriculum that would promote experientially based, hands-on learning for students and teaming among teachers from three or more disciplines. Although the IMaST curriculum project began over a decade ago, it continues to grow and develop.

IMaST at the National Academy of Engineering

Dr. Willy Hunter, CeMaST Director, and Dr. Brad Christensen, IMaST Coordinator, went to Washington, DC in mid-January to attend the National Academy of Engineering (NAE) meeting of the Committee on Integrated STEM Education. This meeting was a part of the new study of integrated science, technology, engineering, and mathematics (STEM) education at the K-12 level. Their intent was to determine a research agenda for integrated STEM education. The first step in that process was to identify and invite different integrated STEM programs, such as IMaST, to present to the committee. Of the integrated STEM programs to present at the meeting, IMaST was the only program that was designed to replace traditional curriculum rather than just supplement it.

IMaST Travels to the United Kingdom and Back

Not only has IMaST been traveling across the country, but it has also been traveling abroad. CeMaST has partnered with TPS Publishing in the United Kingdom and AlphaGraphics in Texas to promote IMaST in England, Ireland, and Scotland. There have been several teacher conferences with positive results, and pilot testing will be conducted in two academies this spring. The IMaST curriculum is now on display at the science curriculum library in York.

CeMaST is currently working with TPS Publishing and AlphaGraphics to prepare IMaST materials for adoption in California and Florida, and creating a custom book to specifically address mathematics aligned to content in the Common Core State Standards.

The IMaST team is also creating 24 new learning cycles for K-5 that will be aligned to the common core mathematics standards. Although not strictly IMaST, these new learning cycles will follow the same structure and philosophy as the IMaST curriculum.

For more information, please visit http://cemast.illinoisstate.edu/educators/imast/

Upcoming Events:
- March 27 — MIST Ink and Battery Recycle Drive
- April 14 — Expanding Your Horizons
- April 22 — Family Science Day
- April 23 — Guest Speaker Benjamin Mee (author of We Bought a Zoo)
- April 27 — High School Research Symposium
- May 2 — ACS Chemistry Exam

More information, including details about registration, can be found at our website: CeMaST.IllinoisState.edu
CeMaST Call for Volunteers

CeMaST needs your help this spring. Volunteer to help out at our Family Science Day event or at the High School Research Symposium.

**Family Science Day—April 22, 2012**

Family Science Day is a public outreach event to educate and inspire students in fields of science, technology, engineering and mathematics. Our goals for the Family Science Day are simple: to stimulate an excitement and interest in science in elementary and middle school children and their peers, to get parents involved in the educational process, to provide hands-on experience in science learning, and to raise awareness of the importance of STEM in our society.

We are in great need of volunteers for this large event. Volunteer roles will involve helping with set-up and tear-down of exhibits, parking, crowd control at popular exhibit booths, assistance for short-staffed booths, providing water/breaks/etc. for exhibitors, and more (accommodations for volunteers with mobility/other issues, limited availability, etc. can be made).

**High School Research Symposium—April 27, 2012**

The Annual Illinois State University High School Research Symposium, sponsored by CeMaST, invites high school students to share their original work in science, mathematics, engineering, or technology. This is a poster presentation event that provides them with the opportunity to share their research with an audience of ISU professors, ISU students, and other Illinois high school students.

We are in need of two types of volunteers for the ISU High School Research Symposium:

- **General Assistants**—These volunteers will assist with a variety of Symposium tasks including: event set-up, staffing the check-in table, taking photographs, tallying judging forms, etc. *(We are in need of at least 10 general assistants for ~2-3 hour shifts.)*

- **Poster Judges**—These volunteers will review high school student research posters and rank posters based on suggested criteria. *(We are in need of at least 30 poster judges for ~1 hour shifts.)*

**American Chemical Society (ACS) High School Chemistry Contest—May 2, 2012**

Illinois State University (Normal, Illinois) is pleased to announce that it will host the 35th Annual American Chemical Society High School Chemistry Contest. Over 60 high schools have been invited to attend the event this year. In recent years, this event has had attendance in excess of 500 students.

We are in need of two types of volunteers for the ACS High School Chemistry Contest:

- **General Assistants**—These volunteers will assist with a variety of tasks including: event set-up, staffing the check-in table, sorting student exams, etc.

- **Exam Proctors**—Each exam proctor will be assigned a row of tables where high school students will be seated. Exam proctors will pass out and collect exams to students at their assigned tables and monitor students during the exam.
Ways to Get Involved

Volunteer your time by participating in one of the following programs or events:

- Become a faculty mentor to LS-AMP students in the STEM disciplines (cdplatt@ilstu.edu or 8-3714)
- Volunteer to help out at Family Science Day, High School Research Symposium, American Chemical Society (ACS) High School Chemistry Contest, American Solar Challenge Normal Pit Stop, or other events

Be a mentor for the Illinois Summer Research Academy:

- Illinois Summer Research Academy (ISRA)—June 25-29, 2012
  - High school students spend a week with ISU professors working on various hands-on research projects.
  - http://cemast.illinoisstate.edu/students/high_school/isra/

Contact Us: CeMaST@IllinoisState.edu

Real Numbers Summer Workshop for Algebra I Teachers: An IMSP Grant

Members of CeMaST at Illinois State will be holding the Real Numbers Summer Workshop in Rockford this summer. This grant, funded by the Illinois State Board of Education (ISBE), will be the fifth Illinois Mathematics and Science Partnerships (IMSP): Summer Workshop or Institute (WIP 4) grant to be awarded to Illinois State since the program started.

This workshop will accommodate up to 36 math teachers (currently teaching Algebra I) from Rockford, Belvidere, Harlem, and the surrounding area. The workshop, held onsite in Rockford, IL, will run from June 11th - 22nd.

The focus of this workshop is to write learning cycles to teach common core in the context of the industry, focusing on the Illinois Pathways for Architecture and Construction, Energy, Health Science, and Manufacturing. The participants will visit area businesses and non-profits looking for applications of Common Core State Standards content for Algebra I and/or Math I.

These teachers will be piloting some of the learning cycles that come out of this workshop in the fall semester. There will be follow-up meetings, and participants will meet again for two weeks in the summer of 2013 to revise and finalize the learning cycles.

Purchase Tickets for Family Science Day

Family Science Day tickets are on sale now for $2.00 per person in advance ($3.00 at the door). Kids 2 and under are FREE.

Tickets can be purchased at the following locations:

- Redbird Arena Ticket Office
- Children’s Discovery Museum
- Challenger Learning Center
- CeMaST

Tickets also include entry into the door prize drawings and the grand prize drawing on the day of the event.
Sarah Boesdorfer has been working as a graduate assistant at CeMaST since the spring of 2010. Sarah is a fulltime doctoral student in the Department of Curriculum and Instruction with interests in chemistry/science education and chemistry teacher education. Prior to coming to Illinois State, Sarah taught high school chemistry and physics at two different Illinois high schools. Due to her interests and expertise, Sarah has been involved with the group of teachers completing their degree program for the Illinois Master Teacher-Leaders for Chemistry, an IMSP grant. Another major part of her responsibilities have included contributing to the development of many of the Chemistry Education E-learning graduate courses currently being offered. Sarah has worked on creating assessments, assignments, and syllabi for these courses. She also assisted in course design, and served as a teaching assistant for those courses.

Sarah has also supported many of CeMaST’s grant projects. She has contributed to the writing of several grants, and she is currently assisting with the evaluation portion of The Global Climate Change IMSP grant. She has also been a research assistant for several of the CeMaST associate and assistant directors, assisting in background research and data analysis.

Following graduation in August of 2012, Sarah has accepted the position of Assistant Professor of Chemistry Education at the University of Northern Iowa in Cedar Falls, IA. She is extremely grateful for all of her experiences at Illinois State University and CeMaST, as they have been vital in helping her prepare for her future.