

### Painting a Real World Picture of Chemistry at Sibley-Ocheyedan High School



Sibley-Ocheyedan science teacher Mike Wedge joins Diamond Vogel's lead chemist Chuck Mork in the powder coat lab.

"This has been an AWESOME experience," said Mike Wedge, a science teacher from Sibley-Ocheyedan High School, who is spending summer with **Diamond Vogel's** senior chemist, Chuck Mork, experimenting with pigments and variables in the company's paint labs. Mike is one of 33 Iowa science and mathematics teachers participating in the second year of *Real World Externships for Teachers of Mathematics and Science*. "I've learned how to really 'do' science, even though I've been teaching for some time," added Mike. The experience is mutually

rewarding for both Mike and Diamond Vogel. "Mike is working with us on several industrial research projects and has helped me develop new methods that wouldn't have been completed without his help," said Mork. As a result of this experience, Mike plans to turn his classroom into a "product-based chemistry company" to show students how products go from an initial idea to the marketplace. "This experience has really showed me that as teachers we need to teach across science and math disciplines – they all work together to give kids a realistic view of science." More information about the *Externship* program is at [www.iowamathscience.org/externships/](http://www.iowamathscience.org/externships/).

### A Most-Valuable Teammate at ISU



CESMEE director and IMSEP program coordinator at ISU -- Barbara Dougherty

When it comes to an enthusiastic colleague helping IMSEP meet the goal of preparing more highly qualified mathematics and science teachers for Iowa's classrooms, Dr. Barbara Dougherty's name comes immediately to mind. Dougherty, professor in curriculum and instruction and director of the *Center for Excellence in Science, Mathematics and Engineering Education (CESMEE)* at Iowa State University (ISU), is currently an IMSEP Executive Board member and the campus coordinator for all things IMSEP related at ISU. This includes the

implementation of the *I-TEACH Mathematics and Science Teacher Recruitment Program* at ISU. "There has been a lot of awareness building about *I-Teach* on campus this year, which could explain the significant increase in the *I-Teach* seminar enrollment—from three students joining the first semester the course was offered to 23 students last semester," said Dougherty. With teammates like Barbara Dougherty, IMSEP is well on track to meet its objectives.

### Is Your Program in the Inventory?



One-stop shopping for information about STEM education activities across the state is an elusive but widely hoped for accomplishment. An inventory—begun two years ago as a partnership of IMSEP and the Iowa Department of Education—has a 250-project start in that direction. But the value of the tool rests in the hands of users who upload, edit and periodically update postings to the site. Please add or modify your program by logging on to <http://www.iowamathscience.org/inventory.shtml>.

### Upcoming IMSEP Sponsored Events

July 11-16	<b>Astronomy for Teachers</b> An intensive course that includes curriculum and astronomy content as well as learning the night sky via star maps, binoculars, telescopes, software and print/online references. <b>Location:</b> University of Northern Iowa – Cedar Falls. <b>Contact:</b> Siobahn Morgan, Professor, <a href="mailto:Siobahn.Morgan@uni.edu">Siobahn.Morgan@uni.edu</a> or 319-273-2389
July 18-30	<b>PLTW Summer Training Institute</b> Open to all teachers teaching PLTW courses for Fall 2010. <b>Contact:</b> For more information, go to <a href="http://www.pltwiowa.org/">http://www.pltwiowa.org/</a>
July 27-29; Sept. 11	<b>Geoscience Education Information Network</b> Interactive workshop on how to incorporate Google Earth, GPS and/or GIS into teaching Iowa's geology. <b>Location:</b> University of Northern Iowa – Cedar Falls. <b>Contact:</b> Chad Heinzl, Assistant Professor, <a href="mailto:Chad.Heinzl@uni.edu">Chad.Heinzl@uni.edu</a>
August 3	<b>Iowa Science and Mathematics Teacher Educators Summit</b> A statewide one-day conference for all math and science teacher educators in Iowa. Keynote address by Pendred (Penny) E. Noyce, M.D. <b>Location:</b> Grinnell College – Grinnell, Iowa. <b>Contact:</b> For information go to <a href="http://www.iowamathscience.org/su_mmit_2010/">http://www.iowamathscience.org/su_mmit_2010/</a>
October 23-24	<b>USA Science and Engineering Festival</b> – A nationwide celebration of all things science and engineering in America. IMSEP exhibit represents STEM education initiatives and hands-on activities for Iowa. <b>Location:</b> Washington, DC. <b>Contact:</b> For information go to <a href="http://www.usasciencefestival.org/">http://www.usasciencefestival.org/</a>



Iowa Intern Licensure  
candidate and Noyce Scholar  
Ron Hoofnagle

At first glance, one might think making the leap from a Navy nuclear submarine to a high school classroom would be an unlikely move, but Ron Hoofnagle believes it to be a natural progression of his life-long interest in mathematics and science. Hoofnagle has recently joined Iowa's inaugural class of candidates for the nontraditional licensure program to increase the number of highly-qualified STEM educators in Iowa classrooms. He will be supported by the National Science Foundation's Noyce Scholarship through an award to IMSEP. A graduate of the U.S. Naval Academy and Western Michigan University, Hoofnagle holds B.S. and M.S.

degrees in mechanical engineering. According to Hoofnagle "one of my favorite parts in previous positions involved teaching, this has allowed me to show students how math and science are used in 'the real world'...to connect with students on their level." In the classroom, Hoofnagle hopes to incorporate virtual investigation using animation and computer graphics to really bring concepts alive for students.

### Grand Challenges in Math and Science Education to be Topic of Keynote

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Preparations are under way for the second annual Iowa Mathematics and Science Teacher Educators Summit, and IMSEP is pleased to announce that Pendred (Penny) Noyce, M.D., a Stanford medical school graduate, children's book author, trustee of the Noyce Foundation and daughter of the inventor of the microchip Robert Noyce, will be this year's keynote speaker. Dr. Noyce is a tireless advocate for quality mathematics and science education as a priceless tool for inspiring imagination, innovation and lifelong learning. As part of her keynote address she will discuss the "Grand Challenges" in mathematics and science education through her own experience in medicine, informal science and literature. In addition, Dr. Noyce will lead a breakout session centered on teaching mathematics skills through literature with examples from popular children's fiction and her new children's book, *Lost In Lexicon: An Adventure in Words and Numbers*. To register for the Teacher Educators Summit, click [here](#).

### IMSEP Part of National Science Fair

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For the first time in American history, the entire country will celebrate science and engineering in one big brainy festival next fall, and IMSEP will be there. The **USA Science and Engineering Festival**, lasting from October 10 to October 24, 2010, will culminate with a two-day Expo in the nation's capital that will give over 500 science and engineering organizations from all over the United States the opportunity to represent themselves with hands-

on, fun science activities to inspire the next generation of scientists and engineers. The IMSEP team will coordinate an exhibit on the National Mall that will feature interactive demonstrations springing from the programs *I-Teach Math & Science Teacher Recruitment Program*, *Project Lead The Way® Expansion*, *Real World Externships for Teachers of Mathematics & Science* and the *Corridor STEM Initiative*. Follow along on progress of the event and get involved yourself at <http://www.usasciencefestival.org/>.

**The 3-Day FTC Coaches Workshop** held in Iowa City recently was a big success. FTC-Iowa is well on its way to adding 35 new high school robotic teams this school year, thanks to these newly-minted teachers and mentors. For more information, go to <http://www.usfirst.org/>.

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**Why is Science Cool? Say it in Video – WIN BIG!** Do you know a K-12 student who thinks science is cool? Encourage them to enter the USA Science & Engineering Festival Kavli Science Video Contest. The winning video will be screened on the National Mall, win prize money and electronics and possibly even a trip to the Expo in Washington, D.C.! Videos are due by July 15, 2010. For more information, go to <http://www.usasciencefestival.org/2010festival/contests/kavli-science-video-contest>.

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**Class in Session: The Inaugural Class of the Iowa Teacher Intern License Pathway—Answering the Call to Teach.** A streamlined program for degreed professionals wanting to switch careers into secondary school teaching will begin August 7, 2010. The IMSEP team is excited about the potential contribution of this nontraditional route to teaching math and science and supports candidates through the NSF Robert Noyce Scholars program. Information about the program can be found at <http://www.iowateacherintern.org/>.

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For more information or to suggest story ideas, contact us at:

IMSEP • 18 CEEE • UNI  
Cedar Falls, Iowa 50614-0298  
Telephone: (319) 273-2959  
Fax: (319) 273-2779  
E-Mail: [IMSEP@uni.edu](mailto:IMSEP@uni.edu)  
[www.IowaMathScience.org](http://www.IowaMathScience.org)