

The I-TEACH Program Experience

Nathan Bradfield, a UNI freshman, arrived on campus last fall undecided as to a major, leaning toward something related to his favorite subject—mathematics. Nathan's indecision coincided with the launch of the I-TEACH Exploring Mathematics and Science Teaching Program, a recruitment project of the Iowa Mathematics & Science Education Partnership (IMSEP) intended to draw more quality and diversely representative mathematics and science majors into teaching. To get an up-close and personal view of the program, we asked Nathan to share what brought him to I-TEACH and to describe his experience with the program.



Nathan Bradfield (left) helps a Peet Junior High School student with math homework as his internship experience connected to I-TEACH.

IMSEP: Tell us about your high school mathematics preparation. What courses did you take?

NB: Throughout high school, I was in Geometry Honors, Advanced Algebra & Trigonometry and Pre-Calc Honors.

IMSEP: We hear a rumor that you're a pretty good student, to put it modestly. Tell me about your academic accomplishments.

NB: I was on the honor roll every semester of high school. Because of this, I was able to obtain the UNI Distinguished Scholars Award and the College of Natural Science Mathematics Scholarship.

IMSEP: What made you decide on UNI as your college of choice?

NB: UNI has a great mathematics department and allows me to obtain a degree in mathematics teaching. It is, by far, one of the best teaching schools.

IMSEP: What majors were you considering when you arrived at UNI?

NB: At the beginning of the year, I was trying to decide between two majors - math teaching or actuarial science. I love math so I knew whichever major I chose had to incorporate it but trying to decide between the two proved difficult. There were too many unknown variables pertaining to each field, and I wasn't positive which was for me. It's one thing to say, "I'm going to teach," or "I'm going to be an actuary," but I had no clue if I would truly be happy as a teacher or as an actuary. It wasn't until the end of my first semester that I had a larger perspective on matters. I had finally talked to enough people and was informed enough about positions that I realized I would have the most self-fulfillment as a math teacher.

IMSEP: How did you decide to get involved with the I-TEACH Mathematics and Science Teaching Program?

NB: During the first week of the fall semester a representative of the I-TEACH Program visited my calculus course, and at this time I was still debating which major I wanted to pursue. It seemed like the perfect opportunity to learn more about what it would be like to be a teacher and if it was truly what I wanted to do for the next 40 years of my life.

IMSEP: Tell us what you think of the I-TEACH components—the seminar, the internship and the scholarship.

NB: The I-TEACH seminar was very beneficial to my understanding of what it would be like to be a teacher and what it requires from the individual. Having teachers visit every week to review their experiences and answer our questions really helped us get a better idea of a teacher's life.

The internship is one of the best decisions I made all year. Not only is it an easy, nice paying job for a college student, but it has also provided me experience and a sense of fulfillment. I'm surrounded by students who turn to me to guide them in the right direction and stay on track.

IMSEP: How do you feel about teaching? If inclined, what level of teaching would you pursue and where?

NB: I want to be a secondary high school math teacher. It would be nice if I was able to stay somewhere in Iowa close to my family. At the moment, I don't have a preference in the size of school, but if I had to choose, I would want to teach at a larger school primarily because it would resemble my own high school. Every school would provide a different experience, and I believe they would all be worth dedicating a portion of my teaching career to.

IMSEP: Is there anything else we should know to help us enhance the I-TEACH Program from your perspective?

NB: I believe the program is excellently ran and very beneficial to all students who have ever considered a teaching major. I don't know how else it could be improved.

(Note: We didn't bribe Nathan to say nice things about the program. We promise!)

The Iowa Mathematics & Science Academy—Motivating Students to Succeed

For 40 young Iowans who qualify, Angela Francis instills confidence that science, technology, engineering and mathematics (STEM) fields are viable college majors and fulfilling careers upon graduation. The project is the *Iowa Mathematics & Science Academy (IMSA)*, and Angela is one of 20 awardees of IMSEP competitive grants intended to compound our impact across the state. Her project selects talented high school youth for special enrichment activities that give them a head start on college in the exciting fields of biology, chemistry, physics and more. To qualify, students must be of strong academic standing, be first generation college-bound and be from families of under-represented socio-economic and ethnic /racial backgrounds. Angela Francis is laying the ground work for future science and mathematics professionals now by generating excitement about mathematics and science in general and by motivating students to think about going on to earn advanced degrees in mathematics, science and other technology-related fields.



Participants in the IMSEP-funded Iowa Mathematics and Science Academy attended a one-day mini-medical school at the University of Iowa where they learned the latest lab techniques.

Since the project's inception last October, IMSA has drawn students from a five-county region in Northeast Iowa.

Highlights of the program thus far include:

- Students projects on STEM careers
- Conducting interviews with presenters at the Iowa Junior Science & Humanities Symposium and at the State Science and Technology Fair of Iowa
- A trip to the University of Iowa's Mini-Medical School, conducting activities related to careers in health care
- Exploring high tech procedures including PCR techniques and DNA fingerprinting at the Biotechnology Center at Iowa State University

The Academy is currently preparing for the summer component of the project. For five weeks, the group will live on the University of Northern Iowa's campus and attend college courses in chemistry, physics, statistics and college writing and research.

We are excited about the progress IMSA is making in the lives of these students and the implications for finding ways to generate interest in STEM fields as career paths. For more information about this and other projects currently funded and underway, go to <http://www.iowamathscience.org/competitivegrants.shtml>

IMSEP Grantees in the News

Recayi 'Reg' Pecan, electrical engineering technology and a recipient of an IMSEP competitive grant award, and several UNI students appeared recently on KCAN - CBS2 "This Morning." They demonstrated several "green" technology items including a solar-powered lawn mower, an energy bike and small solar electric-boat model. Pecan's solar-powered lawn mower has been also been featured on Radio Iowa and Waterloo/Cedar Falls Courier.

The Iowa Mathematics and Science Teacher Preparers' Summit

Plans are solidifying for this unprecedented event to be held August 14 at IMSEP's partner institution Grand View University. Keynote speakers of national distinction in mathematics and science education will anchor the summit of over 100 faculty from across Iowa's public and private universities who directly prepare teachers in the STEM fields. Amidst roundtables and poster sessions, facilitated discussions and featured lectures, attendees will come away with a shared vision of excellence for graduates and the shared resources to make it happen. For more information on this summit, go to <http://www.iowamathscience.org/summit/>

ConFABS Continue!

May 5 will be the fourth in a series of Conversations to Forge Alliances of Business and Schools (ConFABS). In partnership with the Grant Wood AEA, the session will begin at 7 p.m. at their headquarters in Cedar Rapids. Concurrently, a database of partnerships from across the state continues to grow at the IMSEP website. In support of these partnerships, IMSEP has awarded numerous seed grants to teachers working with local industries. For more information, go to <http://www.iowamathscience.org/symposium/>

Real World Externships for Teachers of Mathematics and Science

An alternative to painting houses over the summer, Iowa secondary mathematics and science teachers can spend the summer gaining authentic experience applying their disciplines to real world challenges within Iowa businesses and industries as "externs." They will emerge mentored by university faculty to translate these experiences into lessons and career explorations back in the classrooms in the fall. Kemin Industries, Rockwell Collins, Pella Corporation, Iowa Department of Natural Resources (DNR) and other valued partners will host teachers this summer. Interested? Send an email to IMSEP@uni.edu

IMSEP on the Horizon – Dates to Remember

- **May 5, 2009 (Tuesday)** – ConFABS Across Iowa – Grant Wood AEA - Cedar Rapids
http://www.iowamathscience.org/symposium/ConFABS_Grant_Wood_20090505.shtml
- **May 15, 2009 (Friday)** – IMSEP Advisory Council Meeting – Des Moines
- **May 21, 2009 (Thursday)** – ConFABS Across Iowa – Mississippi Bend AEA
- **August 14, 2009 (Friday)** – Iowa Mathematics & Science Teacher Preparers' Summit – Grand View University -
<http://www.iowamathscience.org/news.shtml>

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