



MidYear Indicators

(January 2010)

IOWA MATHEMATICS AND SCIENCE EDUCATION PARTNERSHIP



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IMSEP is a collaboration of Iowa's public universities in affiliation with STEM education organizations across Iowa.



IOWA MATHEMATICS AND SCIENCE EDUCATION PARTNERSHIP

STEM Education Indicators - January 2010

SCIENCE AND MATHEMATICS TEACHER RECRUITMENT

- **RECRUITMENT UP:** One hundred fifty-four (154) undergraduates have participated in the *I-Teach Math & Science Teacher Recruitment Program* since fall 2008.
- **NEW MAJORS:** Of the 68 seminar completers to date (through fall 2009) at the University of Northern Iowa (UNI) and Iowa State University (ISU), 46 are now science or mathematics teaching majors (68 percent).
- **RECRUIT QUALITY:** Two-thirds of UNI *I-Teach Math & Science* program participants graduated in the top third of their high school classes (data unavailable at community college partners).
- **UNIVERSITY OF IOWA (U of I) "4 + 1" RECRUITMENT PLAN:** Four-year content major plus MAT/teaching licensure approved for fall 2010 rollout.
- **COMMUNITY COLLEGE PARTICIPANTS:** Of the 44 community college *I-Teach Math & Science* seminar completers (through fall 2009), 24 report that they "probably" or "definitely" plan to earn a four-year degree in teaching. Tracking of these students continues.

<i>I-Teach Math & Science</i> Number of Recruitment Seminar Participants				
	UNI	ISU	North Iowa Area CC	Hawkeye CC
Fall 2008	26	Pre-partnership	9	Pre-partnership
Spring 2009	18	4	18	Pre-partnership
Fall 2009	20	Not offered	6	11
Spring 2010	8	17	5	12
TOTAL	72	21	38	23
GRAND TOTAL = 154				

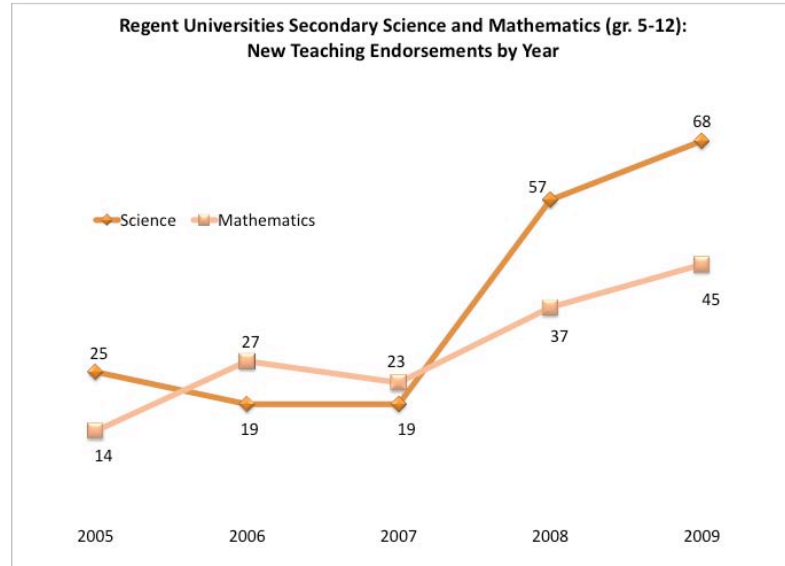
MATHEMATICS AND SCIENCE MAJORS PURSUING TEACHING

- System-Wide Science Teaching Enrollment: 2009 - 136; 2010 - 181 [+ 45]
- System-Wide Mathematics Teaching Enrollment: 2009 - 145; 2010 - 177 [+ 32]

		SPRING 2010	2009	2008	2007	2006	2005
UNI	Science	103	95	93	81	73	94
	Math	115	100	98	85	80	94
ISU	Science	47	15	17	20	26	30
	Math	32	19	14	19	23	26
U of I	Science	31	26	35	34	30	39
	Math	30	26	25	20	26	35

Sources: Registrars, BOR Enrollment Tables, Departmental Analyst

NEW SCIENCE AND MATH ENDORSEMENTS OF REGENT UNIVERSITY CANDIDATES



Source: Board of Educational Examiners

UNDERGRADUATE STEM PROGRAM MAJORS AT IOWA PUBLIC UNIVERSITIES

- OVERALL INCREASE 2008 to 2009: 1,045 (6.5%)
- INCREASE IN ENROLLMENT OF WOMEN 2008 to 2009: 394 (6.5%)
- INCREASE IN ENROLLMENT OF UNDER-REPRESENTED MINORITIES 2008 to 2009: 97 (10.3%)



Undergraduate Field (Representative Fields)	Percent Change 2008 to 2009	2009 Enrollment	2008 Enrollment	2007 Enrollment
Chemistry (general)	+ 10 %	303	275	269
Engineering (all)	+ 7 %	6,442	6,030	5,900
Mathematics	+ 18 %	544	461	458
Physics (general)	+ 8 %	167	154	146
Biology (general)	+ 1 %	1,823	1,810	1,779

Source: Board of Regents Tables: Enrollment by College, Program and Educational Level.

IMSEP PROGRAM UPDATES

Corridor STEM Initiative

- There are nine upper elementary and middle schools involved in the Corridor STEM Initiative after school programs serving over 300 students, partnering with UNI, U of I College of Engineering, the ISU Extension Service, Kirkwood Community College, the Workplace Learning Connection, the Grant Wood Area Education Association (AEA) VAST Center, The Children's Museum, The Science Station, Rockwell Collins, Alliant Energy and Grant Wood AEA

Community College STEM Instructor Preparation and Updates

- Opened at full capacity this fall (25 enrollees)
- On-line delivery model in place, using WebCT to deliver coursework

Project Lead The Way® (PLTW)

- A total of 11,188 students from 100 Iowa schools were reported to be involved in PLTW in 2009 — 7,313 at the middle school level (Gateway To Technology®) and 3,875 at the high school level

Institute Organization and Administration Feats

- A two-tiered governance and oversight structure (Executive Board and Advisory Council)
- Ground-floor design of inter-university programs from scratch
- Transparent and pin-point management of funds
- 116 subcontracts and follow-up evaluations
- Formalized reporting processes

Competitive Grants and Grants Process

- Since 2008, 36 competitive grants awarded to date
- Eligibility: university faculty. Strong incentive for inter-departmental and inter-university collaborations, as well as partnerships with education professionals in the public and private sectors
- Recruitment (e.g. physics majors teaching club), outreach (e.g. camps, after-school clubs), professional development (e.g. teacher content workshops) funded
- IMSEP Executive Board defines criteria, invites applications, appoints peer reviewers, recommends grantees and oversees evaluative reporting
- Institute subcontracts through the public universities' Offices of Sponsored Programs
- Across Iowa, 400 teachers and 2,000 students impacted by IMSEP competitive grants program

Recent Milestones

- IMSEP programs have impacted teachers and students in 88 counties and 237 towns throughout Iowa
- Faculty involvement in IMSEP from across the public universities will focus on the high priority objective to recruit diverse and talented candidates to teaching mathematics and science in FY2011
- A gallery of Iowa "STEM Gems" — locally grown talent in the fields of mathematics and science — grace inspirational posters for the science and mathematics classrooms of every teacher in the state
- Iowa's science and mathematics teacher-preparers from both private and public universities are now networked for collaborating, innovating and sharing resources
- IMSEP is a featured STEM Education Coordinator in Iowa's *Race To The Top* application
- Thirteen upper-level STEM majors or recent baccalaureate earners won National Science Foundation (NSF) scholarships through IMSEP to pursue teaching licensure
- An analysis of the market for nontraditional licensure among Iowa public university STEM alumni who have graduated over the last 25 years was conducted by IMSEP, finding more than half express an interest in teaching, coinciding with the new *Iowa Teacher Intern License Pathway*