

IOWA STATE
UNIVERSITY

DMACC
DES MOINES AREA
COMMUNITY COLLEGE



NATIONAL SCIENCE FOUNDATION
STEM Talent Expansion Program (STEP)

STEM Student Enrollment and Engagement through Connections



Joint Meeting of the ISU/DMACC Internal Advisory Boards

May 23, 2011

Grant No. 0653236, July 2007–July 2012

STEM Student Enrollment and Engagement through Connections

Agenda

Welcome and Introductions

Highlights of Recent Activities

SEEC Effect Data

- Summary
- Discussion

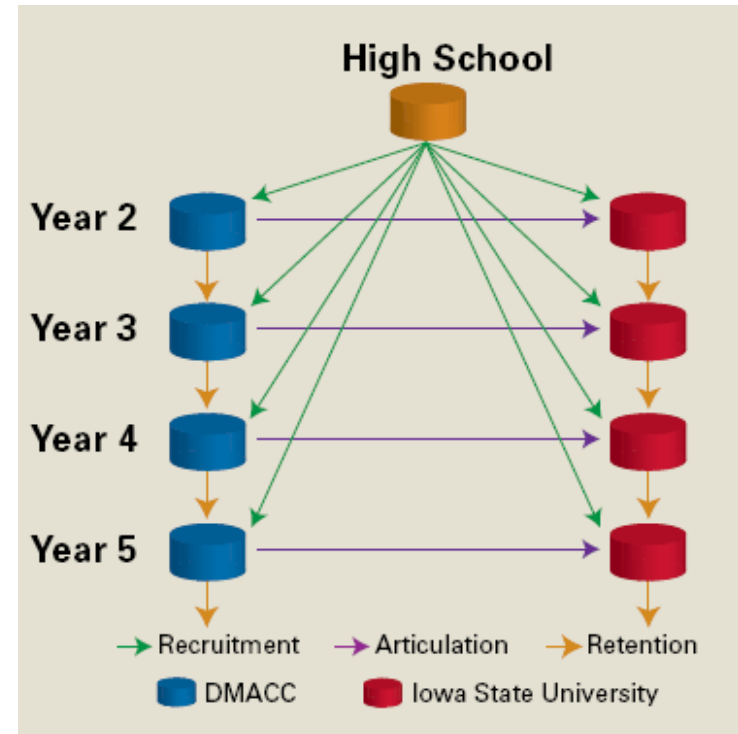
Year 5 Planning and Project Sustainability

- Activities and priorities
- Discussion

STEM Student Enrollment and Engagement through Connections

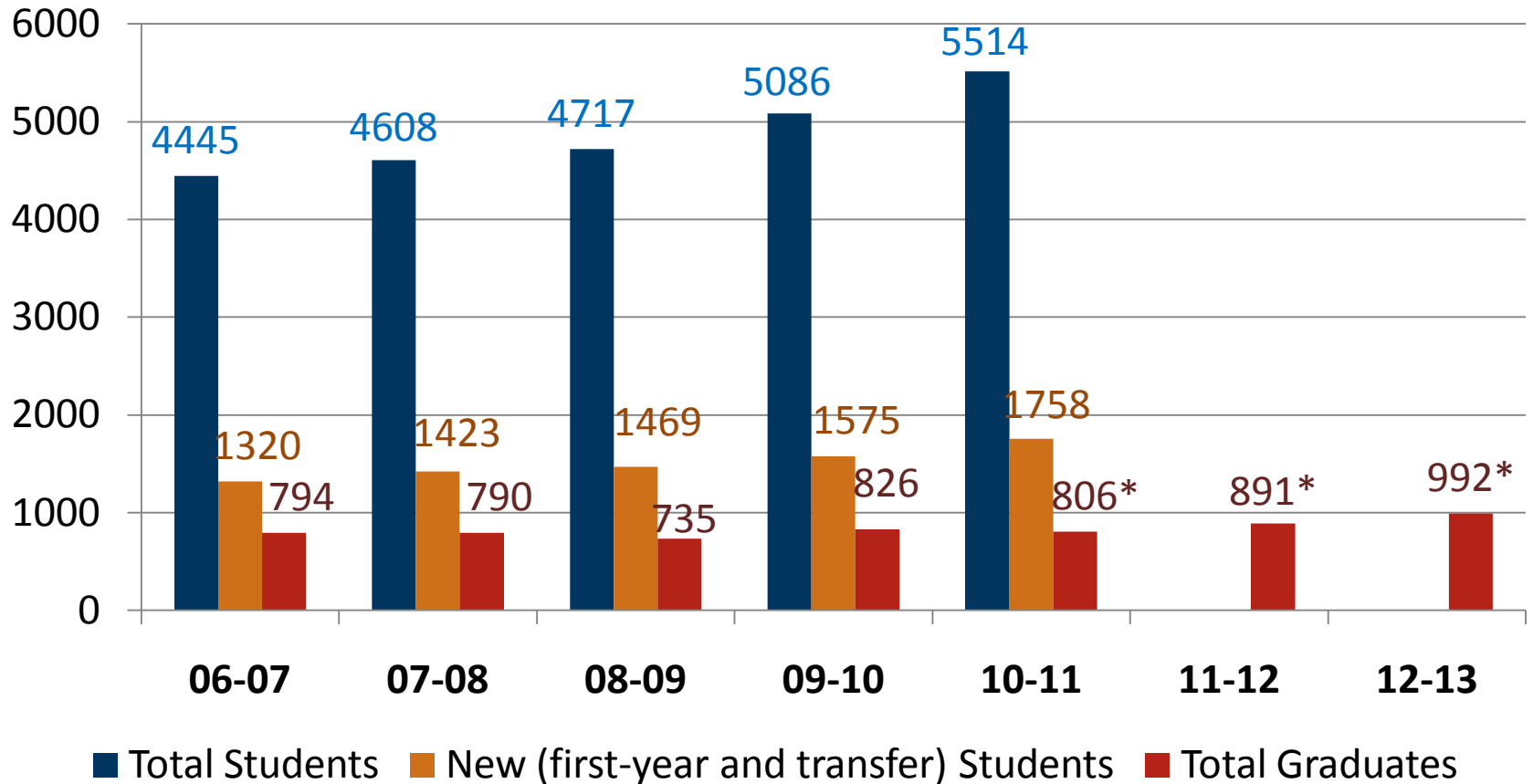
Overall Grant Goal

Increase College of Engineering graduates to 900, by approximately 100 per year. Included with this goal are increases in the number of pre-engineering students at DMACC and in the percentages of women and minority students in engineering at ISU and DMACC.



STEM Student Enrollment and Engagement through Connections

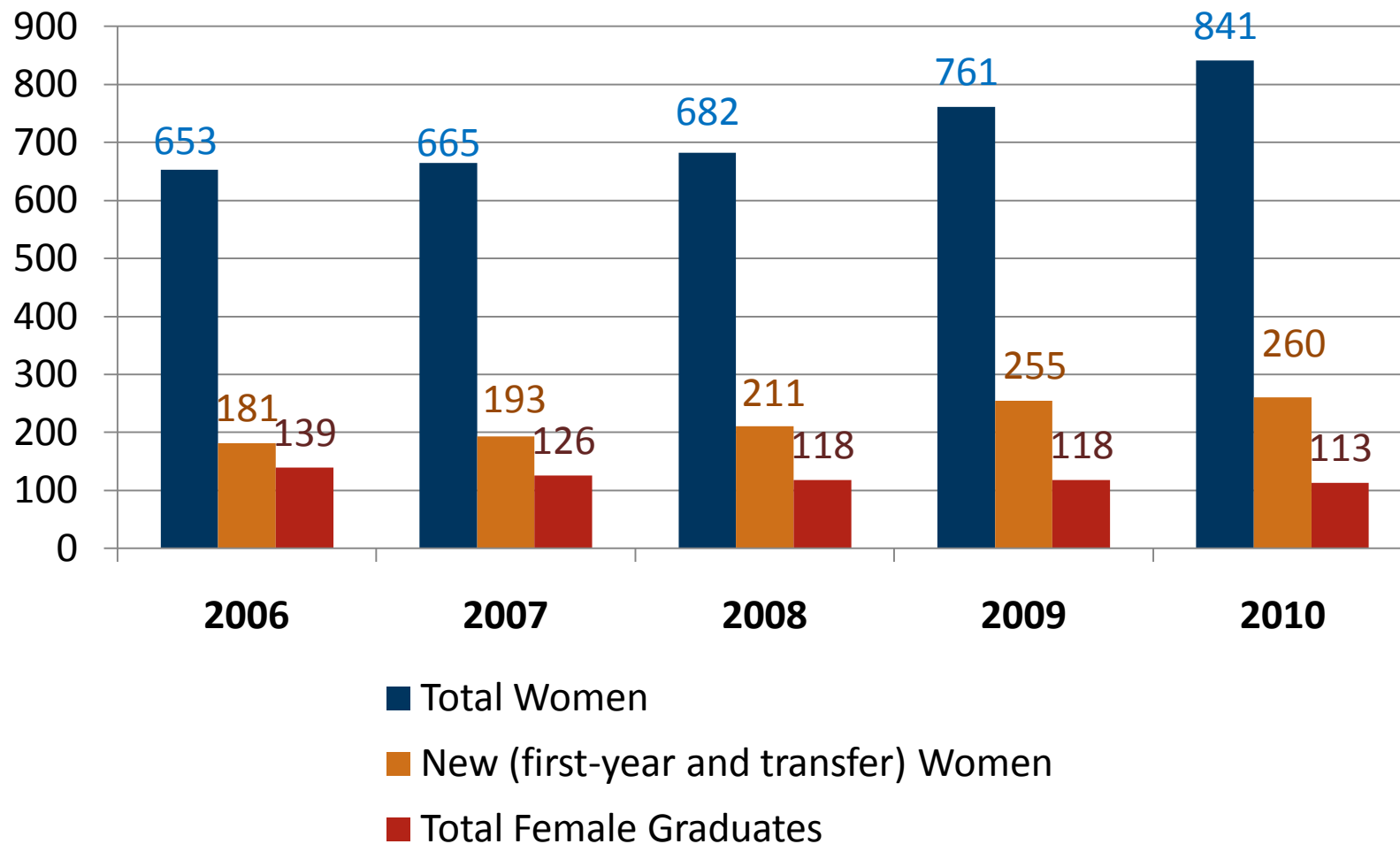
CoE Total Enrollment and Graduates



*Predicted – Based on Iowa State University Institutional Research

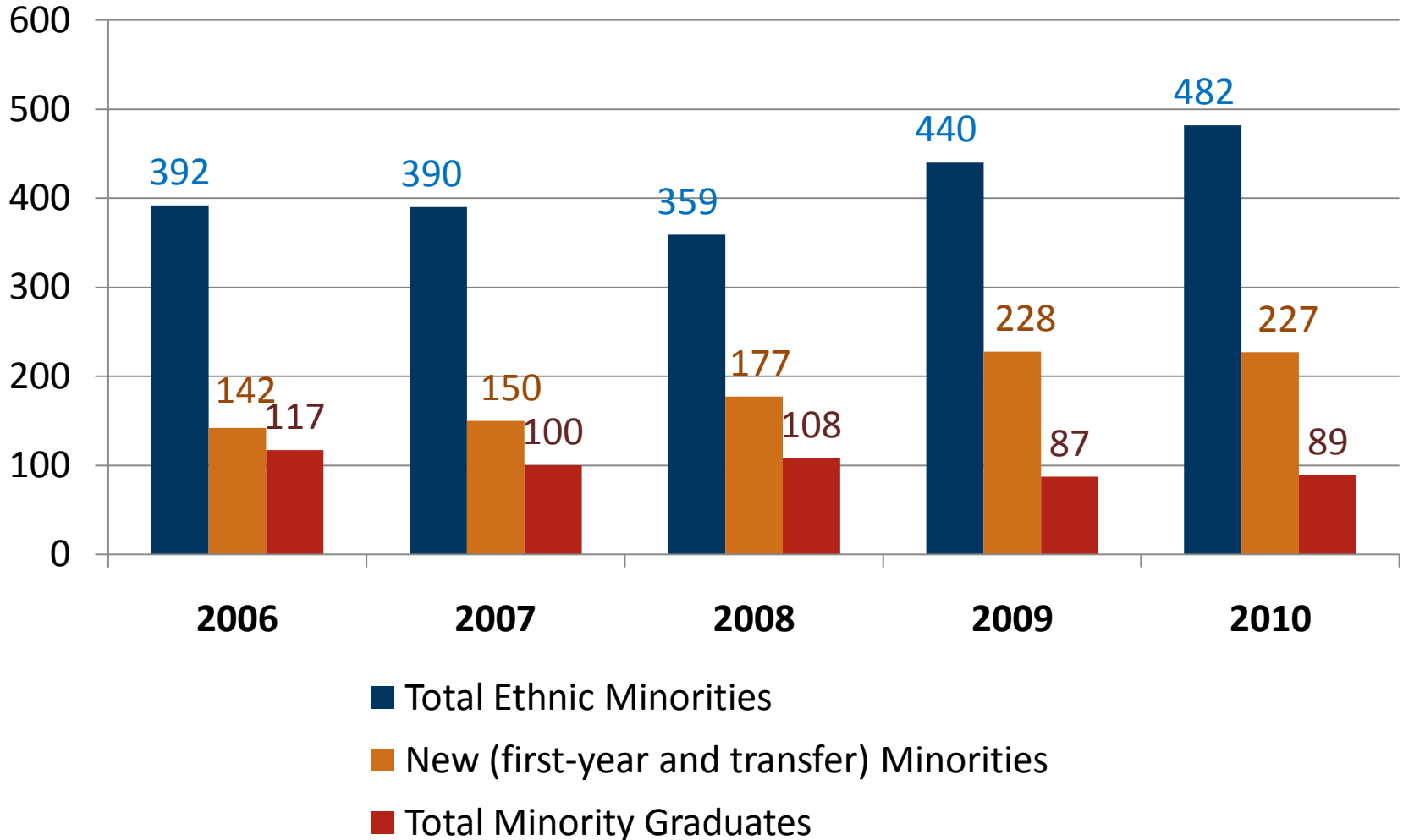
STEM Student Enrollment and Engagement through Connections

CoE Female Enrollment and Graduates



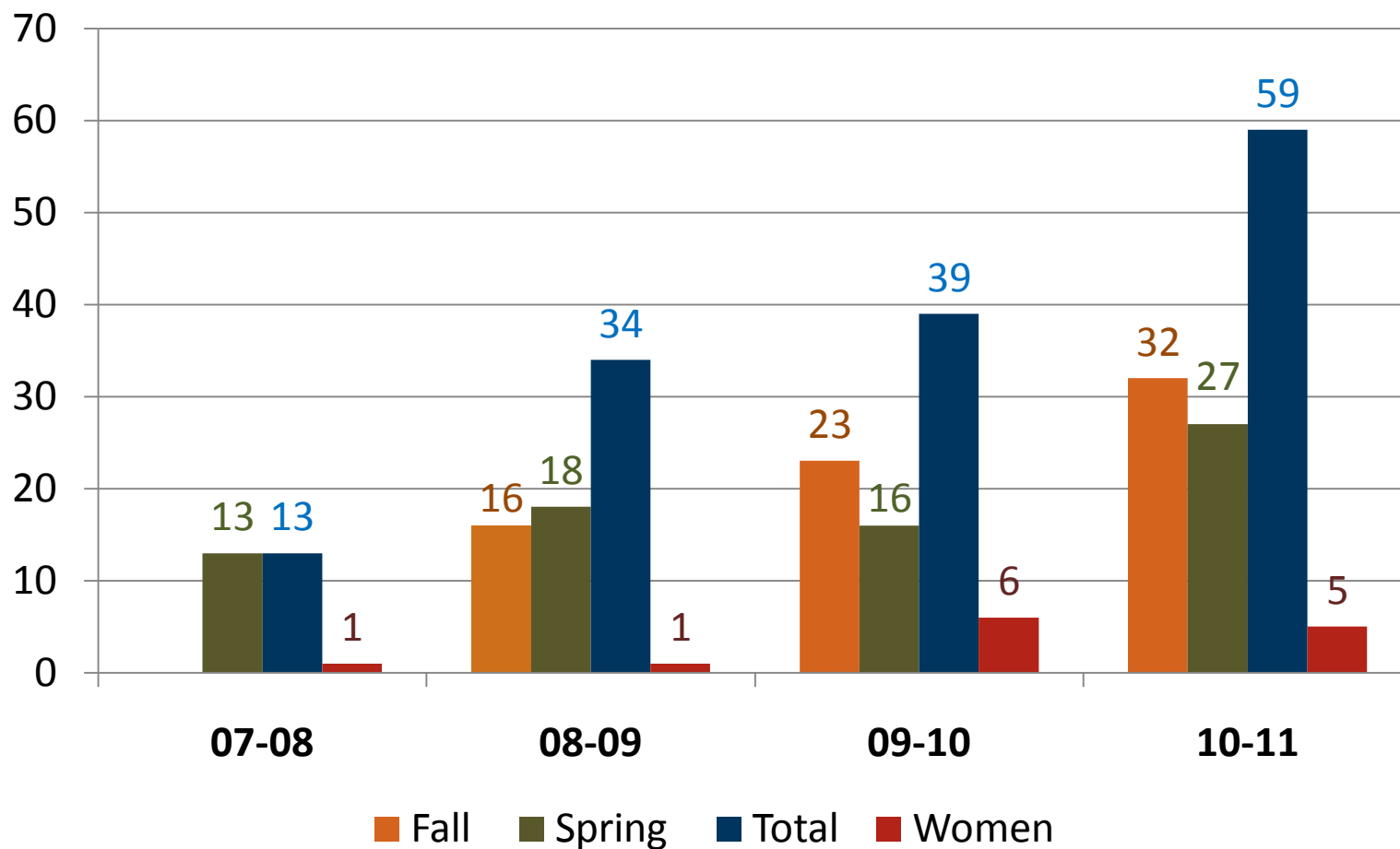
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CoE Minority Student Enrollment and Graduates



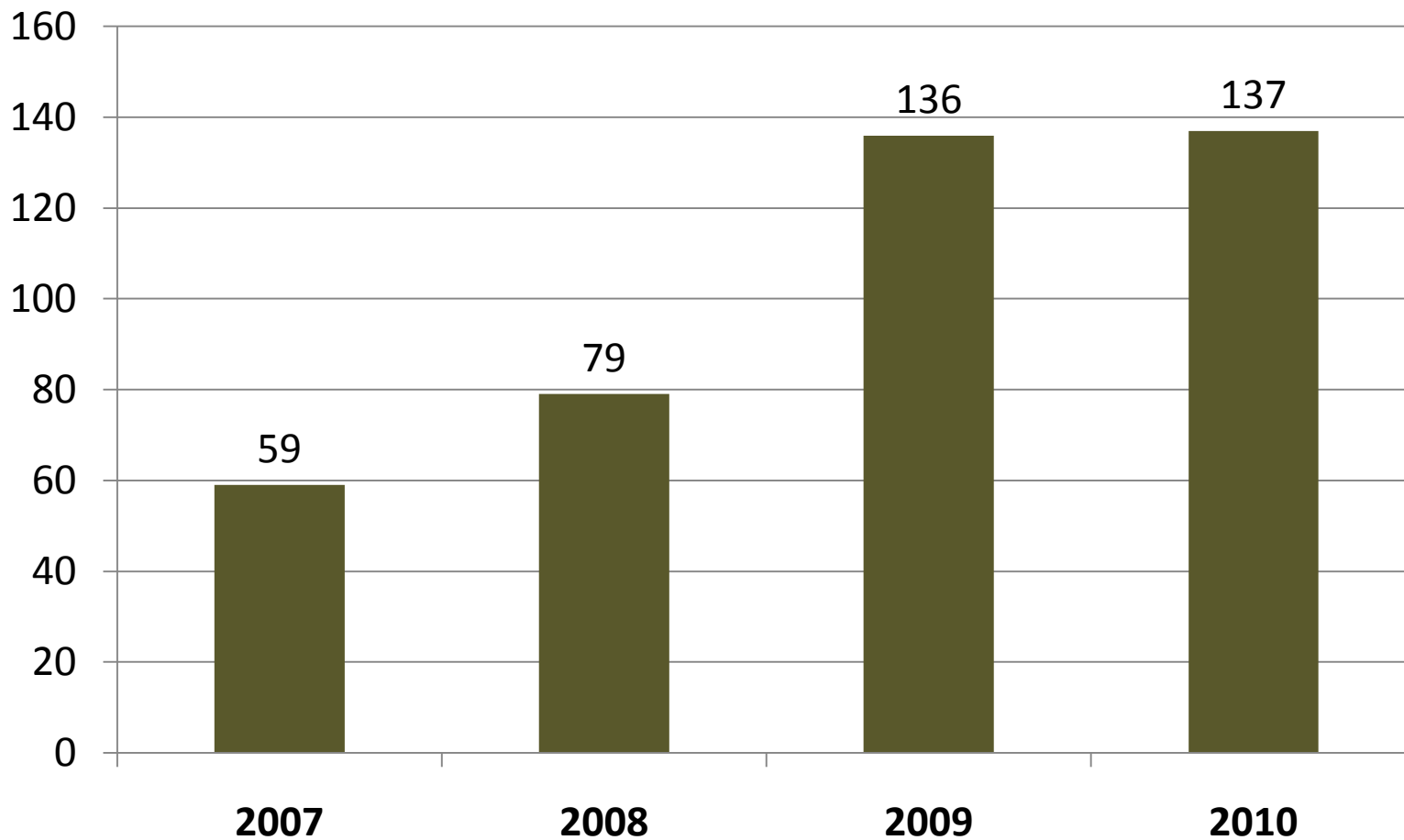
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**Enrollment in Des Moines Area Community College (DMACC)
EGR 100**



STEM Student Enrollment and Engagement through Connections

CoE E-APP Enrollment



STEM Student Enrollment and Engagement through Connections

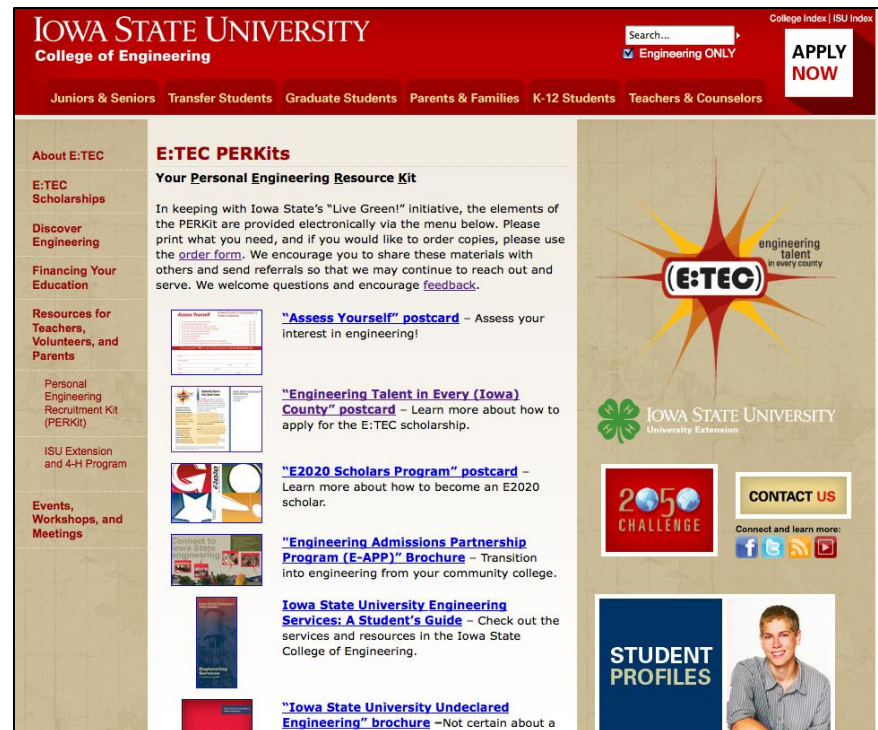
Highlights of Recent Activities

- a. CySTEM (with ISU Extension)
- b. DMACC Pre-engineering and Precollege Programs
- c. Transfer Student Data Analysis
- d. E2020 Curriculum
- e. “Changing the Conversation” about Engineering
- f. Dissemination

STEM Student Enrollment and Engagement through Connections

Public Understanding/Awareness of Engineering

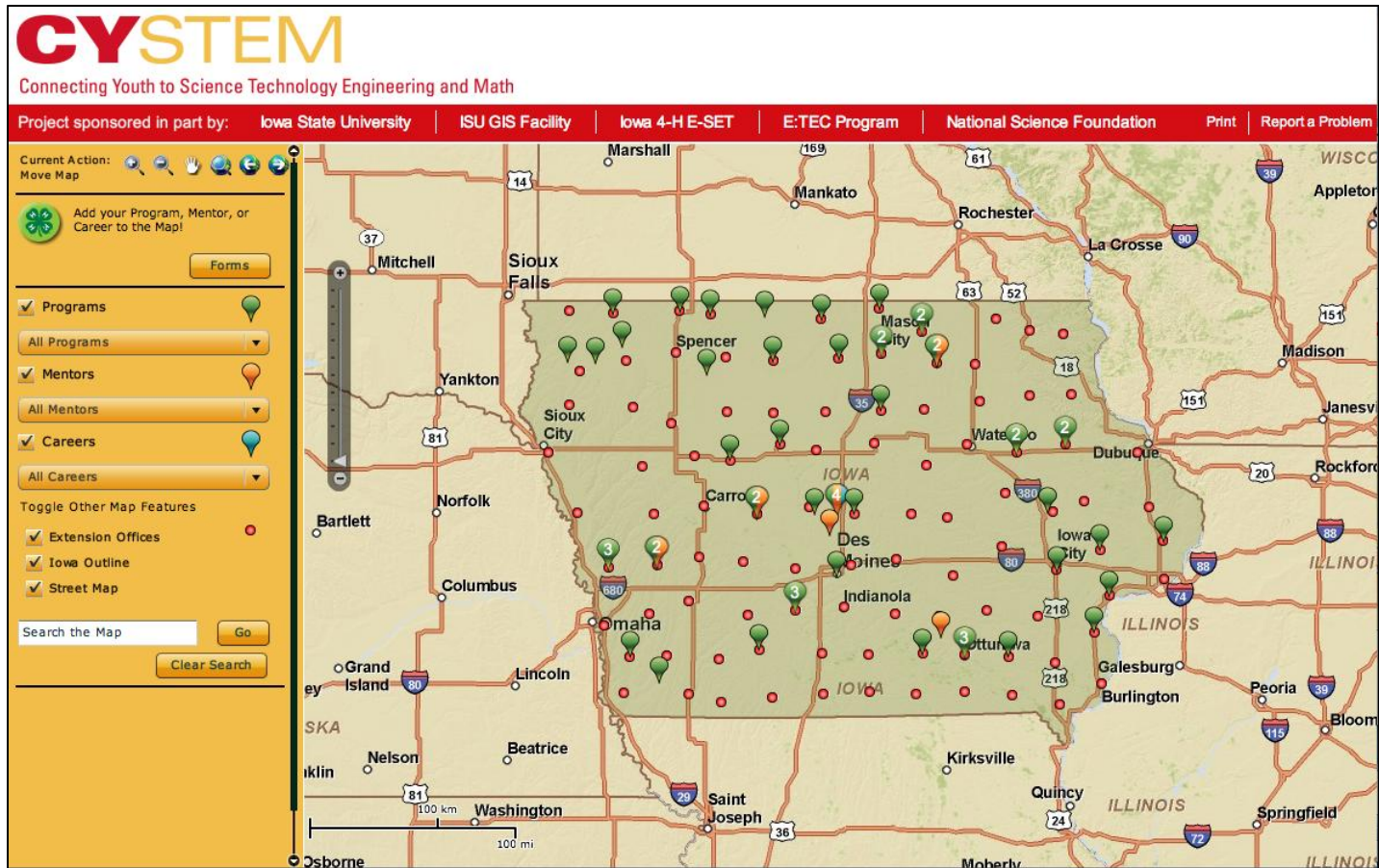
- Career awareness: CySTEM
- E:TEC scholarships
- Volunteer grants
- Resource kits



The screenshot shows the Iowa State University College of Engineering website. The main content area is titled "E:TEC PERKits" and "Your Personal Engineering Resource Kit". It features a navigation menu with links for Juniors & Seniors, Transfer Students, Graduate Students, Parents & Families, K-12 Students, and Teachers & Counselors. The page includes a search bar, a "College Index | ISU Index" link, and an "APPLY NOW" button. The main text describes the PERKits as part of Iowa State's "Live Green!" initiative, providing electronic resources and encouraging users to share materials and provide feedback. Below the text are several featured resources with thumbnail images: "Assess Yourself" postcard, "Engineering Talent in Every (Iowa) County" postcard, "E2020 Scholars Program" postcard, "Engineering Admissions Partnership Program (E-APP)" brochure, "Iowa State University Engineering Services: A Student's Guide", and "Iowa State University Undeclared Engineering" brochure. The right sidebar contains a large "E:TEC" logo, the Iowa State University University Extension logo, a "205 CHALLENGE" logo, a "CONTACT US" button with social media icons, and a "STUDENT PROFILES" section with a photo of a student.

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CySTEM: <http://ags.gis.iastate.edu/cystem>



STEM Student Enrollment and Engagement through Connections

Highlights of Recent Activities (cont'd)

- b. DMACC Pre-engineering and Precollege Programs
- c. Transfer Student Data Analysis (SEEC Data Brief)
- d. E2020 Curriculum (ASEE Conference paper, ISU-DMACC NSF TUES proposal)
- e. “Changing the Conversation” about Engineering (COE, DMACC and PWSE)
- f. Dissemination

STEM Student Enrollment and Engagement through Connections

Recent Dissemination Activities

- “SEEC Connections” newsletter, Spring 2011
- AACRAO Conference, Best Practices in Degree Partnerships, APP/E-APP, Mary Darrow and Eric Merten, January 30- February 1, 2011
- Iowa Community College-ISU Academic Leader's Roundtable, Overview of Research Activities (Larry Ebbers, Frankie Santos Laanan, Linda Serra Hagedorn), February 4, 2011
- SEEC Data Brief: Measuring the SEEC Effect: Engineering Transfer Student Retention & Success, March 2011
- NSF STEP Grantees Meeting, Workshop on Assessing your STEP Project, (Diane Rover, Frankie Santos Laanan, Steven Mickelson, Mack Shelley), March 16-18, 2011
- Student Success Summit, ISU, pres. by SEEC/E2020 team members, March 24-25, 2011
- Discover Engineering Day, DMACC Ankeny Campus, April 5, 2011
- Taking the Road Less Traveled Conferences, Introducing CYSTEM, Holly Bignall, April 14, 21 & 28, 2011
- Diversity in STEM Conference, pres. by SEEC team members, DMACC, April 22, 2011
- ASEE Annual Conference & Exposition, Vancouver, presentations by SEEC/E2020 team members, June 26-29, 2011

STEM Student Enrollment and Engagement through Connections

Transfer Student Data Collection & Analysis

- E-APP participation and retention
- DMACC's EGR 100 enrollment
- 1-,2-, and 3-year retention in engineering at ISU
- Learning communities participation and retention
- Basic Program (BP) credits, course grades, and GPA at DMACC and ISU - retention
- ISU engineering graduation and placement data for transfer students

STEM Student Enrollment and Engagement through Connections

SEEC Effect Conclusions (Work-in-Progress)

- DMACC students who participate in E-APP vs. those who do not are retained at a significantly higher level.
- DMACC students who participate in a LC at ISU are retained at a significantly higher level; multiple LC participation increases retention even more.
- The Basic Program GPA is the best indicator for retention in engineering.
- Initial findings related to courses that DMACC students should transfer are still being explored.
- Transfer GPA is the best indicator for transfer student placement success.

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Messaging and Advising to Engineering Transfer Students

- “Changing the Conversation” and related messaging
- Join E-APP/APP (www.eng.iastate.edu/transfer/app)
- Focus on the “Engineering Basic Program” while at the community college
- Use the Engineering Transfer Student Webpage (www.eng.iastate.edu/transfer)
- Use Transit (<https://transit.iastate.edu/>)
- Actions that increase retention and success in engineering:
 - E-APP – Get to know your ISU adviser and transfer peer mentors!
 - Campus visits/orientation
 - Move to campus, live in Ames
 - Join Learning Communities (the more the better!)
- GPA matters!
- Prepare for your adjustment to Iowa State’s College of Engineering
 - Take 12-15 credits your first semester at ISU
 - Get to know engineering faculty, staff, and students – reach out to them!
 - Access academic, social, and professional resources

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Action Items, Ideas, & Next Steps

- Follow-up topics include:
 - APP promotion
 - Data conversations with Boone and/or other faculty/staff
 - Cy to campus
 - Messaging and Advising “Top 10”
 - Intentional female/honors programming, messaging, and recruitment
 - Opportunities with STEM open-option/undecided students
 - Hunziker Center as a hub for pre-engineering coursework
 - Communication strategies (email, FB, Groupsite, DMACC Daily, etc.)
- Continue efforts with Dual Enrollment pop. (Discover Engineering, PLTW, etc.)
- Continue Discover Engineering event planning
- Schedule meetings for pre-engineering students at the Ankeny and Boone campuses
- Map out a deliberate strategy for ISU visits to Ankeny and Boone to connect E-APP, pre-engineering, and prospective pre-engineering students with ISU resources

STEM Student Enrollment and Engagement through Connections

Year 5 Planning and Sustainability

- Fall ISU-DMACC workshop to review data and best practices (advising, curriculum, etc.)
- Data analysis and data-driven actions/decisions
- Strategic planning and transition planning with campus partners
- Continued collaboration
 - Annual workshop between DMACC pre-engineering programs and ISU College of Engineering and BP departments
 - Regular data sharing and reporting
 - NSF proposals and mutual programming