Pathway to a Science, Technology, Engineering, and Mathematics (STEM) Degree: From Community College to Four-Year University

NSF Program: Research on Gender in Science and Engineering (GSE)

The objectives of this dissemination project are:
- to develop media presentations in the form of educational videos that illustrate the public and college students about the pathway to a STEM baccalaureate degree from two-year colleges.
- to develop a Pathway Transfer Student Guide (TSG) for prospective students attending two-year colleges that educates students about the transfer process; and
- to develop a web site that will be used to disseminate educational resources to educators to develop a web site that will be used to develop a STEM Pathway: Transfer Student Guide (TSG) for prospective students attending two-year colleges; and
- to develop media presentations in the form of educational videos that educate the public and industry, researchers, policymakers, and the public to develop media presentations in the form of educational videos that educate the public.
- Retention programs and services
- Student support services
- Career and/or academic counselors
- Transfer Center directors, coordinators, advisors

Other Community College Personnel:
Available to instructors teaching in STEM areas in community colleges
Available and disseminated during New Student Orientations and College Success courses
Available to instructors teaching in STEM areas in community colleges

EDUCATIONAL VIDEOS
- Pathway to a STEM Bachelor's Degree
  - What Is STEM?
  - STEM Fields and Careers
  - STEM Statistics: Participation, Retention, and Graduate Rates of Women and Minorities in STEM fields
- Pathway to the Baccalaureate: The Transfer Process
  - Research on Gender and Ethnicity in Science and Engineering
  - Overview of Research
  - Impact of faculty and community college environment on women and minorities’ STEM aspirations
- Recruiting and Retaining Women and Minorities in Pre-STEM Majors
  - Best Practices
  - Exemplary Programs and Practices
- Community College and University Partnerships
  - Navigating the Transfer Process
  - Preparing for a STEM Major
  - Best Practices and Exemplary Programs

www.pathway2stemdegree.org

STUDENT PROFILE HIGHLIGHT

Why did you choose to transfer to Iowa State University?
Iowa State University has always interested me. Having an interest in science, I knew very young that Iowa State was the best school for me. Having Iowa State in my hometown was an added bonus. The campus is beautiful, and I am very at home here.

What created your interest in Physics?
My interest in Physics comes from a love of Astronomy. I am a bit 'star crazy'. I thoroughly enjoy getting up in the middle of the night to watch a meteor shower. This love led me to an interest in the way things work on Earth, as well as in the universe. It is very fun to me to learn why and how things work around me and to encourage others how much fun math and science can be.

What is your advice to incoming transfer students?
As an incoming transfer student, it is very important to get connected. Meet with a counselor and visit the Pathway2stem website. The transition can be much easier if you plan ahead and have an instructor or advisor helping you along the way.

STUDENT PROFILE HIGHLIGHT

Name: Katie Walquist
Major: Physics
Hometown: Ames, IA
Extracurricular Activities and Honors: Phi Theta Kappa Member, Coca-Cola Scholarship Recipient, 2008 Distinguished Chapter Leader Award Recipient Phi Theta Kappa – Tau Phi October 2008, Boone Campus Nominee on the 2009 All-Iowa / All-Iowa Academic Team, 2009 Nominee Who’s Who Among Students In American Universities and Colleges, Oncology Camp Volunteer, Scholl Jaycees Volunteer, Volunteer at the Hub Center (a local food pantry), Parent Volunteer for Ames Impact Track, active member of my church and church choir
Community College Attended: Des Moines Area Community College

RESEARCH

“The objective of this study is to understand the influence of students’ background characteristics, high school academic performance, and attitude toward science on their self-concept. Specifically, this study addresses gender differences and the extent to which each construct influenced students’ self-concept” (p. 214).


"To achieve the objectives, the project investigators identified and then studied exemplary transfer programs that increase participation among female students in a 13-year program at a community college, provide students the opportunity to reflect on and share their academic and personal experiences; and identify factors that help female students transfer from a community college to a four-year university in engineering” (p. 39).