

Diversity in STEM Presentation Agenda DRAFT

**AM Sessions I
10:00am – 10:50 am**

Jenny Becker-Rockwell Collins	Room #	Rockwell Collins - "Introduce a Girl to Engineering"	Each year, as a part of Engineers Week, Rockwell Collins coordinates "Introduce a Girl to Engineering" for middle school students. The day is meant to publicize the need for more women in engineering, and Rockwell Collins reaches out to young women with positive messages about math and science education and engineering careers. Companies and organizations around the country participate in the day by offering conferences, tours, workshops, and presentations to girls to introduce them to the field of engineering. This session will provide participants with ideas on how businesses and schools can work together to provide this outreach opportunity to young women.
Monica Bruning- Iowa State University	Room #	Engineering Sparks and Pathways for Talented Minority Girls: FREE Project (Female Recruits Explore Engineering)	Female Recruits Explore Engineering (FREE) is a collaborative research and outreach program funded by the National Science Foundation. FREE was conducted by researchers and educators from three universities in Colorado, Iowa, and Ohio. One hundred and forty-one Latina, African-American, Native American, Asian American, and Caucasian high school girls explored engineering career possibilities in high school while a diverse research team supported and documented their exploration as the participants came to know engineering. The findings from the three year FREE project will be shared followed by discussion on the potential implications of the data.
Valarie Garr-University of Iowa Kim Johnson-Black Hawk College	Room #	Quad City Minority Partnership (QCMP) Math & Science Project Pilot: Empowering Youth to Action And Achievement	This session will introduce the Quad City Minority Partnership (QCMP) and how the organization took a grassroots, community-focused and culturally responsive approach to addressing math and science educational needs of minority students in the Iowa and Illinois-Quad Cities area. The QCMP Math & Science project is a pilot program for 11th grade Iowa and Illinois Quad City minority and first generation students to discover, explore, and experience the realm of science and mathematics in a nurturing environment. The project goal is to prepare students to enter Science, Technology, Engineering, and Mathematics (S.T.E.M.) careers and to implement team leadership and problem-solving skills. Areas of Program Enrichment: The QCMP Math and Science will focus on the areas of Computer Science, Engineering, Science (Health), and Mathematics.

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Frankie Laanan-Iowa State University Yi (Leaf) Zhang-Iowa State University	Room #	Using NSSE to Assess and Improve STEM Transfer Student Engagement and Satisfaction at a Large Research University	Building a diverse workforce in science, technology, engineering, and mathematics (STEM) is increasingly important to sustaining the productivity and economic strength of the U.S. Increasing the number of STEM workers first requires developing a larger number of qualified college graduates in relevant fields. Community colleges are not only critical to maintain access to postsecondary learning, but also are significant to create pathways to STEM education. However, transferring from a community college to a 4-year institution may bring more challenges and difficulties in the new environment. Previous literature found evidence that transfer students are more likely to encounter challenges to adjust in the new environment compared to students who never transferred (native students. This study utilized multiple cohort data (2005-2009) from the National Survey of Student Engagement (NSSE) of students enrolled at a 4-year university in the Midwest. The findings of the study provide insights to student affairs practitioners, retention officers, admissions administrators, faculty members, and students.
Courtney Jenkins-National Alliance for Partnerships in Equity	Room #	IA's leading role in the STEM Equity Pipeline Project	Iowa is a participating state in the NSF-funded STEM Equity Pipeline Project. Come to this session to learn about the project and hear about Iowa's leadership role. Explore how to use a data-based decision-making model to recruit and retain special populations in your career and technical education programs. Walk away with resources and strategies to share with your colleagues.
Barbara Krieg-Hawkeye Community College	Room #	Are you Man Enough to be a Nurse? The Road Less Traveled	Women and men enjoy more freedom to make career decisions than ever before, unfortunately the genders are still largely concentrated in gender-specific professions such as nursing. That traditional image of a nurse has persisted and may be a major barrier for a male to enter the nursing profession. This study explored the phenomenon of why men choose nursing as a career. This insight will help to inform and guide recruitment and retention efforts focusing on men considering a nontraditional career such as nursing, and may change the stereotype involving male nurses. It is hoped that the role of the high school counselor, in the recruitment of male students into the nursing profession, will be recognized and stressed.

AM Sessions II
11:00am – 11:50 am

<p>Dimitra Jackson-Iowa State University Frankie Laanan-Iowa State University Carlos Lopez-Iowa State University</p>	<p align="center">Room #</p>	<p>Student Success in STEM: Examining the Academic and Social Adjustment of Community College Transfer Students</p>	<p>Community colleges have been identified as playing an essential role in Science, Technology, Engineering and Mathematics (STEM) education and preparation. The Transfer Student Questionnaire was used to collect data concerning the background characteristics, and community college and university experiences of transfer students. The results suggested that the background characteristics, community college experiences, as well as university experiences impacted the academic and social adjustment of community college transfer students. Qualitative interviews focused on five female community college transfer students and highlighted the role of parents, faculty and community colleges and universities in the academic and social adjustment of community college transfer students in STEM majors. Examining the community college and university environments in which students are socialized in is essential in improving the representation of individuals in STEM areas.</p>
<p>Patricia Higby- University of Northern Iowa Sara Larkin- Iowa Statewide Vision Services</p>	<p align="center">Room #</p>	<p>Enlightening the Visually Handicapped about Energy and Access to STEM for students who are visually impaired.</p>	<p>Discover how we adapted our FREE (Fabulous Resources for Energy Education) materials to meet the needs of the visually impaired for a workshop at the Iowa School for the Blind. We'll share what did and didn't work as we used the inquiry method to teach about wind and solar energy, energy efficiency, and solar cooking. Learn how you can borrow our Braille games, stories, and songs to use with your visually impaired students. In addition, this session would include a focus on tools and materials to make math and science accessible to students who are visually impaired. It will also include instructional strategies to keep in mind when working with these students and demonstration of how these materials can be used in lessons to increase understanding of concepts.</p>
<p>Randy Mead-Des Moines Area CC Michael Lentsch-Des Moines Area CC Dave Kissinger</p>	<p align="center">Room #</p>	<p>STEM Activities at DMACC--High School and College</p>	<p>A discussion will take place of how DMACC has recently targeted under-represented students in the area of engineering. This has been an emphasis at the high school level and also the college level. We have partnered with ISU and numerous businesses to make this relevant for students.</p>

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<p>Diane Rover – Iowa State University Mickelson Steven - Iowa State University Shelley Mack – Iowa State University Harry McMacken- Des Moines Area CC</p>	<p>Room #</p>	<p>STEM Student Enrollment and Engagement through Connections (SEEC): Strategies to increase transfer students in engineering</p>	<p>This session will discuss the National Science Foundation (NSF) funded project called "STEM Student Enrollment and Engagement through Connections (SEEC)" collaboration between Des Moines Area Community College (DMACC) and Iowa State University College of Engineering. The session will discuss the following: *objectives of the collaboration goals; *logic model and evaluation strategies; *transfer student data including enrollment, retention, success outcomes; and *implications for increasing women and underrepresented minority students in engineering</p>
<p>Jeff Weld-Iowa Mathematics & Science Education Partnership</p>	<p>Room #</p>	<p>Diversifying the STEM teacher pipeline in Iowa: programs of the Iowa Mathematics & Science Education Partnership</p>	<p>Since its inception in 2008, the Iowa Mathematics & Science Education Partnership has strived to build conduits for diversifying the science and mathematics teacher pipeline for Iowa schools. In light of the fact that Iowa's teacher force is only a fraction as ethnically and racially diverse as its student population, as well as the well-documented condition of under-representation of students of ethnic and racial diversity in STEM majors and fields, resolute actions are needed now. Programs including Iowa Teach Math & Science, the Robert Noyce Scholarships, and a host of enrichment projects across the state supported by the IMSEP take up the challenge of diversifying the STEM pipeline in a variety of ways. This session shares those programs and invites participation.</p>
<p>Anthony Williams-Omaha Public Schools</p>	<p>Room #</p>	<p>An Effort to Increase Minority Representation in the STEM Fields at Omaha North High Magnet School</p>	<p>This presentation will focus on an effort to increase participation of under-represented students in science, technology, engineering, and mathematics fields at Omaha North High. Through the use of a structured and disciplined approach, an engineering/mentoring program has flourished at the school. The program, in only its third year, is on track to help increase the number of under-represented students who choose to pursue technical degrees at the post-secondary level to fifteen students from the high school.</p>

**PM Roundtables
1:45pm – 3:00pm**

Comfort Akwaji-Anderson-Iowa State University	Roundtable #1	Preparing Iowa's Pre-service Teachers for Diverse Learners and Classrooms	Research has indicated that teacher quality and preparation are two of the most significant factors in student performance. This session will create more awareness of the challenges and need for developing pre-service teachers capacity for equitable teaching and reachable instruction for ALL students, and engage conference participants in brainstorming and analyzing viable alternatives for preparation of pre-service teachers to meet the diverse needs of students for success in STEM.
Mary Darrow-Iowa State University Carol Heaverlo-Iowa State University	Roundtable #2	Changing the Conversation: Messages for Improving Public Understanding of Engineering	Media and messaging have a profound effect on students' perceptions about STEM majors and engineering careers. K-16 teachers and students generally have a poor understanding of what engineers do and mass media often hinders our messaging efforts aimed at inspiring young people to become engineers. Changing the Conversation: Messages for Improving Public Understanding of Engineering is the product of a two-year project by the National Academy of Engineering (NAE). Iowa State University's College of Engineering has developed marketing, recruitment, and outreach strategies to address the recommendations put forth by the NAE with the goal of crafting messaging that resonates with female and underrepresented minority student populations. The Changing the Conversation project was the first-ever effort to use market research techniques to try to improve the public image of the engineering profession.
Courtney Jenkins National Alliance for Partnerships in Equity	Roundtable #3	Policy Issues and STEM Education in Iowa	IowaSTEM.org is a broad-based coalition (education, government, and industry) that advocates for STEM policy and legislation. Join the conversation – how can we strengthen the coalition and broaden grassroots and formal support for equity and diversity in STEM? We'll discuss both national and state legislation.

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<p>Denise Rathman-Iowa Innovation Gateway Kim Didier-Iowa Innovation Gateway</p>	<p>Roundtable #4</p>	<p>Attracting Without Pigeon-holing Diverse Populations to Manufacturing Careers</p>	<p>The National Association of Manufacturers (NAM) and its associated foundation, The Manufacturing Institute, have chosen Iowa to be one of the first states to deploy the NAM-Endorsed Skills Certification System (NAM SCS). The Iowa Innovation Gateway (IIG), in partnership with the Iowa Association of Business and Industry, has been charged with pulling together a broad range of stakeholders to ensure that the NAM SCS is implemented across the state in a manner that will serve both students and employers well. This session will provide participants with an overview of the NAM SCS. Participants will then have the opportunity to brainstorm with the implementation team on how to best collaborate with a variety of stakeholders - educators, students, parents, policymakers - to ensure that all students are aware of the intersection between career, educational, and certification pathways for careers in STEM, and particularly careers in manufacturing.</p>
<p>Anthony Williams-Omaha Public Schools</p>	<p>Roundtable #5</p>	<p>Multiculturalism, Inclusion, and Mentoring Strategies for Minority Students in STEM Programming</p>	<p>The areas of recruitment and retention, transitional experiences, and issues of campus climate all play important roles in the retention of underrepresented students in STEM programming. By reducing feelings of isolation, improving advising services, establishing peer mentoring programs, and developing a system to track students - underrepresented students are more likely to be retained and successful in STEM areas. This roundtable will focus on the educational experiences of minority STEM faculty and professionals and the positive supports and mentors that impacted their educational journey. Discussion will include incorporating multiculturalism in STEM programs and how all educators can develop constructive relationships with diverse students, despite cultural differences, in order to enhance the pipeline of potential students at the secondary and postsecondary levels.</p>
<p>Nancy Woods-Des Area Community College Lora Leigh Chrystal-Iowa State University</p>	<p>Roundtable #6</p>	<p>Student Academic Success and Retention in STEM</p>	<p>Join us for a lively round-table discussion focused on student academic success and retention in STEM in higher education. Facilitators represent both community college and four-year school perspectives.</p>