

CAREERS CONFERENCE/CAREER CLUSTER WORKSHOP (DRAFT: 12-17-09)

CLUSTER: Science, Technology, Engineering, & Math (STEM)

Monday, January 25, 2010

1 pm - 5 pm

Concourse Hotel and Governor's Club

1 West Dayton Street, Madison

It's not news that many students arrive at postsecondary institutions lacking the background needed to succeed in the types of jobs available in today's global economy. What curriculum and content lead to well-prepared students? How can we strengthen the connections between high school and postsecondary institutions so that students have the academic background and knowledge needed for 21st Century careers? This workshop will engage participants in exploration of the content in two key career clusters for the purpose of equipping them to better counsel and advise students considering this cluster, and to support secondary STEM instructional programs and co-curricular activities.

Presenters will provide varied perspectives on ways to update curriculum for programs of study, including academics, applied learning, internships, and other approaches. Counselors, teachers, and administrators from high school and postsecondary institutions will learn about mapping appropriate pathways to prepare students for school and workplace success. Groups or teams from a school or district are encouraged to attend together. Participants choose to focus on one of three career clusters. Presenters include a panel of postsecondary level faculty and instructors, outreach staff, and community/professional representatives.

- Goals:
1. Provide a non-technical overview of the cluster, pathway, and instructional and career development strategies.
 2. Consider cluster-specific trends, developments, and recent research findings.
 3. Identify current practices and advanced models for developing programs of study, dual-credit arrangements, and pre-college programs.
 4. Identify successful practices for developing K-16 partnerships.

Workshop Overview

1:00 pm

Steve Cramer, Associate Dean, College of Engineering,

UW-Madison (invited)

Van Walling, Executive Director, Scientists and Engineers
of Milwaukee (invited)

A National Perspective

*Engineering in K-12 Education: Understanding the Status
and Improving the Prospects*

Implications/Recommendations for Career Development

A 2009 Report from the National Academy of Engineering

Alan G. Gomez

NAE Committee Member

STEM Cluster Overview
1:45-2:45 pm

Brent Kindred, DPI
Technology and Engineering Education Consultant
James Mackey, WTCS
Education Director - Manufacturing Engineering

The States' Career Cluster Project
An Overview of the STEM Cluster:

The 15 Critical Components of Cluster Implementation
Career Development
Discussion of other components

Essential Knowledge and Skills
Cluster Knowledge and Skill Chart

The Pathways:

Engineering and Technology: Knowledge and Skill Chart
Science and Mathematics: Knowledge and Skill Chart

Programs/Plans of Study

Student Organizations: SkillsUSA, Science Olympiad

Program Articulation and Transfer Agreements

Industry Certificates, Credentials and Assessments

Industry and Professional Association Websites

BREAK

STEM Postsecondary
Partner Perspectives
3:00—4:00 pm

UW Madison, College of Engineering

K-12 Engineering Outreach
Programs

Manuela Romero, Assistant Dean

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Integrated Engineering 160

John Murphy, Professor of Engineering Physics (*invited*)
Teaching and learning experience in an introductory course

The Engineering Grand
Challenges: Engineering
Literacy

Susan Hagness, Professor of Biomedical Engineering
Amy Wendt, Professor of Electrical and Computer
Engineering (*invited*)

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**STEM Postsecondary
Partner Perspectives
4:00 – 5:00 pm**

Madison Area Technical College

Center for Agriscience
& Technologies

Dean: David Shonkwiler
Associate Dean: John Stransky

Model Partnerships and Programs of Study
Key Components
Design and Implementation Challenges
Measures of Program and Impact
Unanticipated Outcomes

School District A: to be named
School District B: to be named

Transfer Partnerships
MATC-Milwaukee School of Engineering
MATC-UW Madison, College of Engineering
