2011 ABET Annual Conference
Innovation in Student Engagement:
Pathways to Engaging Underrepresented Populations

October 27, 2011
Saundra Johnson Austin
Senior Vice President for Operations
What Is NACME?

Our Mission
To insure American competitiveness in a flat world by leading and supporting the national effort to expand U.S. capability through increasing the number of successful African American, American Indian, and Latino women and men in science, technology, engineering and mathematics (STEM) education and careers.

Our Vision
An engineering workforce that looks like America.

Our Goal
Working with our partners to produce an engineering graduating class that looks like America.
NACME’s Goal:
An Engineering Workforce that Looks Like America

Engineering Bachelor’s Degrees, 2009
(n = 69,902, excl. foreign students)

- Amerindian/Alaska Indian: 0.5%
- Asian American: 12%
- African American: 5%
- Latino: 8%
- All other: 75%

U.S. Population, 2009
(n = 310,233,000)

- Amerindian/Alaska Indian: 1%
- Asian American: 5%
- African American: 12%
- Latino: 16%
- All other: 66%

Source: ASEE, 2010
Source: U.S. Census Bureau
U.S. Population by Race and Ethnicity

NACME Footprint as of September 2011

Partner Universities (50)

Academies of Engineering (59)

Sloan Ph.D. Program & Indigenous Graduate Partnership Program (56)

Community College Partners (4)

NACME STEM Urban Initiative Sites (2)
Pre-Engineering Awareness Materials

1. **Engineers Help Shape the Future**
   - Parents: Engineering can help your children realize their dreams and provide for their future.

2. **Life Takes Engineering**
   - Help shape tomorrow's engineers.

3. **The NACME Guide to Engineering Colleges**
   - 3rd Edition

The Princeton Review

NACME
National Action Council for Minorities in Engineering, Inc.
Academy of Engineering Strategy

- Established partnership with National Academy Foundation (NAF) and Project Lead The Way (PLTW) to open 110 Academies of Engineering (AOE) by 2012

- The Academy of Engineering mission is to prepare a more diverse group of students to meet national college readiness and national learning standards for engineering education at the college and university level and for engineering-related careers

- Small-learning communities focused on engineering education and college readiness

- Academy of Engineering timeline:
  - 2008 – 2009: 13 Academies
  - 2009 – 2010: 17 Academies
  - 2010 – 2011: Recalibration Year
  - 2011 – 2012: 29 Academies
  - 2012 – 2013: 51 Academies
Pilot Site: Milwaukee Public Schools, Wisconsin

- NACME Pre-Engineering resources enhance engineering curriculum
- Local liaisons, at district and school-level, enable a robust research model
- Milwaukee Public Schools (MPS) has one of the nation’s largest implementations of PLTW with over 5,100 students in 27 middle and high schools, 87 percent URM
- Since 2009 NACME has reached more than 3,100 MPS students, over 46 percent females
- Over 1,000+ magazines, guides, posters and brochures for parents, educators and students share
- Corporate partner representation on district-wide advisory board

“The NACME STEM Urban Initiative partnership with NACME has been a vital part of Milwaukee Public Schools ability to bring our students one step – no two steps – closer to their dreams.”

– Lauren Baker, Coordinator Career and Technical Education, Milwaukee Public Schools

The NACME STEM Urban Initiative is expanding to California in September 2011 (Chevron Corporation Grant)
Community Colleges Increased Importance: NACME’s Response

• Pipeline Partnership for The Advancement of Engineering Education
  • Since 2008, 141 high school students received more than 1,000 STEM college credits
  • Added new site – City College of San Francisco

• Beyond the Dream: From Developmental Mathematics to Engineering Careers
  • Presented at the 2011 Achieving the Dream: Community Colleges Count Strategy Institute

• Transfer Scholarships to 102 Students Totaling $197,770
50 NACME Partner Institutions

As of January 2011

- West
  - California State – LA
  - California State – Sac.
  - University of Alaska
  - U of Colorado– Boulder
  - U of Washington
  - U of California–San Diego
  - U of Southern California

- Midwest

- Northeast
  - Bucknell U
  - Cornell U
  - City College of NY
  - Drexel U
  - Fairfield U
  - Morgan State U
  - NJIT
  - RIT
  - Polytechnic Inst. of NYU
  - Stevens Institute
  - Syracuse U
  - U of Bridgeport
  - U of Maryland, Baltimore Co.
  - U of Maryland, College Park

- Southwest
  - Northern Arizona
  - Prairie View A&M
  - U of Texas– El Paso
  - U of Texas–San Antonio
  - U of Houston

- Southeast
  - U of Central Florida
  - Florida A&M U
  - Florida Int’l U
  - Georgia Tech
  - Louisiana St. U
  - NC A&T U
  - Polytechnic U of Puerto Rico
  - Tennessee Tech U
  - Tuskegee U
  - U of Arkansas
  - U of Kentucky
  - Virginia Tech
  - West Virginia U
In 2009, 31 Percent of URM BS Recipients Graduated from NACME Partner Universities

**Engineering Bachelor's Degrees, 2009**

- **American Indian**
  - NACME Affiliates: 41
  - NACME Block Grant: 262
  - Non-NACME Partners: 44

- **African American**
  - NACME Affiliates: 344
  - NACME Block Grant: 722
  - Non-NACME Partners: 2030

- **Latino**
  - NACME Affiliates: 583
  - NACME Block Grant: 1060
  - Non-NACME Partners: 3934

**Population: 9,020** (American Indians: 347; African Americans: 3,096; Latino: 5,577)

Source: NACME Research, Evaluation, and Policy analysis of Integrated Postsecondary Education Data System (IPEDS) degree data accessed via the National Science Foundation WebCASPAR database system, March, 2011
Race / Ethnicity of BS Engineering Recipients, 2009

Non-NACME Partners (53,357 BS degrees in 2009)
- American Indian: 4%
- Latino: 7%
- African American: 5%
- U.S. Non-URM: 83%
- Foreign: 1%

NACME Block Grant (10,652 BS degrees in 2009)
- American Indian: 0%
- Latino: 10%
- African American: 8%
- U.S. Non-URM: 75%
- Foreign: 7%

NACME Affiliates (6,591 BS degrees in 2009)
- American Indian: 5%
- Latino: 9%
- African American: 6%
- U.S. Non-URM: 79%
- Foreign: 1%

Population: 70,600
Alfred P. Sloan Minority PhD Graduate Program

2,027 Total Sloan Scholars (including baseline and graduated), 1995-2010
Source: NACME, September 2010

563 PhD Graduates (MPHD and Baseline)
Source: NACME, September 2010
Alfred P. Sloan Indigenous Graduate Partnership Program

- 143 students supported since 2003
- 28% program growth, 2003-2010
  - 71 (53%) Male
  - 63 (47%) Female
- PH.D. Component (41)
  - 30 Current Students
  - 4 Withdrawn
  - 7 Graduates
- Masters Component (92)
  - 56 Current Students
  - 3 Withdrawn
  - 33 Graduates

Monica Yellowhair, University of Arizona Sloan Indigenous Graduate Partnership Ph.D scholarship recipient
NACME Research Publications

• The 2011 Data Book was released at the NACME National Symposium, October 18-20, St. Paul, MN

• Annual Graduating Senior Survey Report

• Research Briefs
Capitol Hill Briefing

NACME Released the following reports:

• Confronting the “New American Dilemma

• Community College Transfer Study
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National Action Council for Minorities in Engineering, Inc.

Q & A

Creating Opportunities, Ensuring Success