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4-23-1998

# The Recruitment of High School Minority Students into Engineering, Math, Science and Technology Futures on Predominantly White Campuses

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Thompson, Franklin Titus III; Sires, Tome; and Batt, Carol, "The Recruitment of High School Minority Students into Engineering, Math, Science and Technology Futures on Predominantly White Campuses" (1998). *Third Annual National Conference (1998)*. 27. <https://digitalcommons.unl.edu/pocpwi3/27>

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# **The Recruitment of High School Minority Students into Engineering, Math, Science and Technology Futures on Predominantly White Campuses**

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**“This session is for college administrators who wish to make traditionally elitist program more inclusive. Its is also helpful to community and school district personnel who wish to investigate how to set up a similar program in their community.”**

The need for increased numbers of minorities in advanced fields of study is well documented. Although the situation is improving, colleges and business nonetheless find themselves calling for greater representation. Many inner-city and minority youth are overlooked due to a perception that the potential to succeed does not exist in certain neighborhoods.

Quite the contrary, research has shown that minority and disadvantaged kids in tougher neighborhoods do possess the aptitude for advance careers in math, science, engineering and technology. Whether or not those students are properly cultivated is another topic, however. We believe it is the duty of both policy makers and educators of today to identify qualified minority youth to be leaders of tomorrow.

Some of the things that account for low academic achievement by children of color include low expectation of students by teachers, uncritical pedagogy which promotes rote learning, teacher assignment policies, various street cultures and peer pressure, so-called "learned helplessness," poverty, lack of substantial reading material in the home, poor study habits, an over reliance on style, emotion and sports and a lack of minority role models just to mention a few factors.

Some researchers (Levine & Havighurst, 1992) have called for universities and businesses to get involved in efforts to help solve the problem. Collaborative efforts between public schools, universities, businesses, community agencies and parents, commonly referred to as "ecological intervention" by the literature, have shown great progress in stemming the tide of academic disadvantage. These partnerships have traditionally taken on one of two missions: (1) providing remediation for slow learners, and (2) the recruitment and training of future leaders among minority populations.

The Minorities in Engineering, Science and Advance Studies (MESA) Program of the University of Nebraska-Lincoln and the University of Nebraska at Omaha is dedicated to

the partnership which aims to identify, train and develop minority students who would not normally think of entering careers that require advanced studies. In fulfilling this goal, the program gets at one of the needs identified by the research: the need for leadership and role models in minority communities.

The MESA Program was first established in 1976 to recruit minority students into the University of Nebraska's Engineering Program. In 1988, the University joined the national organization and began sponsoring high school activities for minority students. In 1993, the program expanded beyond its limited scope of only serving students from Omaha and Lincoln. Today, students from all over Nebraska, including Gering, Scottsbluff, North Platte, Kearney and Hastings are able to take part in the program. Qualified students can enroll into the program regardless of the college they chose to attend.

This workshop is broken down into four parts. The first section is an overview of the literature. The second part will deal with setting up the program and what it takes to get businesses, schools and universities to back such an effort. Funding issues, costs and administrative structure will be explored in this segment. The third portion deals with the junior high and high school day-to-day administration of such a program, as well as the partnership the school district establishes with the local university. Recruitment of students will be a major emphasis in this segment.

The fourth and last portion of the presentation deals with describing a week-long summer training session that selected minority leaders of the program experience each summer. At this summer camp, students are given hands-on experience with engineering, science, technology, computers and upper-level mathematics. They are also schooled in leadership skills, communication skills and multicultural education.

This session is for college administrators who wish to make traditionally elitist programs more inclusive. It also is helpful to community and school district personnel who wish to investigate how to set up a similar program in their community. The session may be of some interest to parents wishing to find out more about the existing Nebraska MESA Program. In addition, educators and students who are studying in the area of urban education will find this session informative in regards to how one group of individuals decided to attack the problem of low academic achievement among some of the inner-city youth of today.

## **PRESENTERS**

**Franklin T. Thompson** received a B.S. degree (History and Sociology) in 1976 from UNL, an M.S. degree (Counseling) in 1986 from UNO, an Ed.S. degree (Educational Administration) in 1992 from the University of Southern Mississippi and Ed.D. degree from UNO in 1996. Dr. Thompson is an assistant professor in the College of Education at the University of Nebraska at Omaha. He is currently teaching and doing research in the area of Urban Education, Human Relations, Multiculturalism and Diversity, AtRisk Youth and Guidance and Counseling.

Thompson is an active member in PHI Delta Kappa and Omicron Delta Kappa. He is a member of the American Educator's Research Association (AERA) and is active in the MADD DAD's Association. He has presented at local, state and national conferences. He was a presenter at the First Annual People of Color Conference held in 1995.

**Tom Sires** is a Professor of Construction Systems Technology in the College of Engineering and Technology. His areas of specialization are strength of materials, soils, dynamics and fluids with specific interest in General Engineering. He graduated from the University of Nebraska at Omaha with a Bachelor of Science Degree in Engineering and Business Administration in 1960, received a Teaching Certificate in 1962 and a Masters Degree in Physics and Mathematics in 1967. In 1971, he graduated from the University of Nebraska with a Bachelor of Science Degree in Civil Engineering. Tom is Director of Nebraska MESA and MESA Mid-Level across the state of Nebraska and is involved with the American Society of Certified Engineering Technicians (Senior Engineering Technologist) and the American Society of Engineering Education-Midwest Section Executive Committee and Newsletter Editor.

**Ms. Carol Batt.** After graduating from the University of Nebraska-Lincoln with a B.S. in Elementary Education, Carol began teaching in the Omaha Public Schools. She taught fifth grade for 14 years and earned an M.S. in Guidance and Counseling at the University of Nebraska at Omaha. Carol took a break from teaching children to do technical training with adults for a major corporation in Omaha. She traveled extensively to train within the U.S. and also worked briefly in Scotland. Carol returned to public education in the Omaha Public Schools, Department of Human Community Relations. Her responsibilities include coordinating the 300+ Nebraska MESA program in Omaha Public Schools' seven high schools and the MESA Mid-Level program at the 8th grade level. She also coordinates the Adopt-A-School program that encompasses more than 350 school-business partnerships. Along the way she also earned certification in public administration.