

Diversity in Transportation Workforces: A Summary of the September 2002 Midwest Regional Workshop

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Several organizations sponsored the Midwest Regional Diversity in Transportation Workforces Workshop September 23-24, 2002, in Milwaukee Wisconsin. The Workshop focused on recruitment, retention, and mentoring success stories for diverse groups in transportation workforces in the upper Midwest region. Pre-college programs, college level plans, and post-college, employer based programs formed the structure for the Workshop. Over 60 people attended the workshop.

Participants representing eight states and the District of Columbia identified 12 integral elements to successful programs for recruitment and retention. This paper highlights these important lessons with a focus on their implementation in transportation related programs. The paper will specifically address the strategies aimed at retaining existing transportation students and identify significant barriers to recruitment and retention. While these elements are generally not exclusive to the transportation profession, and hold a great degree of transferability to other technical and scientific fields, this transferability was not addressed in the Workshop.

Background

The Midwest Regional University Transportation Center, a United States Department of Transportation research, education, and outreach center funded through the University Transportation Centers Program of the Research and Special Projects Administration, organized the Workshop. Sponsors included the University of Wisconsin-Madison, University of Wisconsin-Milwaukee, Marquette University, the Wisconsin, Ohio, and Michigan Departments of Transportation, among others. The mix of academia and practitioners on the organizing committee assisted in the development of a program that reflected the needs and motivations of each organization in the area of diversity encouragement. For the purposes of this Workshop, transportation was not limited to traditional civil engineering-based opportunities.

Several national level activities have broad transportation foci. The American Association of State Highway and Transportation Officials (AASHTO) has a Transportation and Civil Engineering (TRAC) program that offers computers and related transportation focused software to elementary and secondary schools. TRAC volunteers, typically transportation engineers from the state transportation agencies. At a basic level, TRAC is a program designed for integration into science, math, and social studies classes. The Federal Highway Administration (FHWA) sponsors a variety of programs on workforce development, including construction career programs, the

Summer Transportation Internship Program for Diverse Groups, and the Garrett A. Morgan Technology and Transportation Futures program. The Garrett Morgan program supports the development of improved educational technology that provides better ways for people to acquire new skills while the summer internship program offers women and minorities the opportunity experience a 10-day agenda of transportation research, work experience, and field trips introducing the many aspects of transportation professions. Other trade organizations also have introduced programs to encourage workforce development nationally.

At the regional and state level, programs at Marquette University, Purdue University, and those of transportation contractor Payne and Dolan were focused most closely on transportation. Marquette's affiliation with the Engineers and Scientists of Milwaukee (ESM) offered a number of opportunities for students to meet with practicing professionals and return to the elementary and secondary school classrooms to recruit and promote the transportation profession. Payne and Dolan has a corporate culture that encourages the nurturing of minority contractors. This process goes beyond a self-serving need to increase available minority contractors. It is part of the organization's adopted goals and is a welcome addition to the long term career prospects of transportation professionals.

Conference organizers adopted the philosophy early on that this workshop was not going to include a series of speakers simply presenting the problems facing the transportation workforce with respect to diversity. For purposes of this conference, the definition of diversity addressed historically underrepresented groups in transportation focused organizations. The organizers recognized that there are significant disparities between demographic percentages and workforce population in the upper Midwest region. As such, the context for this workshop would be successful programs that can be duplicated in institutions of higher learning, government, and private sector transportation related professions. This important stipulation set the stage for the workshop's speakers.

Diversity of the workforce has an important role in the way that transportation decisions are made (and will be made) in the twenty first century. Content and technical specifications are not enough for traditional operations. Innovations, changes in methodologies, and training programs will continue, but focused attention is needed on the context within which that transportation system operates. Former Secretary of Transportation Rodney Slater captured the idea during the release of the Department of Transportation's *The Changing Face of Transportation*. Secretary Slater described it as the four I's. The transportation system in the twenty first century will be:

- integrated in a character both in terms of the modes and of the users,
- intelligent both in terms of the technology and its people,
- international in scope, and
- inclusive in service.¹

Former Secretary Slater's vision of transportation in the 21st Century includes the idea that while what we are doing now is not necessarily wrong, we will need to change in order to be wholly effective in our customer service. This applies to both the employing organizations and the training of transportation professionals. Diversity in the transportation workforce needs to happen.

The National Academy of Engineering (NAE) convened a “Summit on Women in Engineering” in May 1999 and convened a workshop on developing a business case for diversity in September of 1999. NAE also commissioned a workshop on “Best Practices in Managing Diversity” in October 2001.² These workshops focused on engineering disciplines generally and were not transportation specific, nor did they address issues specific to the Upper Midwest. The workshop identified key components of successful corporate diversity programs. This list included: high level commitment from upper management, clear links to business strategies, sustained effort, affinity groups, linking to the educational system, and monitoring and evaluation. Ford Motor Company Group Vice President James Padilla spoke generally about his company’s efforts and included some discussion of the Southwest Detroit High School Partnership Program. This activity allows Ford employees to mentor, tutor, and present seminars on job interviewing and other general skills. The program allows Ford to have a presence in the minority communities of this urban area and allows Ford to develop a workforce that is local to their base of operations.³ These examples and best practices identified were building blocks for the September 2002 workshop detailed here within.

Summary

Conference attendees identified 12 elements of successful programs, distilled from the one and a half days of presentations from 21 speakers on a variety of subjects. The 12 elements were discussed in great detail and developed more fully in breakout sessions on the second day of the workshop. Dr. Edward Beimborn of the University of Wisconsin-Milwaukee was primarily responsible for the categories identified and helped facilitate further discussions on these subject materials. Each common element is described in the following paragraphs.

Have a Clear Mission

It is essential for those who manage programs to clearly identify the programs goals, what your program is, and what you want to accomplish. Clear tasks that direct volunteers and partners are essential, culminating in the development of a good business plan. Keynote speaker Joseph Tucker reiterated this point in his remarks and a caution to “understand your own self first.” This mission needs to actively involve all levels of the organization, from the very top to the very bottom. If diversity is in fact, the primary mission of an organization, it needs to be demonstrated in every thing that the organization does, whether it is marketing or in development of products and services. Transportation organizations have adopted clear missions targeted at providing mobility options and choices, yet their own workforce characteristics are not reflective of the population. Academic institutions adopt statements regarding diversity and have policies in place to encourage enrollment, yet few can point to long term successful efforts, especially evident in the cooler climates of the upper Midwest.

Use a Holistic Approach

Programs need to encompass all stages of a person’s career. As was evident in the earlier National Academy of Engineering efforts and the National Action Council on Minorities (NACME) in Engineering,⁴ opportunities exist to focus on diversity in early elementary school, reinforce through high school, college, technical school and postgraduate endeavors and into a career. NACME refers to it as their “M to W” approach – middle school through the engineering workforce. Retention programs must provide year-round experiences and events, not a one shot,

large audience approach. Students make choices about career paths and educational programs early, yet people change careers often. Part of this may be due to the poor outreach the transportation professions have generally exhibited. Gloria Jeff, a Manager with consultant Parsons Brinckerhoff, compared the approach to the professional sports industry. Professional sports organizations use a process of continuous development and constant reinforcement from early ages; there are Pop Warner football leagues, Little League Baseball, and dozens of other examples. Similar programs do not exist in the technical fields. By the holistic approach and through integration of programs across school and employer levels, the workforce can be developed appropriately. Other scholars echoed these ideas in focusing on the employee's "life cycle" in their employment including an introduction phase which includes good first impressions, a growth phase that recognizes that each employee is different in their career and family goals and aspirations, a maturity phase where new challenges emerge, and a decline phase that can be postponed with adequate intervention.⁵ These employee life cycles mirror product life cycles that are familiar to all – like product life cycles, employee life cycles can be shortened or lengthened dependent upon maintenance.

Develop Partnerships

Relationships should be encouraged between the public and private sector, professional societies, departments of transportation, local government, consulting firms, and construction firms in the transportation arena. Outreach and participation is vital to understanding your customers – whether it be prospective students or prospective employees. There are a number of good examples but they are on limited basis and the concept needs to be expanded such that each partner sees their role and can define it well. It is not enough for a contractor to simply work with a school district to train future employees. It requires cooperation and needs to be mutually beneficial – the school children can learn a valuable set of skills from a dedicated employee/expert in the field while the educators learn more about the skill sets required in the workplace.

Have Dedicated People

Perhaps the most difficult elements of a successful program to replicate are the people managing and working in the program. People who believe diversity is important, who work hard, and link people together are essential. Programs should be stable in personnel and rewards should be in place to maintain this stability. Successful programs also have dedicated champions who make the program work; however, these successful programs must not be reliant upon a single person's ability. While increasing the numbers of female and minority transportation faculty members is part of this effort, there are significant challenges. Previous workshops sponsored by the National Science Foundation addressed problems that underrepresented and minority faculty members found in beginning their careers. These educators found that their service work was often overlooked in tenure and promotion decisions, that they felt isolated, that they were not part of the network, or not taken seriously as an instructor or researcher.⁶

Use Good Curriculum Materials

High quality, experience-based materials that teach basic subjects – math, science, environmental sciences, social studies, etc. – exist and can be utilized in a transportation context. In order to attract and keep students in the transportation fields, emphasis needs to be placed upon "fun" projects. Hands-on learning experiences are invaluable as the typical media portrayals of

transportation engineering or researchers are not exciting. Participants indicated that a better way to exchange information and good products is needed. Outdated, unappealing information is often used repeatedly in outreach activities.

Have a Community-Based Emphasis

One of the largest overlooked areas of opportunity is typically in our own backyards. By being actively involved in the community, visibility for programs and experiences is high. By having a presence in the community, you can involve and communicate with parents and family – a vital component of mentoring and retention. By providing campus experiences for young learners, the idea of technical research and education is presented. Mary Rouse, a Vice Chancellor at the University of Wisconsin-Madison, detailed her institutions efforts to reach out to communities by opening branch locations in a strip mall near traditionally low-income areas. Joseph Tucker said that we must “know our demographics” and not try to be something that we are not. It is important to reflect the community, but this is not just having people of various backgrounds collected together. The organization needs to be part of the community so that constant reinforcement occurs throughout development.

Good Tracking Systems

In order to appropriately follow students through programs, one must have a way to track and get feedback from participants. Programs require adjustments as necessary based upon these measures. By actually measuring what you do, you can then use this essential feedback to improve the quality of a specific program. While tracking is intensive, can be costly in terms of staff and financial resources, and is simply very difficult, it emerged as the most important method by which one can evaluate successes and failures. This evaluation presents decision makers with the information they need to continue funding programs and other related support activities. Program participants vowed to work on this element in their respective institutions. Monitoring was cited as one of the primary difficulties in the National Academy workshops as well.

Use Successful Students & Participants

One of the most obvious opportunities to enhance existing programs is through the use of past graduates or successful mentors. People who believe in you are often the primary reason for remaining in a career field – whether it is family, friends, or older students. Older students and recent graduates serve as a resource to help younger students in much the same mold as an older brother/sister. By asking successful students to give back to the program they benefited from, you begin to establish a firm commitment to the profession and opportunities it provides. Sometimes the best advice (such as decisions to withdraw, change jobs, or leave a field) comes from someone that had developed a connection beyond merely a casual acquaintance or colleague. Engineering firms and programs are often successful in attracting the best and the brightest, but then have great difficulty in retaining the talent.⁷ By using past performers to enhance the recruitment and retention activities, a firm or organization can help reverse the alarming trend.

Provide Recognition and Rewards

Certainly one of the key elements of a successful recruitment and retention program relates to monetary and professional development rewards. For long-term programs, tuition remission and scholarships do go a long way to encouraging students to attend. But this recognition and encouragement must not end there and be a one-time occurrence. By periodically rewarding good

work, employees and students alike feel that what they are doing is recognized and important. When this sense of accomplishment is not achieved, they can easily withdraw from school or work.

Make It Easy for Your Partners

In order to have cross cutting programs and programs that involve academic, public and private sector representatives, it is crucial that we facilitate the interactions by fitting them into programs and curriculum. By making the process easier for those you work with, people do not need to expend extra effort, just a little different effort. Few people are interested in a project that will take significant time and effort away from their core job responsibilities. Participants also noted that these types of recruitment, retention, and mentoring activities must become part of the core responsibilities for all of us.

Create Visibility

University of Wisconsin-Milwaukee Chancellor Nancy Zimpher emphasized that you have to get into the pipeline early on – use good materials, media relations, attractive brochures, etc. to tell your story. It is extremely important to communicate the successes and failures. In the information age, a great deal of information is presented, and unless programs can be tailored to reflect the interests of students or employees, this great deal of information has no audience. Women and minorities need to gain entry to the pipeline to important management and career opportunities. Often women are unwilling to take credit when it is deserved.⁸ The “pipeline” metaphor also means that it is important to keep materials and information coming. To get new faces into the pipeline, it is not enough to tell your story in a place that requires the potential audience to search it out. The materials and information must be delivered when, where, and in the volumes requested.

Develop Networks

The final key element of successful programs deals with the development of professional connections among people who pursue transportation diversity topics. A regular process where people who work at universities, state DOTs and elsewhere get together and share ideas and experiences is important. By meeting regularly, comparing successes and failures, and by networking, successful programs can share ideas and work out problems. Electronic mail listservs and similar vehicles provide chances to develop ideas and overcome problems faced in other areas. Communication skills are important in all work settings, but especially in this setting. Both research scientists and managers must be able to express themselves clearly and succinctly to supervisors as well as subordinates and other professionals.

Conclusions and Next Steps

The Upper Midwest Region is unique in a number of areas - - its relatively disperse population centers and traditional lack of diverse populations create some obstacles for transportation professionals. However, the growing percentages of traditionally underrepresented populations coupled with the already disproportionate enrollments in technical fields of higher education and employees in transportation services, warrants the immediate adoption of successful recruitment, retention, and mentoring programs. In a random sampling of American Society of Civil Engineering younger members (ages 22 to 35) in the fall of 2001, various aspects of employment history were investigated in an effort to obtain information on the civil engineering field and the

career development of engineers.⁹ This survey, and the related narrative comments that were received, echoed this need for immediate adoption of successful recruitment, retention, and mentoring services.

Opportunities exist for transportation-focused programs to extract lessons from a variety of efforts in the engineering fields. These opportunities require recognition of the differences that a diverse workforce requires. It requires understanding of the behavioral, psychological, and management sciences. This understanding will only be achieved if programs to recruit, mentor, and retain minorities and underrepresented groups adopt these identified elements.

The participants of the workshop agreed to work at integrating these key elements in the programs they manage. A revisit to these issues through a follow up conference/meeting will occur in 2004. A formal proceedings document from the 2002 Workshop is under contract and will be completed and distributed in the fall of 2003.

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