

**NATIONAL SCIENCE BOARD  
SKILLED TECHNICAL WORKFORCE LISTENING SESSION  
MACOMB COMMUNITY COLLEGE  
OVERVIEW OF THEMES DISCUSSED  
THURSDAY, APRIL 19, 2018**

On April 19, 2018, the National Science Board (Board, NSB) hosted a listening session at Macomb Community College (MCC) to discuss the challenges and opportunities faced by the Skilled Technical Workforce (STW) and the people that support and teach the STW. Thirty-one individuals from the community participated in the listening session. Participants included:

1. Faculty and students from educational institutions: MCC, Wayne State University, Kettering University, Joliet Junior College, Macomb Intermediate School District, Jackson State University<sup>1</sup>, Springfield Technical Community College<sup>2</sup>
2. Industry stakeholders: Nissan Technical Center North America, Borg Warner, General Motors, TARDEC, Robert Bosch Battery Systems, Kaiser Aluminum, Atlas Tool, Valeo, Antolin Shelby
3. Government representatives: Office of State Representative Patrick Green, Office of U.S. Senator Gary Peters
4. State Organization: Michigan Workforce Development Agency
5. Non-profits: Center for Automotive Research, MICHAuto

Below are the key themes discussed at the listening session.

**KEY THEMES**

- **Stigma/Outreach/Raise Awareness**
  - Many people still believe that factories are dirty work spaces, not the clean, bright, technology driven spaces they are today.
  - Community colleges have trouble attracting/recruiting students into the skilled technical fields. Many students transfer to 4-year degrees and general studies.
  - Participants mentioned that a technical degree in areas such as automotive, telecommunications, electronics, among others, can lead to a starting job with a \$50-60K salary. Even so, educators still have trouble recruiting for these technical fields. More needs to be done to raise awareness about the value of these degrees and the jobs to which they can lead.

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<sup>1</sup> A faculty member from Jackson State University participated in the MCC listening session. Jackson State University is an HBCU in Jackson Mississippi, not a regional institution in Michigan.

<sup>2</sup> A faculty member from Springfield Technical Community College (STCC) participated in the MCC listening session. STCC is the only technical community college in Massachusetts, not a regional institution in Michigan.

- The current reward system for guidance counselors is focused on getting students into four-year institutions. Hence counselors do not draw attention to career paths in technical fields and students remain unaware of these options.
  - Students who underperform in high school are often those who are pushed towards technical fields while high-performing students are tracked in to four-year institutions.
  - Educational institutions and industry should reach out to parents to explain the high return on investment in technical fields. Students are not as aware as parents on financial return on investment. Education centers also need to do consistent outreach to parents such as STEM days and Manufacturing Days.
  - Many rural populations have little knowledge of the automobile industry because they are focused on farming or other endeavors more specific to their local community.
  - A participant pointed out that Apollo 13 is the only movie in which technicians are the heroes.
- **Employee Recruitment/Retention by Industries**
    - Some regional employers struggle to find employees at the 3-5 year skill-level, the level at which employees can run programs with minimal oversight.
    - Retaining employees in the automobile industry can be problematic because companies “steal” employees from each other. In fact, in some cases it is cheaper to steal employees rather than train them within companies.
    - There are a lot of well-paying jobs but they are higher skill. More employees are needed for skilled trades and as technical professionals, rather than for assembly line and rote production.
    - The automobile industry needs individuals with skills in electronics, computer science, and diagnostics. These skillsets are especially needed with autonomous vehicles. MCC is launching a program to develop technicians who can handle electronics.
    - The 2008 economic crisis decimated the automobile industry, created a large gap in the workforce, and altered employees’ confidence in the industry as a career pathway.
    - 32% of SE Michigan’s population is older than 55. General Motors is worried about a loss of workers in the future.
    - Manufacturers need to help themselves by promoting their industry, the jobs available, and the skills needed.
    - Some automotive manufacturing companies create direct paths for career progression within their company to train and keep skilled employees.
    - Skilled trades in Michigan are not back to the high pay level they were prior to the 2008 recession. Industry is not paying a high enough wage to lure people back and retain them.
  - **Partnerships**

- Some manufacturers provide technical tools as an in-kind gift to technical programs in colleges to gain the skilled workers they need. These partnerships also help the college stay current in its training. The auto industry changes quickly, and as such, it is important to stay current with tools and training.
  - MCC leadership meets each week with manufacturing employers to keep abreast of the skills that are in high-demand.
  - MCC has sponsored apprenticeships but they are not as common as they once were. Apprenticeships are a boon for low-income students--they pay, and provide hands-on experience and potential for employment.
  - The skills gap will not be solved by one entity – multiple groups need to come to the table – industry, state, local, and education centers.
  - In Detroit, there is a strong connection between the business community and K-12 schools. Businesses help with schools’ grant writing to fund career and technical education courses.
- **Gender Disparity**
    - Women make-up 10% of non-credit technical programs at MCC. One of the challenges in recruiting women is that they are not aware of technical training programs and there are few female role models.
    - Most women in the auto industry have taken the four-year degree path and are in high demand.
    - Recruitment that focuses on women and girls specifically has been successful at raising the percentage of women in some programs. For example, there are local summer camps aimed at girls (and their parents) to introduce them to STEM-focused careers.
- **Educational Training & The Skills Gap**
    - K-5 education needs to be targeted to get students interested in technical careers/skills early in their educational experiences.
    - Many local high schools lack skill-related classes such as welding. Technical classes and programs are often the first to be eliminated during budget cuts.
    - There is a need for teachers K-12 who are trained in technical education. It is also difficult to find technical faculty at the community college level.
    - In high school, there may not be a connection between technical curriculum and practical application. More cross-disciplinary course work as well as foundational knowledge is needed to link potential career paths and daily life skills.
    - Many community college students lack the math background needed for technical careers and need remedial math to overcome this barrier. MCC developed a math skills assessment test to target specific courses for students based on the results.

- It is hard to sustain funding for non-credit programs in technical fields at community colleges. As a result, after initial funding and momentum, a program may end because an ongoing funding source cannot be found.
- People mistakenly assume education is linear. Individuals can move between education centers and careers throughout their life, although many are often not thinking about lifelong learning.
- Mentorship between faculty and students increases retention and students' willingness to participate in technical education.

- **Policy Issues**

- There is concern that the U.S. is turning its back on new energy technology and associated industries/jobs. Participants strongly advocated for chasing the future rather than the past.
- The federal Perkins Program helps community colleges with funding. Grants are administered through states to community colleges and secondary education centers.
- Rigid curriculum requirements in K-12 education eliminated career and technical education. For example, when Michigan increased high school graduation requirements, students shifted away from technical education courses because they had less time for electives.
- Significant issues can be associated with the lack of wrap-around services. For example, transportation is a barrier for students as public transportation in the area is insufficient. Childcare is also another service where students need support.