

# National Visiting Committee Report for Year 3

For

## Automotive Manufacturing Technical Education Collaborative (AMTEC)

A project funded by the Advanced Technological Education program at  
NSF

### Meeting Date and Location

- April 23-24, 2009
- KCTCS Administrative Facility at Versailles, Kentucky

### National Visiting Team Members Present

- **Richard Alloo**, TEMA Executive in Residence / UK Center for Manufacturing, Toyota Motor Engineering & Manufacturing
- **Jim Brazell**, Analyst, Venture Ramp
- **Ken Carroll**, Vice President of Marketing & Revenue, Kentucky Association of Manufacturers
- **Craig McAtee**, AMTEC NVC Co-Chair, Executive Director, National Coalition of Advanced Technology Centers
- **Paul Perkins**, AMTEC NVC Co-Chair, President, Amatrol, Inc.
- **Roberta Teahen**, Associate Vice President for Academic Affairs, Ferris State University
- **Keenan Wade**, Michigan Energy & Economic Development Cooperation

### NSF Program Officer

- **Dr. Gerhard Salinger**, National Science Foundation

### Project Overview

The AMTEC project is a collaborative effort between 12 community colleges and 14 automotive manufacturing companies seeking to demonstrate that a diverse group of public and private entities can work together effectively to implement training solutions to assure that there is an adequate supply of skilled technicians to operate and maintain the complex machinery used in today's North American automotive manufacturing facilities.

The collaborative is lead by six core partners: Kentucky Community and Technical College System, the Alamo Community College District, Henry Ford Community College, Lansing Community College, and Pellissippi State Technical Community

College. The Kentucky Community and Technical College System (KCTCS) is the grantee and fiscal agent. Ms. Annette Parker of KCTCS is the principal investigator.

AMTEC intends to reach its goal by achieving the following objectives:

- Form an organizational structure that will stimulate college-to-college collaboration and college-to-industry collaboration.
- Identify best practices of current members with a focus on the following topics:
  - Recruitment and retention of young people and traditionally underserved populations to technical programs and manufacturing careers
  - Transformation of content and methods used by colleges to be industry relevant
- Conduct eight or more professional development academies over a two-year period with an average attendance of 20-25 participants per academy. The purpose of these academies will be to share the identified best practices in an effort to gain widespread adoption throughout the nation for the benefit of automotive companies.
- Further refine the scope and details of an application to NSF for a National Center of Excellence in Automotive Manufacturing that will build on the AMTEC project's success and structure to address the skilled worker shortage in automotive companies in the U.S.

Overall, the NVC was very pleased with the progress made in the first three years of the project and has found no areas of significant concern. All original project objectives stated above have been met and, in some cases, exceeded. We find the project in good standing and continue to see great promise in its mission and vision.

### **Status of Planned Activities**

The NVC found that the AMTEC project team has followed through on its scope of planned activities for Year 3 on a timely basis, as evidenced by:

- AMTEC did not complete all three of the academies that they planned due to other important priorities, however one academy was completed.
- AMTEC conducted several “consensus workshops” for the DACUM refinements to the automotive maintenance Delphi outcomes in core industry-driven knowledge and skills in Year 3.
- AMTEC also conducted several “curriculum workshops” with the partners and industry for the automotive maintenance Delphi outcomes in core industry job knowledge and skills in Year 3.
- There were several dissemination activities that took place during Year 3 for AMTEC.
- AMTEC developed curriculum assessments – which were not planned in Year 3 – but were considered by education partners and industry to be very important to the success of the new curriculum.

- AMTEC resubmitted the NSF ATE National Center of Excellence grant and has been recommended for approval. This final application will go to the NSF ATE Board for additional questions and funding is expected by October 01, 2009.
- The project evaluator (CCRC) has continued to collect data that has been beneficial to the project in analyzing and making recommendations for improvement.

### **Evaluation of Current Progress**

The AMTEC team has made excellent progress toward achievement of the project objectives. The NVC team found positive evidence of both quantitative and qualitative results. These results include:

- The ninth academy, co-hosted by Lansing Community College and GM at Lansing, MI, was entitled “Just-In-Time Education” had 54 attendees. This very good attendance included a good cross section industry and colleges.
- **Organizational Structure: Industry/ College** -The project continues to provide success in developing long-term relationships between industry and education partners. Examples provided to the NVC, which were viewed very favorably include

Changes in membership, both in quality and quantity

1. Henry Ford Community College – new member college and Co-PI status, very involved in planning and implementation. Has partnered and mentored Cuyahoga in support of Ford Motor on PLC content development.
2. Ford Motor Company – New corporate member, very involved attended and supported AMTEC at pre-award meeting and is supporting it to grow within their local plants. Supporting PLC content development at Cuyahoga to move more training to the colleges and away from vendors.
3. GM Corporate – Through financial issues, VP Level support and commitment, got Bowling Green to attend test item development at Toyota Georgetown and is committed to add additional plants to the membership going forward.
4. General Motors Assembly Plant, Bowling Green – New membership, volunteered staff to develop test item bank at Toyota and immediately joined afterward.
5. Bowling Green Technical College – has joined in partnership with GM Bowling Green after plant attended test item bank session.
6. Denso –Knoxville – Joined after attending the Knoxville gap analysis in January.
7. Chattanooga State Technical Community College – joined after learning about AMTEC from Toyota and Pellissippi State Technical Community College
8. Volkswagen – committed to join after speaking with Pellissippi, There was a May meeting in Chattanooga to discuss more details.

9. Danville Community College, joined after NCATC Fall leadership conference presentation on AMTEC. Joined senior team leadership and is working on goals and attending meetings.
10. Goodyear, Danville – joined in partnership with Danville Community College.
11. Long Beach Community College – joined after working out a MOA to share curriculum with Bluegrass. Sharing curriculum and assessments also providing feedback for improvements
12. Tarrant County College – Austin TX – joined after discussing with GM Corporate, attended and contributed at curriculum consensus workshop and San Antonio Gap Analysis. Is being mentored by ACCD in San Antonio
13. GM Arlington – joined with Tarrant County College – participating in mentoring with ACCD.

- **Curriculum development**

1. Followed up on DACUM – refined by holding workshops.
2. Refined 170 tasks to 110 core tasks.
3. Use the DACUM to analyze current colleges programs – allowing them to refine and fill the gaps in their programs.
4. Assessment development and deployment was an unplanned activity – however necessary for completion of the curriculum.

- **Organizational Structure: College to College** -The project continues to provide success in developing long-term relationships between colleges throughout the country. Examples provided to the NVC, which were viewed very favorably include:

Anecdotes about the college to college collaboration and college to industry collaboration

1. ACCD and Tarrant County Mentoring at August Curriculum workshop and ongoing talks to determine how Tarrant can learn more about best practices of how ACCD supports Toyota Texas
2. Itawamba and ACCD mentoring in January one day before gap analysis to share curriculum and support.
3. Ford partner colleges working together on PLC content development to support more college training instead of vendor training
4. Bluegrass worked with Toyota and Long Beach Community College to sign a MOA for Long Beach to use Bluegrass Toyota modules
5. GM provided access to Toyota modules and assessments
6. Ford and Toyota volunteered staff to support completion of Toyota donated test items to support GM goals for use of assessments for a new battery plant.
7. All partner colleges agreed to share any curriculum gaps
8. Many colleges are talking and sharing from things they learned about partner college strengths from curriculum and gap analysis meetings.

- The KCTCS leadership team has made the entire AMTEC partner/organization involved feel valued and important to the mission, vision, and accomplishment of goals for AMTEC.
- **Participation-** There has been a significant increase in core partner and affiliate membership. The quality of the members (core and affiliate) document the reputation of AMTEC in being able to deliver the correct curriculum and content required by industry. This increase in partners also demonstrates a response to last year's NVC recommendation for increased partnership with suppliers. AMTEC was also able to increase participation in Tier 1 and Tier 2 suppliers as recommended in the Year 1 report. This included suppliers to four OEMs (GM, Toyota, Ford and BMW). Not only is there an increase in quantity of partners, the addition of high level corporate sponsors is impressive.

### **Evaluation of Future Plans**

- AMTEC intends to request a one year no cost extension to complete the AMTEC curriculum development and assessments completion along with more detailed project plans for partners.
- Proved the validity of going forward with the National Center....
- Continue working with 4 year colleges to effectively translate the research and development activities into applied technical skills and knowledge for the workplace.
- Continue to develop both the career pathways and pipeline for students in the K-16.
- Still urge more Tier 2 suppliers – Denso is a good start.

### **Recommendations**

- Carefully integrate the automotive service technician goals into the AMTEC ATE National Center existing goals. We believe that it could be a potential for scope creep that could impact the AMTEC ATE National Center's core focus and strain the allocated resources.
- Develop and implement awareness training for AMTEC results for Government/NSF leadership (need a stakeholder list).
- Develop and deliver awareness training for AMTEC outcomes for college presidents and leaders.
- Develop a stakeholder marketing tools/piece for all target populations.
- As AMTEC continues their focus on automotive industry - the AMTEC Mechatronics Technician skills/outcomes needs to be much broader based across a majority of 21<sup>st</sup> century, advanced manufacturing.

- Keep working on AMTEC curriculum development and assessments completion along with more detailed project plans for partners (human contributions) with one year NSF no-cost extension to bridge funding to the National Center funding.
- AMTEC is well positioned to move directly into the National Center – keep the momentum already achieved toward this goal.
- Map the current outcomes and goals of YR3 to National Center YR1 goals and work for seamless transitions.
- Encourage additional academies for continuing the work already done.
- Continue to develop both the career pathways and pipeline for students in the K-16
- Enlarge the focus on underserved populations – i.e., Alamo work/LAMP in Lansing – recruitment, disseminations, and awareness.
- Provide sufficient assistance (hand-holding) to get AMTEC curriculum out to stakeholders.
- Refine and develop a highly interactive website with secure areas for team reports, etc.
- Develop a virtual world, social network community (i.e., NING.COM) for AMTEC dissemination and sharing.
- As the curriculum is built – ensure that authentic assessments are in the workplace with real world hands-on experience – for demonstration of knowledge and skills level in all appropriate modules.
- Propose models by which individuals who are teaching AMTEC modules are required to demonstrate / pass assessments for specific modules that they are teaching. Require that faculty demonstrates the ability to pass assessments for all specific AMTEC modules that they are instructing – systems and standards established for the quality control of all elements of AMTEC module delivery.
- Begin work/planning of sustainability now – for future funding potential of AMTEC.
- The members of the NVC strongly support the continuation of AMTEC’s work with a no cost extension from NSF as a bridge to the official National Center funding to maintain the high level of enthusiasm for this project by both the industries and colleges.