

ATEA

American Technical Education Association

Journal

We set the Gold Standard at the
50th National Conference on
Technical Education
Chattanooga, Tennessee | March 20-22, 2013





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COVER PHOTO

James King Vice Chancellor for Tennessee Technology Centers for the Tennessee Board of Regions and lower left Mark Lenz Director Tennessee Technology Center Nashville at Opening Dinner of ATEA TCC Conference March 21, 2013



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The American Technical Education Association (ATEA) was founded in 1928 and incorporated as a non-profit professional education association in 1960. In 1973 the national headquarters was moved from Delmar, New York to Wahpeton, North Dakota. In 2012 ATEA located to the Dunwoody College of Technology, Minneapolis MN. ATEA is the only autonomous and non-affiliated international association devoted solely to the purposes of postsecondary technical education. ATEA is the leading association for the postsecondary technical educator with emphasis on professional development. Educators and individuals from business and industry come together at conferences to discuss the latest trends and developments in technology. The organization is dedicated to excellence in the quality of postsecondary technical education with emphasis on practical teaching ideas and best practices.

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From The Executive Director



We "Set the Gold Standard" in Technical Education at the National Conference in Chattanooga. Thank you to the leadership of James King and the outstanding Tennessee Technology committee led by Chelle Travis, Bob Wallace, Carol Tomlinson, Dr. Carol Puryear, Mark Lenz, LeAnn Blevin and Steve Mallard. The full committee is on ateonline.org. They exemplified what

the auto industry panel said about why industry locates in Tennessee, hospitality and a "Get it done" attitude and ability.

The ATEA conference speakers modeled the authentic character of postsecondary technical education. Jane Oates, Assistant Secretary of Labor for Employment and Training, called for the realization that degrees can be earned at any age. Students should consider first earning an industry recognized certificate, becoming employed, and then pursuing a degree. Tim Lawrence, SkillsUSA Executive Director, in his keynote supported critical thinking and clear communication as employability skills along with technical and academic skills. The Auto Industry Panel, pages 16-17, is a "what it takes" to start and to grow a manufacturing sector in a region.

ATEA applauds the "Outstanding" award winners. There were 45 nominations in all. We thank all nominees and those who nominated them. It was a tie in one category and so close in another that we have added a 5th Award committee member.

Beginning July 1, Dr. Richard Wagner will lead ATEA as President from 2013 to 2014. Thank you to Dr. Larry Moser whose leadership guided the transition from North Dakota to Minneapolis. Dr. Paul Young is now Vice President and President Elect. We also welcomed new board members at the Annual meeting.

ATEA is here to lead, to connect and provide professional development that both delivers in specific areas and moves across the disciplines with technology, software and learning solutions. ATEA members are in the right place at the right time, postsecondary technical education.

Dr. Sandra Krebsbach

Thank you DeeAnn Bilben

DeeAnn Bilben stayed with ATEA this past year to provide continuity during the transition to Minneapolis. She set the frame work for ATEA operations. I am thankful to her for her dedication to this organization and to postsecondary technical education. We plan to see her at the National Conference March 26-28 hosted by Dunwoody College of Technology in St. Paul MN.

president's letter



While some of you are still shivering from a “hanging-over” winter, we folks here on the upper Gulf Coast of Texas are enjoying balmy days in that wonderful time before the mosquitos hatch and the sun beats down through 100% humidity!

This is a time of reminiscing for me...not just because I'm in that age group where there is more that has been done than I will be capable of doing in the future (getting old is a real pain!). For the past 5 years, I have served ATEA in the capacity of Vice President and President. Now, I have been promoted into that ethereal position of ATEA Past President. I owe such a large debt of gratitude to a great Board of Trustees who have put up with me all these years. There is so much creative, dynamic energy in our Board...it just awesome. I know I'm overlooking the key contributions of many members of the Board, but my task has been made considerably easier by the expertise and commitment of these folks: Dr. Harry Bowman, Dr. Bob Dunker, Mike Mires, Jane Hildebrand, Dr. James Sherrard, Bob Wallace and Ron McCage. These folks have all helped

me stay focused on the mission of ATEA with both a healthy dose of the past and a real passion and vision for the future of technical education. I am so deeply indebted to everyone who has served as a Trustee in this organization during these past years. A Special thanks goes to former Executive Director, Betty Krump and her able assistant DeeAnn Bilben, as well as our current Executive Director, Dr. Sandra Krebsbach.

I have a confession to make, however. Much of the work of the past 5 years rightly should be attributed to both the Board and the incredible leadership of James King, my immediate Past President; Dr. Rich Wagner, incoming President; Dr. Paul Young, incoming Vice-President. As Past President, I'm not sure how much new wisdom I can contribute to such a powerful, forward-thinking group as these guys!

As I look back at the past few years one thing that has challenged me most regarding technical education is a statement I have so often heard in academic circles and on the street, “college is not for everyone”. In my present position as an Academic Advisor to low income, first generation university students, this statement has been either uttered or inferred many times over in my brief time in this assignment. I continue to be both frustrated and amused at what this statement implies.

Please recognize I am a product of liberal arts education. I hold degrees in Psychology, Public Administration and Higher Education Administration. I have a vested interest in university education. However, I am perplexed at how a system so pre-occupied with teaching students critical thinking skills and problem-solving could be so blind to one simple issue. College IS for MOST everyone, if the institutions provide the appropriate course offerings to match the new realities of a global marketplace.

Far too often mainline academic goes through its usual handwringing and bemoaning the fact, as they see it, that “most students are not ready for a four year education”. Perhaps, it's the universities and four-year colleges who are not ready for most students.

I've been rereading the comments from an article entitled, “Career and Technical Education, a Key to Good Jobs, Needs Help, Report Says”, taken from the September 17, 2012, *The Chronicle of Higher Education*. One gets the impression that traditional higher education may be out of touch with global realities. There are at least four points in which university education, from my vantage point, needs to “get with the program”.

1. Higher education is out of touch with what is required to be involved in the new and evolving technologies of our time. Most technologies and the industries they represent are calling for workers who can problem-solve, deal courteously with clientele, see the big picture and demonstrate the basic skills of the particular technology. Such qualifications require liberal doses of math, communication skills, citizenship skills, and a breadth of general knowledge, as well as the skills specific to entry level employment. Is it possible that a university engineering program, for example, could break down its course structure in such a way that many interested students could have two choices, instead of one, a two-year Associate program in Engineering Technology to support the work of 4 year and graduate engineers or a four year Engineering degree? In essence, could universities discover “pathway” degree plans with intermediate steps, instead of the “all-in-one” to which most so stubbornly maintain?

2. Does higher education have any idea what the new traditional technical training program, say for a two-year AAS degree or national certification requires? As was once said in a prominent commercial, “It's not your mother's Oldsmobile anymore”, computerization, robotization, just-in-time services, and multitasking have all changed the face of everything from working on automobiles to the way hair stylists do hair. Basic to many of the skills programs are liberal doses of Math, Communication Skills, Sciences, and Computer Operations. Tech students are no longer the “D” and “F” students of a bygone era. They can't be to succeed. Far too much of higher education is perpetuating old assumptions regarding technical skills training and who would be qualified to master them. Voted is gone. Shop class is no more!

3. Universities need to consider their job placement rates. While serving as Dean of a Technical College, a for-profit, stock-owned two-year degree-granting institution, our program placement raters were constantly scrutinized by governmental, public and consumer entities. Most such technical schools have to comply with standards, frequently set higher than many universities are ever expected to meet. It is not uncommon for technical training programs, be they private or public, for-profit or non-profit to meet job placement at the 90%+. I wonder how universities would “stack up” if tasked to meet this standard for their graduates.

4. Technical education is a powerful tool for stirring student interest in continuing to pursue education, especially, if universities recognize that many students find hands-on, skills courses to be incredibly attractive and worth pursuing. As the students mature in their career path, they might find a thirst for more knowledge of a traditional nature, something worth seeking for a four-year degree.

In the mean-time, community colleges, technical colleges, for-profit colleges, dual-credit high school partnerships, and a plethora of on-line resources will continue to be the main

providers of highly skilled, two-year degreed folks, who are providing the lion’s share of the engine keeping our economy alive, while many institutions provide four year degree-bearing folks with high student loan debt and limited job potential.

I’m a strong supporter of technical education and I’m a strong supporter of a four-year college degree. I do think these two things are achievable at, not only, two-year schools, but four-year institutions, as well. I believe this is a good time to be a technical educator. We can and will make a difference. I challenge each of us to keep the mission of ATEA alive and growing.

We need the American Technical Education Association, the premier voice for post-secondary education and the premier professional development for the post-secondary technical educator!

Dr. Larry Moser is President of the ATEA
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Board of Trustee Announcements:

Dr. Richard Wagner will become the President of the American Technical Education Association on July 1, 2013 serving a two year term to June 30, 2015. He is the President of Dunwoody College of Technology, Minneapolis, Minnesota. He has been the Vice President of Academic Affairs at Dunwoody College and Hennepin Technical College also in Minnesota. Dr. Wagner has been an instructor and licensed electrician and prior to that served in the US Navy on nuclear submarines.

Dr. Paul Young was appointed vice president which is president elect. He will become the president in 2015-2017. Dr. Young is the President of Northern Wyoming Community College District.

Dr. Larry Moser, Student Services, Lamar University, Beaumont, Texas, will be Past President from 2013-2015.

James King, Past President was unanimously elected to a 3 Year Board position.

Appointed to the Board for 3 year terms:

Tom Snyder, President of Ivy Tech Community Colleges, Appointed October 4 at the Fall Board of Trutee Meeting.

Dr. Shawn Mackey, Associate Executive Director for Workforce and Career and Technical Education for the Mississippi Community College Board

Brooks Jacobsen, Instructor Lake Area Technical Institute (LATI) in Watertown, South Dakota

Reappointed to a 3 year term

Bethany Clem-Shockney, Dean of Business, CIS, Technologies and Workforce Development at Calhoun Community College, in Decatur & Huntsville, Alabama



New ATEA President Dr. Rich Wagner

President Rich Wagner is the ninth president of Dunwoody College of Technology. He has served in that role since July 1, 2009. He served as vice president of the Board of Trustees of the American Technical Education Association before becoming president. He earned a doctorate in educational policy and administration from the University of Minnesota. He holds a master's degree in business administration from the Crummer Graduate School of Business at Rollins College in Winter Park, Fla., and a bachelor of science from the University of the State of New York in Albany. Prior to entering higher education, President Wagner served 10 years in the U.S. Navy, including five years as an electrician/technical supervisor on a nuclear submarine.

Dr. Wagner has emphasized quality in academics, flexibility in serving the needs of industry, and the importance of hands-on learning during his tenure at Dunwoody. The College will celebrate its centennial--and host the national ATEA conference--next year.

Of his ATEA presidency, he said: "I look forward to continuing to help ATEA as the advocate for the importance of technical education to the U.S. economy. I will use my ATEA presidency to continue to make the case for the value of applied learning to improve lives, businesses and communities. The modern workforce requires that technicians, salespersons and managers all have practical, hands-on skills, critical thinking skills and the ability to communicate well with others. All of us associated with ATEA have the honor of continuing to educate the people of America, serve the needs of industry, share best practices and demonstrate the value of technical education and technical educators to the higher education ecosystem and American society as a whole."

Executive Committee



ATEA Vice President
Dr. Paul Young
 President of Northern Wyoming
 Community College District
 Sheridan WY



ATEA Past President
Dr. Larry Moser
 Student Support Services
 Lamar University
 Beaumont, Texas



ATEA Finance Operations
Bob Wallace
 Tennessee Technology Center
 Tennessee Board of Regents
 Director of Finance



Ex Officio
Dr. Sandra Krebsbach
 ATEA Executive Director



Elected to the Board of Trustees for a 3 year term

JAMES KING

Mr. James D. King is the Vice Chancellor of the State of Tennessee's 27 Technology Centers under the governance of the Tennessee Board of Regents. He is a graduate of the University of Tennessee at Martin and has a Master's Degree from the University of Memphis. Vice Chancellor King is a current Commission Member for the Council on Occupational Education. He currently serves on the Board of Directors as the President for SkillsUSA. Mr. King was ATEA Vice President from July 1, 2007 to June 30, 2009 and President from July 1, 2009 to June 30, 2012.



Appointed to the Board of Trustees for a 3 year term

THOMAS J. SNYDER

Appointed to a 3 year term at the Fall 2012 Board of Trustee meeting. Thomas J. Snyder serves as president of Ivy Tech Community College, the nation's largest singly-accredited statewide community college system serving nearly 200,000 students annually. President Snyder has been nationally recognized in *The Chronicle of Higher Education* as one of seven community college Presidents making a difference. He was selected by President Barack Obama to serve on a Roundtable on Affordability and Productivity in Higher Education.



SHAWN C. MACKEY

Dr. Mackey is the Associate Executive Director for the Workforce and Career and Technical Education for the Mississippi Community College Board. He establishes professional development programs, leads statewide curriculum design and assists colleges in developing Career and Technical Education programs that are eligible for statewide approval and implementation. He is the state administrator of the Practical Nursing Accreditation process. This role requires that he revise accreditation rules and regulations and evaluate each college's Practical Nursing program to determine their level of compliance to ascertain program accreditation. He manages a \$60,000,000 budget and develops statewide policy for Workforce and Career and Technical Education.



BROOKS JACOBSEN

Brooks Jacobsen is an instructor at Lake Area Technical Institute (LATI) in Watertown, South Dakota, where he teaches in the Robotics, Electronic Systems Technology, Energy Technology, and Energy Operations programs. Brooks serves in the South Dakota Army National Guard. He is in his 14th year and is a Multiple Launch Rocket Systems Repairer and Communications Technician. At LATI he is heading up new technology projects.

Reappointed to the Board of Trustees for a 3 year term

BETHANY CLEM-SHOCKNEY

Bethany Clem-Shockney is the Dean of Business, CIS, Technologies and Workforce Development at Calhoun Community College, in Decatur & Huntsville, Alabama. Under her purview are Robotics Technical Park, Calhoun Workforce Solutions division for customized training, college liaison to all Chambers of Commerce & Economic Development activities in the four Alabama county service areas, and two Tennessee counties as well as all Workforce Development partnerships for the college. She oversees seven technical and adult educational programs at the Limestone Correctional Facility, Alabama. Ms. Shockney served at the state level as CTE Director for the Alabama 2-Year College System and Administrator for Technical Education for the Alabama Department of Education (K-12). She taught Drafting and Design at the college level for fourteen years.



student

Outstanding Technical Student Award 2013

Zack Pechacek is an Electrical Technician Student at Metropolitan Community College in Omaha, Nebraska. He was nominated by Dr. Carl Fielder, Director of Career Education.

Zack is a two term SkillsUSA Nebraska College/ Technical President and began competing in high school and won the 2012 Silver Medal Team Works Award at the national SkillsUSA competition.

Zack is also a student in the Building Construction associate program and working

towards becoming a skilled and technical sciences teacher.

In addition to going to college, Zack works full time as an electrical apprentice and owns his own lawn and landscaping business.

Since 2010 Zack has been a National Technical Honor Society student and won the Metropolitan Community College Dean's Scholarship and a full year SkillsUSA Scholarship in 2012.

In 2012 he won the Governor's Recognition Award for outstanding young leader in Nebraska. He participated in the "Pathways to Prosperity" program held in Lincoln. The project is about meeting the challenges of preparing young Americans for the 21st Century and is sponsored by Harvard Graduate School of Education.

Fellow student, Brent Jackson, wrote:

"Zack has the mindset of helping people in their time of need. He has come from being a shy person to a leader that motivates others."

Zack brought the program "Bags of Dignity" to Nebraska that supplies backpacks to foster children containing a teddy bear, toothpaste and other items as Zack says 'generally taken for granted.'

His goals are to continue to grow his landscaping business, he has brought on a partner, and to have his own electrical contracting business. He has an entrepreneur spirit and a charitable heart and plans to give back through teaching another generation.



Zack is pictured with his parents Rachelle and Mike Pechacek who came from Omaha for the ceremony and conference

Award Committee Members



Dr. Harry Bowman
President Emeriti
Council on Occupational Education



Jane Hildenbrand
Chair of Early Childhood Education
Kokomo Ivy Tech, Kokomo IN



Dr. Mike Mires
Dean of Professional, Technical
and Workforce Education
Northern Idaho Community College



Chelle Travis
Assistant Vice Chancellor of
Student Services
Tennessee Technology Centers
Tennessee Board of Regents



Dr. Amy Erickson
Dean of Science, Math, Agriculture
and Culinary,
Northern Wyoming Community
College District
**Appointed to the Committee
for 2014**

Two Outstanding Technical Teacher Awards 2013

The Awards Committee arrived at a tied score that resulted in two winners of the Outstanding Technical Teacher Award.



Dr. Newton teaches Physical Therapy Assisting at Darton State College in Albany, Georgia. Her own education pathway is a model for our times. Kerri received a bachelor's degree in psychology in 1993 then enrolled in a physical therapy assistant program earning a certificate and license in 1994. She earned a Master's of Science in Physical Therapy in 2001 and became a licensed physical therapist in 2002. She now holds a Doctor of Physical Therapy from Temple University.

Kerri became the program director of Physical Therapy Assisting in 2003 when it had a pass rate of 22% and was on probation. Under her leadership the pass rate for the past 6 years has been 98%. She introduced group problem based learning making all students responsible for their learning. Students can access her course materials online enabling the final semester students on clinical rotations around the southeast to participate in weekly online discussions.

She is a member of SCOREBUILDERS a national review board for courses for Physical Therapy and Physical Therapy Assistants. She is an active volunteer in her community with the Children's Miracle Network, American Cancer Society, and the American Red Cross.

A student who had 20 years of factory jobs wrote in Dr. Newton's nomination letter, "She truly has a way for each student to 'get it' and I was one of those students. It took a while to sink in, but she was there to guide and encourage me along the way.'



Emma Hopson is a Practical Nurse Instructor at the Tennessee Technology Center at Elizabethton. She started as an adjunct instructor then she moved from an associate's degree in Nursing to a bachelor's degree in Nursing in 2006 and to a master's degree in Nursing in 2012. Emma models her view that nursing requires dedication to lifelong learning, moving from novice to expert over time. With her advanced degree, she plans to enter a doctoral program.

Among her many professional accomplishments are co-author of EMS Burnout to Balance, published in 2000 by Prentice Hall. Emma is a content expert writer for the National Council of State Boards of Nursing National Council of Licensure Examination (NCLEX) and a test question writer for Assessment Technology Institute. Her professional experience includes Director of Nursing at a nursing home where she wrote policies and procedures to conform to the state rules and regulations. She also hired and trained all of the personnel.

For the past ten years Emma has taught both classroom and clinical training to 80 to 90 nursing students. The LPN licensure pass rate of her students is 96%. Emma remains committed to the technical nursing level. A non-traditional student wrote, "Ms. Hopson is firm but fair, having rules yet maintaining relationships, and keenly being empathetic to each student's struggles, as well as learning style." Her fellow instructor shared a quote from Emma in her first year of teaching, "I am home, and this is what I was meant to do."

Outstanding Technical Teacher Award Finalists



Sarah Durham is a master instructor in Technology Foundations at TTC Dickson. Almost every student who attends TTC Dickson goes through her course which teaches basic math, reading and communication skills. She includes skills for being successful and productive citizens, Technology Foundations is a foundation for life.

Sarah is a state-wide mentor to online instructors of technology programs. Her professional responsibilities extend to In-Service Planning. A colleague wrote, “When you are in the trenches, you want someone beside you who is smart, clever, uplifting, has a strong constitution for doing the heavy lifting, and indefatigable will to fight for right, will listen to fellow trenchers, stands tall enough to see the path to the nearest hill and is willing to commit the resources to get to it.”

Jimmy Jones is a master instructor of Motorcycle and Marine Engine Technology at Chattanooga State Community College TTC. He exemplifies a “Gold Standard” technical teacher because he continually seeks ways to improve his program. He transformed a small engine program to one that produced service technicians in the Marine Service Industry, and then added the motorcycle repair. The program’s success has required adding an instructor and the placement rate is above the state average. He was one of the first to use the internet platform Desire2 Learn, offering 20% of his curriculum online. He has developed a Student Progress Report that is used by financial aid to track attendance to award aid. He has produced numerous state SkillsUSA gold medal winners.

He is recognized by his profession serving on the Board of Marine Industry Training Council and has completed certifications for Johnson, Evinrude, Mercury, and Yamaha. He finished his bachelor’s degree in 2012 and is currently enrolled in a master’s program at University of Tennessee Chattanooga.

Jimmy’s colleagues and instructors in his program had this to say, “we are constantly sharing ideas and generating new ways to approach the classroom and accomplish the goal of learning. With Jimmy you have to be careful what you ask for because if there is a way to make it happen, he will find it.”



Martha Woodall is an instructor in the Medical Office Information Technology (MOIT) Program at TTC Knoxville. Her course is one of kind in the TTC system. She has bridged the gap that allows her students to articulate 30 hours of college credit towards an associate degree. Martha is able to take students who cannot survive in other programs and trains them to be successful MOIT students. She is known for her warmth and support of each student’s success.

Her students were the first in the nation to take the National Healthcare Association’s Certified Electronic Health Record Specialist certification test. Her students pursue the certification on their own and paid their own testing fees, understanding the added value of Electronic Health Records certification.

She was recognized in 2009 issue of *Health Career Connect Magazine* for her understanding of the needs of health care employers. Martha’s students go through externships which contributes to their job placement. She has relationships with over 60 area offices and hospitals in Knox County and the surrounding area.



Outstanding Technical Program Award Winner 2013

Medical Assistant Tennessee Technology Center Knoxville.

The American Technical Education Association awarded the Outstanding Technical Program to the Medical Assistant Program at the Tennessee Technology Center in Knoxville. The program nominator was Boyd Hestad, Counselor at Tennessee Technology Center Knoxville. Graduates of the program are qualified by didactic and clinical training to provide services under the direct and continuous supervision of physicians and qualified medical office staff. Christina Nagy is the lead Instructor.



The program is accredited by the Commission on Accreditation of Allied Health Education Program (CAAHEP) a programmatic postsecondary accrediting agency recognized by the Council of Higher Education Accreditation (CHEA) and the National Healthcare Association (NHA) certification and Council on Occupational Education (COE).

The curriculum includes: administrative procedures, anatomy and physiology, medical terminology, clinical procedures such as sterilizing instruments and equipment, setting up patient exams and/or minor surgery, administering drugs, screenings, electrocardiograms, and emergency first aid. There is an externship that prepares and connects students to the workplace. The students enter the workforce in



physicians' offices and clinics with a placement rate of 93 %. Graduates of the program have options through articulation to add course work to sit for the Phlebotomy Technician Exam. They can transfer 30 hours to any of the Tennessee Community Colleges towards an Associate of Applied Science

degree.

The program has won Tennessee State SkillsUSA Gold, Silver and Bronze metals beginning in 2009 and two Gold National SkillsUSA in 2010, 2011 and 2012.

The students participate in community food drives for Second Harvest and participate in community service.



Christine Nagy lead instructor for the award winning Technical Program Award 2013

Outstanding Technical Program Commendation Award

Nuclear Program at Three Rivers Community College nominated by Dr. Grace S. Jones President, received a commendation. The Nuclear Program lead by Dr. James Sherrard collaborates with industry on their needs, and integrates the students' needs and capabilities with the education necessary to function in the demanding nuclear work environment. According to a letter of recommendation from Marc W. Goldsmith, President of the American Society of Mechanical Engineers, The Nuclear Program at Three Rivers has sustained exceptional performance for over 15 years and indicator of both a great program and a great leader.

The Associate of Science (AS) program was initiated in the fall of 1983 as a direct outcome of the Three Mile Island nuclear disaster. Utility operational personnel were now required to obtain educational credentialing for further operational licensing. The program has been recognized in 1991 as the only two year program satisfying the academic federal licensure requirement: all other qualifying programs were four year baccalaureate degrees. For the first five years of the program it was fully funded by the nuclear utility in all aspects – faculty salaries, all equipment, all initial equipment purchases, the rental of a portable reactor simulator, 16 annual student scholarships. The state of Connecticut purchased a \$1M simulator (pictured) in 1991. Dominion Nuclear Connecticut took over the program in 2001.

The program received the initial Technology Accreditation Commission (TAC) of ABET Accrediting Board of Engineering and Technology accreditation in 1989 and has remained continuously accredited since that date. The program started, as stated in 1983, graduated its first class in 1985 and was accredited in 1989. The accreditation facilitates the transfer to four year programs in nuclear engineering and health physics as well as creating national nuclear technician employment opportunities.

The program received key national recognition including: ABET Excellence in Education Award; the Edison Electric Institute's Diversity Award for promoting commercial nuclear power careers through scholarship programs for women and minorities and the National Junior and Community College's Best Associate Degree award.

The Nuclear Engineering Technology (NET) program supplies trained technicians for the northeast and recently the college underwent an \$85M modernization and centralization of academic facilities resulting in two new state of the art nuclear

laboratories, a health sciences lab and the nuclear lab that better utilizes the \$1M one of a kind in the world nuclear reactor simulator—which serves as a capstone for the AS degree program.

The program provided health physics technicians, nuclear chemistry technicians, reactor engineering and power plant operations/maintenance technicians. The students are able to move within the field with additional training or to move to a four program. 100% of the students graduate with an associate degree and complete the training and received the operator's license.



Dr. James Sherrard, Chair of Nuclear Programs at Three Rivers Community College, Norwich CT, instructing using the Nuclear lab simulator funded by the State of Connecticut.

The strength and rigor of the program also supports and grows other nuclear industry businesses. Michael Brown, 17 year member of the Advisory Committee, attributes Three Rivers Community College with providing graduates for Southeastern Connecticut's nuclear power plants, General Dynamics nuclear submarine manufacturing, Dominion Energy, Zachery Engineering (a nuclear support firm), Canberra Instruments (nuclear detection instrumentation manufacturer) and Yale Nuclear Medicine.

This program is considered an invaluable asset to the youth of the region, the business community and the State of Connecticut. Program Director Dr. James Sherrard has the respect and acceptance of the community, the students, and the industry.

Silver Star of Excellence Award 2013

Dominion Nuclear Connecticut

The Silver Star Award is awarded jointly by the American Technical Education Association and the National Technical Honor Society. It is presented annually to a company that exemplifies investment, engagement and support of technical education that provides the skilled workforce for their industry or service. In addition to the award, the company will be listed in the National Technical Honor Society National Hall of Fame for Educational Excellence.



Accepting the award for Dominion Nuclear Connecticut was Trad Horner Assistant Director of Training. Trad is a graduate of the program. In his comments he stated that Dominion Nuclear sees the program as an investment not a cost which includes the scholarships, internships and donated "state of the art" equipment to the program at Three Rivers Community College

This year's Silver Star of Excellence Award winner is Dominion Nuclear Connecticut, nominated by Three Rivers Community College Norwich CT President Dr. Grace Jones.

Three Rivers Community College has had an extensive and comprehensive student scholarship program to train technical employees at the nuclear utility since 1983. Dominion Nuclear Connecticut continued the program after acquiring the original owner Northeast Utilities in 2000. All phases of the program have been continued or enhanced.

The scholarship program for the Nuclear Engineering Technology AS degree consists of all tuition and fees, book support, stipend during each month of the academic year, plus a full 12 week summer internship at the nuclear complex. 16 full scholarships are awarded each fall to entering freshman, so at any time there are 32 students under full scholarship support. There is no obligation by the student. Typically the student does want to start employment at the power plant after completing. The starting salary is \$63,000. Some students do choose to go on for the bachelors and masters degrees and go back to be hired as an engineer.

To date 241 nuclear program graduates have been hired. Graduates of the Nuclear Technician Program have gone on to jobs in operations, engineering and management staffing at Dominion.

Dominion's contributions are:

- A \$5000 annual donation to maintain the currency of the lab.
- Support for students to attend regional professional society dinner's meetings to network with industry representatives.
- Funds for Nuclear Program Faculty professional development.
- Facilities: the Nuclear Instrumentation and Control Laboratory—purchased and maintained with funds provided for the last 23 years.
- Training—students are guaranteed a 12 week paid summer internship at \$19 per hour. Students with good academic standing have the option for spring and fall seasonal employment.

20% of the awards are to women and minorities.

The internship is offered between the first and second years of this two year program and tries to match the student with their interests for future employment at the plant, operations, chemistry, health physics, and engineering.

There are 4 Advisory Committee members from DNC on the Nuclear Advisory Committee. They are from the key areas of engineering, operations, human resources, and training.

Dominion Nuclear Connecticut scholarship and internship program provides the financial and educational support for residents that might otherwise not participate in postsecondary education and probably not the power industry.

Dominion stated to the nuclear industry management that they viewed the program not as an expense but an investment in the future.



Dr. Sandra Krebsbach, Executive Director of the American Technical Education Association; Trad A. Horner, Assistant Director of Training Dominion Nuclear Connecticut; C. Allen Powell, Executive Director the National Technical Honor Society.



Jane Oates is a definite friend and supporter of technical education.” Larry Moser, President of ATEA, said in his introduction of Assistant Secretary of Labor for Employment and Training.

She began her keynote by commending Tennessee for being a leader in technical education with technical colleges and educational entities working together. “It is exciting to see what is happening in Tennessee.” She also commended

ATEA as “an amazing organization, that in these tough budget times, is worth the investment of membership and conference attendance. They are constantly pushing the envelope on partnerships.”

Partnerships, bi-partisanship and putting the employer first are her priorities. She noted that education and training are coming around to know that it needs to become a demand driven educational system. “We cannot just educate people without making sure employers are looking for the product in terms of curriculum and the student we are graduating.” Going into debt for a college education without a career direction is wasting money and aspirations.

Stackable credentials and applying credit are flourishing models and are the new normal. “We need to make sure that kids understand there is not a perfect age to go to college.” Student need to know beginning with a credential to work then moving to a degree program either paid by the employer or self-funded is an option. People will get college credit when they display the skills. It is education for what can you do not what can you read. We need to make sure that people of any level, with stackable credentials and industry recognized credentials can move from job to job and not lose money. No one wants to be unemployed.

Continued on page 27

Tim Lawrence Executive Director of SkillsUSA keynote speaker at the Awards Luncheon. Tim recognized ATEA’s 50 years of quality technical conferences and commitment to technical education. He identified the skills needed to be employed and the topics to address.



ATEA, This is YOUR time!

- You have been true to your mission for 50 years!
- The only national association committed totally to post-secondary technical education
- The time for post-secondary technical education is now
- A national priority!

The work you do is critical

Building a highly skilled American workforce

- “Critical to our nation’s economy”
- “Critical to our national security”
- YOU are Champions for students, communities and our nation

Employability Skills...AKA

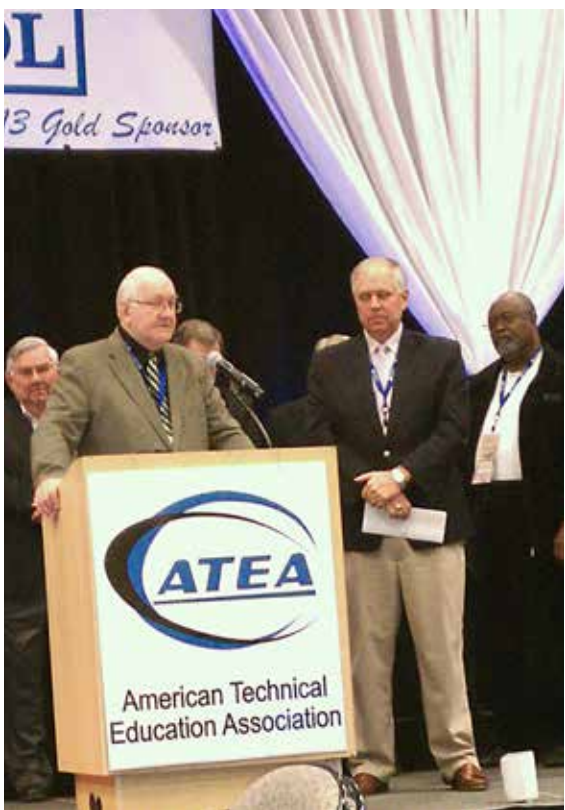
- Soft Skills
- Life Skills
- People Skills
- Interpersonal Skills
- Professional Skills
- 21st Century Skills

Hot topics in education

- All students must be “college-ready” and “**career-ready**”
- Preparing students for future **careers** “programs of study”
- Meet **industry expectations**; proven by assessments
- Outcomes should include employability and critical thinking skills



**2013 50th National Conference
on Technical Education
Chattanooga, Tennessee**



Auto Industry Panel

“With the 60,000 employees in the growing auto industry and related suppliers in the south, a national conference in Chattanooga needed to have a panel on why and how the auto industry grows in the south.”

Sandra Krebsbach, Executive Director ATEA

James King Vice Chancellor for Tennessee Technology Centers, Past President of ATEA brought together three of the top technical training professionals and two Tennessee Technology Center instructional and administrative leaders who helped to deliver major partnerships. The training professionals on the panel were:

Industry training leadership:

Ed Castile, Alabama Industrial Development Training Director participated in the early stages of bringing Nissan to Smyrna Tennessee then went to Alabama when Mercedes came to Alabama.

Gary Booth has been at Volkswagen Academy in Chattanooga since 2008 and prior to that 20 years with Toyota in Tennessee.

Kevin Smith, Technical Training Manager Nissan, worked for Ford at the Kentucky Truck Plant and MSX International

Education Partnership leaders:

Dr. Carol Puryear, Assistant VC TTC, TBR Murfreesboro Nissan training facility and program partnership

Dr. James Barrott, VP Technology Chattanooga State CC and TTC Director, Volkswagen in Chattanooga

with a lot of people. We have learned from our international partners beginning with Nissan. Nissan saw the potential for success and success in a hurry. The workforce was a part of that. What we have seen in Alabama, is Mercedes with a German culture, Honda, Japanese and Hyundai Korean, each make cars in very different ways but when it comes to training people there is the common experience of the workforce receiving the training well and they do not need to be untrained. They are new to the process and absorb new information and new techniques. The workforce is eager to please and work hard for good pay. So it is work ethic and a trainable workforce along with our charm and personality.

Gary Booth, Volkswagen Academy since 2008 and 20 years with Toyota in Tennessee: Volkswagen made a strategic decision to locate a plant in North America to be in the markets where they were selling the product. In 2008 Volkswagen had 398 cities that wanted them to build the plant in their community. Volkswagen had five criteria for the location. The first three were workforce, the educational system and strong infrastructure with alignment of highway and rail to move the product.

The fourth was government support at the state level and local level with a “can do attitude”. In Chattanooga they found a “Get it done” attitude. The quality of life, the people, the city center, and cost of living met the 5th criteria.

KING: HOW IS THE TRAINING TODAY DIFFERENT THAN THE EARLY START UP?

Kevin Smith, Section Training Manager Nissan Tennessee and Mississippi: We need both production and maintenance technicians. Pre-employment training skills are needed for production. Maintenance technicians need the employment skills, the basic skills where they need to be there. We can teach them the technical skills.

Dr. James Barrott, Vice President of Technology Chattanooga State Community College and Director of TTC Chattanooga: Working with Volkswagen, the training needs were for both startup and ongoing training. To understand the timeline for program development, we first started talking to Volkswagen in 2009 and they wanted to be open in 2010. To do that we had to stretch policies. We needed someone at the state level who steps up and that was James King. He



Left to right: Dr. Jim Barrott: Chattanooga State Community College VP Technology and Director of TTC Chattanooga; James King, Vice Chancellor for the Tennessee Technology Center Tennessee Board of Regents; Ed Castille: Director, Alabama Industrial Development Training; Gary Booth, Human Resource Development, Volkswagen Academy Chattanooga TN; Kevin Smith: Section Manager, Technical Training, Nissan Tennessee and Mississippi; Dr. Carol Puryear, TCC TBR Assistant Vice Chancellor of Instruction and Special Projects

KING: WHAT ATTRACTS AUTO INDUSTRY TO TENNESSEE, ALABAMA, AND KENTUCKY.

Ed Castile, Director of the Alabama Industrial Development Training: For many of the companies locating a manufacturing facility in the south, it is the combination of the workforce, the culture and the hospitality. We are known for working well

understands business and education. Without his support it would not have happened. When it was decided that Volkswagen would come to Chattanooga, we had to move at “lightning speed.” To fulfill our side of the partnership, we developed the Automation Mechatronics program, a 3 year program with 5 semesters of lab and classroom and 4 semesters of OJT in the plant-4000 hours. Three years later we developed Car Mechatronics to train for the team of people that checks for any issues and makes sure it is a good car. So you have to be flexible and have champions at the community level and the state level.

King: At the State of State address, Tennessee Governor Haslam announced a \$34M partnership between TTC Murfreesboro and Nissan to build a facility at the TTC.

HOW DID YOU MAKE IT WORK SO THAT IT WAS A PUBLIC PRIVATE PARTNERSHIP.

Dr. Carol Puryear, TTC TBR: An industrial group started to meet on their own. TTC Murfreesboro found that they all had the same need for skilled workers. The industrial group started working together lumping programs and sharing classes. The industrial group took it on and TTC Murfreesboro stated working with them on testing. We were partnering and sharing ideas, and space before there was ever “an ask” from the Governor.

Kevin Smith, Nissan: We were expanding and were still 80 technicians short. We saw limited space and limited abilities for all industry partners. Nissan decided to donate land, TTC would bring in programs, we (Nissan) would bring \$1.5M in equipment that TTC could share with other industrial partners. Nissan wants Rutherford County to continue to grow. It took the collaboration of TBR, local legislators and Economic Development to make it happen. (Toby Compton Tennessee Economic and Community Development present in the audience concurred)

KING: WHAT SHOULD THE STATE BRING AND WHAT SHOULD THE BUSINESS BRING FOR A PARTNERSHIP BETWEEN STATE AND BUSINESS?

Ed Castile, Alabama Industrial Development Training: What does the state need to bring to the table? Team work, bring the economic developers, local leaders and state leaders in the room and at the appropriate time the colleges. It is long term partnership so workforce development plans have to have pathways. States have to be willing to step up with resources. They have to meet infrastructure requirements. He noted that Bethany Clem-Shockney Dean of Business, CIS Technologies and Workforce Development at Calhoun State Community College and ATEA Board of Trustee was instrumental in the delivery of the Technology Park in Decatur, Alabama.

Gary Booth, Volkswagen Academy: The willingness of government both local and state level to work with the business. There are moving parts that are all connected. The mechatronic program was approved in the same time frame it took to build a 163,000 sq. ft. facility. If a company invests over \$1B, the incentives make a difference. There are surprises and issues that arise so it is also the willingness to get it done by working together.

KING: FROM THE EDUCATION SIDE WHAT DOES IT TAKE TO ENCOURAGE PARTNERSHIPS?

Dr. Carol Puryear, TTC TBR: Willing to change how you do business as usual such as having testing done 24 hours a day. We met the need for the 24 hour testing cycles even though the first reaction was, “We have never done this.” You have to be flexible with policies. Speed, “next year” is not an option. Business is not able to wait. It’s listening, creativity, speed, a roll up your sleeves attitude and relationships.

Dr. James Barrott Chattanooga State CC and TTC: Eliminate “can’t and don’t”. When business and industry hear that they shut down. The need to hear “we can do that” and present options. You cannot give up. You have to be creative and understand options and present those options in a creative way. Volkswagen was not our first attempt to attract a major manufacturer to Chattanooga. We were second when Toyota chose Tupelo, Mississippi. We were united as a community and had the same vision on what we wanted to accomplish. When Volkswagen chose Chattanooga there were celebrations all over the city. Volkswagen has more than 8,000 employees in Chattanooga.

KING: WHAT ARE THE SPECIFIC AREAS OF TRAINING WE ARE LACKING?

Kevin Smith, Nissan: What we need are partners at all levels of education. We need to get out to the high schools to communicate that it is possible to earn \$60,000 a year and have no debt. Our senior managers in Nissan started as production technicians, they had avenues to grow. The partnership with TTC creates a pathway to an associate program through apprenticeship programs and into a bachelor’s program. Pathways from an associate degree to an engineering degree give them avenues.

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Spring 2013

by Sandra C. Coyner, Ed.D.

Writing for the ATEA Journal



You may be doing exciting work at your institution but are unsure how to share it with your colleagues. I invite you to write about your accomplishments for publication in the ATEA Journal. It is a natural way to discuss your

research or your professional experiences with a larger audience. We publish research articles (empirical studies, case studies, literature reviews, theoretical and methodological) as well as articles presenting best practices in the classroom and laboratory; technical information; problems and solutions; and topical and contemporary issues.

The process is easy and transparent. Publication guidelines are available on our website at <http://www.ateaonline.org/ATEAJournalGuidelines>. These guidelines provide information regarding the types of manuscripts accepted, the technical requirements of Journal writing, and the criteria for selection. As editor, I am always available to answer and questions that arise during the writing and submission process.

Upon submission, your manuscript will be blind reviewed by three editorial committee members. They work independently to review the manuscript and use a rubric to evaluate its significance and contribution to postsecondary education; confirm it is scholarly and clearly written, and assure conclusions are clearly drawn and supported.

After editorial committee and editor review, a publication decision is made. The manuscript may be accepted with no revisions required, conditionally accepted pending editorial comments incorporated, rejected with encouragement to resubmit with major revisions, or rejected. The most common reason for manuscript rejection is that it does not fit with our members' postsecondary interest – i.e., it is focused on K-12 vocational education without a postsecondary connection. Be sure to address the impact on postsecondary technical education as you craft your manuscript to avoid this pitfall.

We want authors to be successful. In addition to the assistance and suggestions offered in the publication guidelines, members of the editorial committee offer support to potential

authors. If you wish, a member of the editorial board will share authorship and work with you to develop or refine a manuscript. We can collaborate from the beginning to craft a manuscript that proudly reflects your research and activities. We are willing to work with you during any phase of the writing process to help you develop and refine your writing.

Please consider sharing your educational work with your contemporaries. Your work is important and writing for the ATEA Journal will enable you to inform the professional community and contribute to the postsecondary technical education body of knowledge.

Sandra C. Coyner, Ed.D. is the Editor of the ATEA Journal

Editorial Review Committee Appointments

On May 17, 2013 President Larry Moser made three appointments to the ATEA Journal Editorial Review Committee. The applicants were reviewed by Editor Dr. Sandra Coyner and Managing Editor Dr. Sandra Krebsbach.

Dr. Nasser Razek, Clinical Faculty
Counselor Education and Human Services
University of Dayton, Dayton Ohio

Dr. Qetler TJ Jensrud, Associate Professor
University of Akron
Educational Foundations and Leadership
Teaching and Training Technical Professional Degrees

Jane Hildenbrand
Chair of Early Childhood Education
Ivy Tech, Kokomo IN

They will be reviewing articles for the November ATEA Journal along with Dr. Ron Hutkin, Dr. Dan Tomal, Concordia University River Forest IL, Dr. Harry Bowman Clermont FL, Dr. Susan Olson, University of Akron.

From Terminal to Transfer: Bridging the Gap Between the Technical Associate and the Baccalaureate Degree

by John T. Legier Jr., Ph.D.

Defining the Associate Degree

According to Aud et al. (2012), an associate degree is “an award that normally requires at least 2 but less than 4 years of full-time equivalent college work” (p. 316). Associate degrees are generally separated into two major categories: (1) academic or transfer and (2) career and technical, or terminal (nontransferable). Academic or transfer degrees are often designated as Associate of Arts (AA) or Associate of Science (AS), whereas career and technical, or terminal degrees are most often designated as an Associate of Applied Science (AAS).

While associate degrees typically share the characteristic of a two-year curriculum, the distinction between the two major categories is critically important to both college students and faculty. Transfer degrees (AA and AS) are designed to parallel the first two years of a four-year baccalaureate degree, but applied associate degrees (AAS), considered terminal or nontransferable, have no defined academic path beyond the completion of the two-year curriculum (Makela, Ruud, Bennett, & Bragg, 2012). Consequently, AAS graduates who choose to continue their formal education often have limited options. In a study performed by the Western Interstate Commission for Higher Education (2010), the commission noted that for transfer associate degrees:

Some states include transferable associate of art degrees... These degrees provide students with a clear pathway to transfer and often allow transfer students to enter a receiving institution with junior status. In some cases states have also allowed for the transfer of associate of applied science degrees... However, these types of degrees are typically only transferable to bachelor of applied science programs [emphasis added]. (p. 9)

Limitations of the Technical Associate Degree to the Baccalaureate Level

Technical associate degrees, particularly those designated as Associate of Applied Science (AAS), are often referred to as terminal degrees because of their curricular focus on occupational education. As cited in Ignash and Kotun (2005), The National Council on Occupational Education (NCOE) recommends that 50-75% of an AAS degree be comprised of technical courses, with the difference – at least 25% - comprised of general education. The authors clearly identify a measure of concern in academic attainment for a seamless transfer as junior level status to a four-year institution. Further, Townsend (2009) reports that an AAS degree is considered terminal because it consist(s) of occupational or technical

courses that are not required and thus not transferable into conventional academic baccalaureate degrees.

Since AAS degrees are designed to prepare graduates for immediate entry into the workforce, the technical focus in the curriculum is appropriate. However, graduates who decide to pursue a baccalaureate degree learn very quickly that the AAS degree represents a tradeoff: employment today for limited educational opportunities tomorrow.

Because AAS degrees require so little general education and because the technical training often does not articulate to a baccalaureate program, AAS graduates often perceive that pursuing a higher degree requires academically starting over. It is not unusual for an AAS curriculum to include general education courses that are considered by senior institutions to be remedial and thus non-transferable. This is especially common in English and mathematics, which are perhaps the most critical elements of a general education.

Ultimately the issue facing AAS graduates is one of academic portability. Unlike AA or AS degrees that are widely recognized and accepted by senior institutions, AAS degrees were never intended to transfer. As a result, students who choose to seek a baccalaureate degree often do not understand if or how their AAS degree fits into a baccalaureate program.

Present Educational Demographics and Employment Projections

The U.S. Department of Education's National Center for Education Statistics (2010) reported that for the 2009 to 2010 academic year, 640,113 associate degrees were conferred in public institutions. The data did not specifically categorize associate degrees by AA, AS, or AAS. Additionally, the number of associate degrees awarded from academic years 1999–2000 to 2009–2010 increased by 43% for public institutions (Aud et al., 2012).

In a report for the Center on Education and the Workforce, Carnevale, Smith, and Strohl (2010) state that by 2018, our economy will generate 46.8% in new job openings with nearly two thirds of these jobs requiring some postsecondary education. Specifically, “about 33 percent will require a Bachelor's degree or better, while 30 percent will require some college or a two-year Associate's degree” (Carnevale et al., 2010, p. 13).

Facilitating the Transfer of the AAS

In response to the demand for baccalaureate options for AAS degrees, states and institutions have developed mechanisms that facilitate the transfer of these so-called terminal degrees. Perhaps the most common method for facilitating the transfer of an AAS degree is the development of a formal articulation agreement between a junior and a senior institution. Junior institutions seeking transfer opportunities for their graduates often initiate such articulation agreements.

Because of the technical nature of both the AAS degrees and their baccalaureate counterparts, articulation agreements are usually very specific and detailed. For example, in Illinois there are over 30 AAS programs in automotive technology. For each program that formally articulates with the university's Automotive Technology degree, ten or more courses must be evaluated for equivalency to the 39 hours of technical courses required in the first two years of the baccalaureate curriculum (L. M. Lindhorst, personal communication, March 12, 2010). It is important to recognize that this is not a one-time process. Every time a change is made in a junior program, the agreement must be revisited. Every time a change to the senior program, it affects agreements with all junior programs. Therefore, the amount of time required to evaluate each curriculum for equivalency and to develop and maintain each agreement can be significant.

A College Board (2011) study focused on community college student transfer from the baccalaureate institutional viewpoint noted the importance of articulation agreements:

Articulation is at the core of most discussions of transfer because without some agreement about the transferability of credit, students are forced to select classes at the community college based on "educated" guesses. Even so, many four year institutions do not inform their admitted transfer students how their credit will transfer until these students are well into their first term at the senior institution. (College Board, 2011, pp. 17-18)

An alternative to a common general education is to require that those general education courses included in AAS degrees be transferable (Ignash, 1997). However, the definition of transferable can be vague and application uncertain. Some institutions will accept all non-remedial courses from another regionally accredited institution, thus making them transferable, but they may not satisfy specific general education or major requirements. For example, a course in human relations may be worth three hours of transfer credit but only counts as a general elective. Unless the baccalaureate program includes general electives, the course makes no real contribution to degree attainment. Therefore, the requirement that courses be transferable has limited value unless it is strictly defined.

As discussed earlier, the AAS degree normally contains approximately 25% of general education in course work for the associate degree. Ensuring there is transparency and transferability of general education credit is probably the most important aspect of developing a formal articulation. An example of how this understanding can further assist both faculty and advisors at two-year and four-year institutions is the development of a formally articulated list or agreement of equivalent courses accepted at the four-year institution during a student's program development at the community college level.

Alternative Credit - Approaches to Assist Individuals with Technical Associate Degree Transfers

While the above mechanisms are designed to provide a much-needed solution to the problem of transferring a technical associate degree, each has its limitations. In the case of program articulation agreements, there is a need for constant updating. Mandating a transferable general education provides only a partial solution. With record enrollments at community colleges nationwide (Provasnik & Planty, 2008) and an economy that demands an increasingly educated workforce, the need for transfer options for technical associate degrees will likely continue to increase. The charge is to identify a solution that simply yet effectively satisfies that need.

College Level Examination Program (CLEP) and Defense Activity for Non-Traditional Education Support (DANTES)

These college level equivalency examinations assist non-traditional students, especially those in the military and those with technical backgrounds or technical associate degrees in meeting four-year university core curriculum requirements, thus minimizing their time in a transfer program at a four-year institution. Southern Illinois University Carbondale (2012) notes that credit for work experience, DANTES, CLEP, Advanced Placement, military credit, and proficiency examination credit awarded by an accredited senior-level institution may be counted toward degree requirements (Southern Illinois University Carbondale, 2012). For those students with a technical associate degree, completion of CLEP or DANTES course(s) may minimize senior institution courses, residency requirements, and meet university core course requirements (this acceptance must be evaluated on a case-by-case situation with the senior institution).

Transferable Military Education Credit and/or Prior Work Experience

Each of these approaches requires individual portfolio evaluations with an in depth evaluation for transferable

credit to a four-year bachelor degree. According to the College Board (2011), "...unless a four-year institution has a standardized articulation agreement covering all majors..., admission evaluators are faced with the time-consuming responsibility of reviewing each course for appropriate application of credit (general education, preparation for the major and general electives)" (p. 16). Thus, for those non-traditional students returning from military service, those in the trades, or an individual seeking advancement or job change after years in their technical field, each evaluation will be unique to their level of education and experience. Additionally, transferable credit through military education, trades, and for those with work experience can be vague or inaccessible in educational content transferability and may or may not meet the requirements of a two-year technical associate degree program and transfer. But with the transfer of these credits and in most cases (based on the four-year institution), at present these credits will only lead to the equivalency of elective hours and/or senior institution hours at a four-year institution. Further, these individuals in most cases will still be required to complete university core curriculum (UCC) and core program requirements, which again provides a barrier to the student in enrolling at the senior institution level as a junior and the technical associate transfer.

Dual Enrollment, 2+2, and Transfer Admissions Guarantee (TAG)

According to the College Board (2011), dual enrollment and transfer admission guarantees that a four-year institution, potentially including 2+2 programs, provides a guaranteed enrollment to a four-year institution only if the student(s) "complete an academic contract that delineates the courses and grades they must earn for admission" (p. 14). This agreement may also include a locked-in tuition for degree completion.

Makela et al. (2012) noted that all of the four-year institutions surveyed with applied baccalaureate degree programs followed a 2+2 model resulting in "a clear indication of the intention of the AB to be a fully legitimized transfer model that actively encourages students to follow the available pathway from associate to baccalaureate degree" (p. 35).

The Capstone Option

In a technical report provided to the State of Illinois Board of Vocational Education and Rehabilitation, Wood & Stitt (1975) reported that the Capstone Option

was developed to specifically bridge the gap between the technical associate degree and the baccalaureate by addressing the issue of general education deficiencies that are inherent in AAS degrees. Capstone eligibility reduces university core curriculum/general education requirements from 41 to 30 semester hours, thus eliminating 11 semester hours of coursework.

While completion of an AAS degree is the basic prerequisite for Capstone eligibility, students must also satisfy other criteria:

- Minimum 2.25 grade point average (GPA)
- Ability to complete baccalaureate in 60 semester hours

Additionally, the Capstone Option is not available for all baccalaureate degree programs. Program faculty determine acceptance of the Capstone Option for a given degree. In that way, those programs that benefit from the transfer of AAS degree students can utilize its benefits to attract students, while those programs that emphasize a more traditional liberal arts general education are not obligated to adopt the Capstone Core Curriculum.

Makela et al. (2012) further supports that management capstone programs "are those in which the associate degree program is supplemented with business and management-focused coursework at the upper division" (p. 4).

The Applied Baccalaureate (AB) Degree

Stemming from the need to assist individuals with technical associate degrees and its transferability to the baccalaureate level over the past 40 years, many four-year institutions have developed what is now called Applied Bachelor (AB) degree programs. According to Townsend, Bragg, and Ruud (2008), the applied baccalaureate degree emphasizes applied coursework and learning at the upper division (junior/senior) collegiate pathway, which begins with the technical associate degree.

In a more recent study, Makela et al. (2012) stated that the applied baccalaureate degree offers a pathway for degree attainment in which a four-year degree granting institution has established an agreement with the two-year institution, more specifically emphasis on the transferability of applied associates or degrees (technical associate degrees). They identified the development among four-year institutions to include AB degree programs or designations in the Bachelor of Applied Science (BAS), Bachelor of Applied Technology (BAT), and a Bachelor of Technology (BAT). These baccalaureate degree pathways provide the technical associate applied coursework

and applied learning at the junior and senior levels, ultimately accepting all or nearly all credits from a technical associate degree program.

Conclusion and Future Recommendations

There has been much discussion on improving the process and transferability of a two-year associates degree to a four-year institution (Carnevale et al., 2010; College Board, 2011; Ignash, 1997; Ignash & Kotun, 2005; Makela et al., 2012). The focus of this discussion was the transferability and limitations of the AAS or technical degree. It is imperative that students, faculty, and advisors at both institutional levels develop a formal degree program path (articulation) to ensure students' success when they choose to pursue a baccalaureate degree. It is also vital that four-year institutional leaders and faculty commit to the success of the transfer student.

The College Board (2011) endorses three additional recommendations to facilitate this process:

- Create an institution-wide vision that includes transfer students.
- Treat transfers in outreach, admission, and academic and student affairs with a devotion similar to that of first-year students; and
- Understand that the needs of transfer students may be different than those of first-year students. (p. 28)

As educators, we need to seriously consider the issue of bridging the gap that exists and acknowledge that currently the AAS degree or terminal degree represents a tradeoff: employment today for limited educational opportunities tomorrow. We need to recognize the future needs of those pursuing a college degree. Current and future non-traditional, military, and first time two-year college students are not the freshman of the past that have been given explicit instructions to merge into the higher education environment. These technical individuals are vital to our future American workforce success.

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John T. Legier Jr., Ph.D.



UAS Maintenance Training - An Exciting Opportunity for Technical Education

April 2013

by Terry L. Hunt Ed.D

In today's high-tech society, as new technologies emerge almost daily, there is a demand for highly skilled technicians in many critical areas such as aerospace, computer science and communications. Historically, post-secondary education has responded to the emergence of new technologies and the commensurate industry demand for skilled technicians by developing educational programs that prepare individuals for those key positions. Once again, a new technology is emerging that has the potential of making a significant impact on the economy, the U.S. workforce and ultimately post-secondary technical education. This emerging technology is the unmanned aircraft, which with its associated structures, propulsion, guidance, and control components come together to comprise what is now referred to as the "Unmanned Aircraft System" or UAS.



The Unmanned Aircraft System

To gain an understanding of UAS technology and the opportunities it presents, a brief background is in order. The concept of an aircraft flying and navigating without onboard human control is not new. In just fifteen years after the first flight at Kitty Hawk, Charles Kettering designed an unmanned aircraft that flew under autonomous control and navigated a predetermined 50 mile course (United States Museum of the Air Force, 2007). Twenty five years later, during World War II, Germany developed the Fieseler Fi.103. This unmanned aircraft used a gyroscopic system for stability and control and was powered by a pulse-jet engine that propelled it to speeds

over 450 mph (United States Museum of the Air Force, 2011). By the end of the war American engineers had improved upon the German technology by integrating radio control and television into unmanned aircraft designs allowing them to be controlled in flight from another aircraft and later from remote ground facilities. Until the late 1960's with few exceptions, unmanned aircraft were used as high speed targets for aerial gunnery training with some limited surveillance applications. During the Viet Nam war, unmanned aircraft (called drones during this time) were used extensively in the surveillance role. The Ryan FireBee was the state-of-the-art unmanned aircraft during this era. The FireBee (Figure 1) was capable of operating at altitudes as high as 51,000 ft. at speeds over 700 miles per hour and could be flown deeply into enemy territory to gather information while being controlled from a remote facility located miles away (Combat Air Museum, 2011).

Although the first military use of unmanned aircraft on a large scale was pioneered by Israel in the 1980's the United States built upon the concept and deployed large numbers of unmanned aircraft in the 1991 "Operation Desert Storm". UAV technology has been used in every U.S. military operation since that time.

Unmanned aircraft range from "scale model" sized vehicles that can be carried by troops on the ground to give them "over-the-hill" reconnaissance capability to the amazing Northrop-Grumman RQ-4 "Global Hawk" (Figure 2) that has a wingspan of 130 ft. and can operate at altitudes as high as 60,000 feet with a range of 8,700 miles (United State Air Force, 2012).

Recent developments have now made rotary wing unmanned aircraft a reality. With the integration of computer enhanced control systems with rotor wing flight technology, the ability to have helicopter capability in an easy to fly package has opened up a whole new area of operations for unmanned aircraft systems (Figure 3).

The Civilian Transition

It is not uncommon for a technology that was initially developed for a military application to transition into the private sector with a high degree of success and the unmanned aircraft system is no exception. Historically, growth in the unmanned aircraft sector of the aerospace industry in the U.S. has been driven by the military but since 2004 there has been

increasing interest in unmanned aircraft systems in the private sector. Manufacturers of unmanned aircraft are finding niches for their products in non-military roles and they are rapidly building a track record of success.

Since 2009, unmanned aircraft have been used successfully to gather weather data in the Antarctic, monitor wildfires in Alaska, survey earthquake damage in Haiti, facilitate wildlife conservation in the everglades and assist a sheriff's department in search and rescue operations in Colorado (AUVSI, 2010, p. 7). Additionally, it is anticipated that future uses of unmanned aircraft in the private sector may include pipeline/power line patrol, agricultural aerial application, photography, traffic monitoring, news reporting, sporting event coverage, real estate mapping, mail/freight shipping, and law enforcement. Since unmanned aircraft range from insect to airliner in size, it seems that the future is limitless. Currently the FAA is conducting research to investigate the UAS segment of the aviation industry and is beginning the process of integrating unmanned aircraft operations into the national airspace system (FAA, 2008).

Economic research has indicated that the UAS segment of the U.S. aerospace industry is poised to generate as much as \$82 billion and create an estimated 103,000 jobs by 2025 (Jenkins & Vasigh, 2010, p.20). With such rapid growth, there is an increasing demand for policy makers, managers, engineers and pilots with skills unique to unmanned aircraft systems. Higher education is currently in the process of developing educational programs that will serve these individuals with institutions such as Kansas State University-Salina experiencing as much as a 200% increase in enrollment over the past 2 years (Garrett, 2011). As a result of this flurry of activity in the UAS sector of the aerospace industry it is anticipated that the number of unmanned aircraft operating in the private sector will grow steadily over the next decade. This begs the question, "who will build and maintain these unique aircraft?"

Technical Education and UAS Maintenance

The Federal Aviation Administration has stated in its document "UAS Interim Operational Approval Guide" that "In the future, UAS maintenance technician certification will parallel existing standards for manned aviation (FAA, 2008, p.7)." In addition to the traditional airframe and powerplant related skills required for manned aircraft maintenance, the ground control systems, GPS interface, computerization and peripheral technology unique to unmanned aircraft will require additional training in applied electronics, computer science and data link/information technology (IT). John

Goglia, an aviation consultant and former member of the U.S. National Transportation Safety Board says:

The "digital A&P's" who will work on these complex aircraft will have to have not only all the basic knowledge of what makes an airplane work, but also an understanding of electronics far greater than what's typically found today. The top priorities for these maintainers will be repair of composite materials and electronics (Adams, 2007).



Many vocational-technical institutions have programs in place that could form the building blocks of a high quality UAS maintenance training program with very little modification. A quick internet search located at least 70 vocational-technical institutions in the United States that provide FAA certified aviation maintenance training. Many of these institutions also have programs in electronics and computer science as well. An interdisciplinary cooperative approach between these individual programs would allow for UAS maintenance training program development with minimal expenses associated with curriculum, facilities and personnel. Depending on the administrative structure of the individual institution, these programs may even exist within the same department or college further facilitating cooperation. A certificate program could be created that requires the completion of the FAA aviation maintenance technician program plus a certain number of hours in the electronics/computer science areas for the conferring of a "UAS Maintenance Technician" certificate in addition to the FAA A&P maintenance technician certificate in a manner similar to what is currently being done at the Northland Technical and Community College in Thief River Falls, MN

(NCTC, 2013). If the program were to be centered on the electronics/computer science areas, then a selected set of courses from the aviation maintenance training program could be integrated into the curriculum to provide the aviation skills needed for those students, again leading to a certificate in UAS maintenance. An interdisciplinary UAS maintenance program would allow for the construction of professional development courses for aviation maintenance personnel currently employed in the field that would allow them to earn a certificate in UAS Maintenance to enhance their professional credentials (Figure 4). Regarding workforce refocus or retraining initiatives, a UAS Maintenance Training program would potentially be an attractive continuing education or skills refocus opportunity for individuals who have experience in related technologies who desire employment in the UAS segment of the aerospace industry. Veterans with an interest in a UAS maintenance career could certainly avail themselves of a UAS maintenance program either to add an academic certificate to the UAS experience gained from their previous military service or to gain the necessary technical skills for a position with a civilian entity providing UAS technical support to the military (AUVSI, 2010, p.13). Further, an interdisciplinary UAS program could facilitate the means for interaction between the post-secondary technical institution and high school students in a way that would not only showcase the UAS maintenance career track, but would also emphasize related technical programs offered by that institution in the sciences, technology, engineering and mathematics (STEM). Possibilities in this area would range from targeted recruitment days or functions to specialized “summer camp” experiences such as those being developed at four year institutions in the areas of UAS engineering, flight operations and logistics (ERAU, 2013).

Conclusion

With the current rate of development within UAS technology come many opportunities for the educational community. Now is an ideal time for individual technical institutions to initiate internal dialogue to determine if a UAS maintenance program is a viable option to pursue. In addition, relationships can be built with entities such as local and state and federal government, members of the UAS community, regional business and industry and the military to explore cooperative initiatives with regard to UAS maintenance training program development. Lastly it is suggested that developments and advancements within UAS technology be monitored so that potential opportunities can be identified and responded to effectively.

The flexibility and responsiveness of post-secondary technical education has historically made it a leader in the integration of emerging technologies with educational opportunities. The growing demand for qualified UAS maintenance technicians

once more presents a unique opportunity for technical education to lead in the development of the educational programs to serve this vital and growing segment of the aerospace industry.

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Continued from page 14

Secretary Oates provided updates from Washington and encouraged bi-partisan participation and support for the reauthorization of the Workforce Investment Act (WIA.)

“Commerce, Small Business Administration and Labor put together the Trade Adjustment Assistance Community College Career Training Grants (TAACCCT) which have been life changing.” For a single institution there is \$1.5 M first round and \$30M for consortia first round and \$25 M second round. Businesses should contact their local community college about partnering.

Questions from the floor were about grant support for capital expenditures and equipment purchases. She responded that “we understand the biggest hurdle is equipment.” In the 21st Century we cannot train people unless we have the equipment to train them. Technical education and this organization (ATEA) are based on relevance. Learning is on real equipment. She also encouraged watching the Perkins Reauthorization.

Continued from page 17

KING: WHAT SHOULD EDUCATION TOOL UP FOR?

Gary Booth, Volkswagen Academy: We are at an important time. In 1990 we were talking about the alignment between education and business. Programs like School to Work—never really took hold. The community colleges, TTC and high schools need to find a way to engage businesses. I want to have business fully engaged in the education process. Volkswagen has stepped up and are looking to crystalize the possibility of partnerships through Pathways to Prosperity. I have the sense that something is on the way to engage business in a meaningful way.

Ed Castile, Alabama Industrial Development Training: There are never enough industrial maintenance technicians. Tool and die is needed to get dies repaired. Those are the two main areas. We need a CSI in mechatronics television program Kids have to do something. In Alabama we have “Go Build” to promote technical trades and hands on jobs. It is privately funded. It is having an effect the technical programs are growing.

RESPONSE FROM QUESTIONS FROM THE FLOOR:

Role of Advisory Councils.

Gary Booth, Volkswagen Academy: An Advisory Council does not need to be a course or curriculum advisory group with set meetings. The Advisory Group could convene around a specific topic, business driver or problem that needs to be solved.

WORKING WITH JAPANESE MANUFACTURER TOYOTA AND NOW GERMAN APPRENTICESHIP PROGRAMS WHAT IS THE BIGGEST CULTURAL CHANGE?

Gary Booth, Volkswagen Academy: From an education stand point the dual education system. I had 20 years of Japanese auto manufacturing experience. It was seamless to move from Toyota to Volkswagen. The Apprenticeship program at Volkswagen takes the best of both. There are German standards. The German Chamber of Commerce is looking at it (Volkswagen Academy) to certify it as same as their apprenticeship program. The cultural difference is directness of the Germans as opposed the indirect manner of the Japanese.

Ed Castile, Alabama Industrial Development Training: The auto manufacturers hire from here and put together local teams. Mercedes has been there 20 years building the SUV and are expanding to C-Class cars. Mercedes will hire 1000 employees. They have rich history and loyal employees. They hire who they think is the best fit.

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CREATING PATHWAYS TO PROSPERITY: A DIRECTION-SETTING CONFERENCE AT HARVARD UNIVERSITY

by Ronald D. McCage, Ed.D.

Before I summarize the conference, I would like to offer a couple of personal observations. First, I would like to stress that during my 51 years in Career and Technical Education - interfaced with 28 as an officer in the Active and Reserves Forces of the U. S. Army, I have participated in more conferences and meeting than I ever wish to count; however, I've never been involved in anything that -has the potential of this event long term because I've never seen the level of unified support for making Career and Technical Education the center piece of the American Education System as a means of creating pathways that lead to meaningful careers whether one's goal is to go to college or to go to work. My second observation is that when you read my summary statements below you'll probably going to say that there's not much new here and on the surface I would tend agree. In fact, when I first read the Pathways to Prosperity Report my first reaction was that there wasn't much there that hadn't been in other reports such as "A Nation at Risk" or "The Forgotten Half". However; what's new and very different is who's saying it and the power of those saying it with deep conviction. However; what's new and very different is who's saying it and the power of those saying it with deep conviction.

Dr. Ron McCage

Former President and Executive Director
Career and Technical Education Consortium of the States
ATEA Trustee

On March 18-19, 2013 over 400 leaders from business, industry, education, and government along with several economist and researchers gathered at Harvard University to discuss what should transpire next given the impact of the February 2011 report from the Harvard Graduate School of Education titled, Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century. To grasp the level of interest in this topic, it should be noted that the original intent of the planners was to limit attendance to around 300 invitees from the various stakeholder groups chosen for participation. However, shortly after the invitations were sent out the Harvard Graduate School staff was inundated with others wanting to participate; consequently, a waiting list was established and another 100 or so were invited to participate. In the end the limiting factor was the size of the meeting room for the Plenary Sessions which meant several were still turned away. In fact, the last 100 invited to register had to be accommodated via an audio-visual feed in a separate room during the general sessions and meals.

The conference agenda was very comprehensive and included virtually every topic critical to ensuring that young adults are prepared for what lies ahead whether they choose college or a career. The formal program began with a Plenary Session moderated by Dr. William Symonds, Pathways to Prosperity Project Director, which featured an overview by Dr. Ronald Ferguson, Co-Project Director and Faculty Director at the Graduate School, who stressed that because we are in an Economic War with virtually every other country in the World our first priority should

be to mount a national campaign in support of education with Career and Technical Education being promoted as the primary Pathway to Prosperity with the standards and curriculum being developed through partnerships of business, industry, education and government representatives.

Nicholas Pinchuk, Chairman and CEO of Snap-on Incorporated, himself a product of Career and Technical Education (CTE) said he believed that all education should be CTE. Dorothy Stoneman, Founder and CEO, Youthbuild USA, stressed the value of CTE to those students that had dropped out of school, were in prison or resided in depressed communities. Willard (Bill) Daggett, Founder and Chairman of the International Center for Leadership in Education, Inc. stressed the need for increased rigor in CTE since those who pursue career pathways contained in a majority of the 16 Career Clusters actually need higher academic skills to succeed since the reading levels for 13 of the 16 clusters are well above what are needed to pass the standard gate keeper exams for getting into College. Finally, Hilary Pennington, Director of the Generations Initiative and CEO of Jobs for the Future talked about some of the post- secondary initiatives of the Bill and Melinda Gates Foundation.

The second plenary session panel addressed the question regarding, "Where are the Jobs for Young Adults?" with the leadoff speaker being Dr. Jane Oates Assistant Secretary for Employment and Training, U. S. Department of Labor who talked about some of the Departments work at the post-secondary level and the need to stress the importance of work experience since 30% work prior to graduation.

Assistant Secretary Oates was also the keynote speaker at the ATEA “Setting the Gold Standard in Technical Education March 20-22 in Chattanooga Tennessee. Others on the panel included Moorthy Uppaluri from Microsoft Global Academics Programs, David Bozeman, Vice President Integrated Manufacturing Operations Division of Caterpillar, Rick Stephens, Senior Vice President for Human Resources and Administration for the Boeing Corporation and Andrew Sum, Professor of Economics and Director of the Center for Labor Market Studies at Northeastern University. Following a panel on “Refining Corporate Social Responsibility” moderated by Jon Spector, President and CEO of the Conference Board the balance of the day along with the following morning was spent in very intense break-outs of five sessions each with five presenters each occurring concurrently.

One of the highlights of the conference was an after dinner panel on Monday evening regarding the value of CTE which was led by David Gergen, Professor of Public Service and Director of the Center for Public Leadership at Harvard School of Government.

While there was no formalized effort during the conference to arrive at a group consequence, there were several things said that definitely had broad based support. Virtually every presenter supported the premise that having a quality Career and Technical Education delivery system is essential to addressing the future economic needs of this country. Consequently, Career and Technical Education should serve as the major pathway for both college and career readiness with the caveat that college does not always mean a four year degree since over 60 % of the jobs in the future will require some form of education and/or training beyond high school but not necessarily four years.

1. All CTE should address the academic, employability and technical knowledge and skills needed for success in career pathway that is delivered through a well-articulated Program of Study that links with secondary and post-secondary –which stresses application and problem based learning.
2. The use of industry driven certifications that address nationally validated standards must be expanded to include the adoption of certain aspects of the European Apprentice System; especially as it relates to standards and qualifications that are jointly developed by business, industry, education and government partnerships.
3. Given the fact that in many states higher education institutions no longer provide teacher education programs for the professional development of CTE staff a major emphasis must be placed on find new vehicles for providing skills for instructors that come to CTE directly out of industry.

4. Given the state of our economy and the need to compete internationally, the United States can no longer ignore the mis-match between the skills students need to obtain in school and the skills workers need to succeed in business and industry.

5. For CTE students to successfully identify and pursue a program study for their chosen career, something has to be done to reform the nation’s guidance system so that it also addresses the issue guidance toward a career as well as guidance for going to college.

Finally, the real purpose of this meeting was to set direction for what happens to the Pathways Project long term as well as how to preserve the progress made thus far. To that end Ron Ferguson and Bill Symonds challenged each person in attendance to prepare and submit the steps that they and/or their institution will take to advance the Pathways to Prosperity Principles. Given that many of the presenters supported using Career and Technical Education as the essential element for creating career pathways and as a vehicle for transforming education Ferguson announced the creation of the Pathways to Prosperity Network as a joint effort between the Harvard Graduate School, Jobs for the Future and six states that are focused on ensuring that many more young people complete high school, attain a postsecondary credential with currency in the labor market, and launch into a career. To learn more go to: <http://gse.harvard.edu/news-impact/2012/06/pathways-to-prosperity-network-launches/#ixzz2ODUg9vdv>.

In closing, I would like to leave you with one thought and in a sense one challenge. Simply stated, when I combine what I saw and heard at this conference with other things I read and observe I can only conclude that the time for Career and Technical Education has arrived and we need to do everything I can to make sure we capitalize on this important moment in time.

Kristal Kleer is the opinion of the author, and as such, is not reflective of editorial or ATEA policy. It is a regular feature in the ATEA Journal. Readers may contribute their professional opinion, not to exceed 750 words.



Ronald D. McCage, Ed.D.
Former President and Executive Director
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