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Publications Guidelines

Publication guidelines for articles can be obtained at www.ateaonline.org.

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The American Technical Education Association (ATEA) was founded in 1928 and incorporated as a non-profit professional education association in 1963. In 1973 the national headquarters was moved from Delmar, New York to Wahpeton, North Dakota. In 2012 ATEA relocated 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 quality of postsecondary technical education focusing on practical teaching ideas and best practices. ATEA recognizes outstanding performance and leadership and provides a network for career connectivity.

American Technical Education Association

Values:
To communicate the role and importance of technical education
To share best practice
To build professional relationships
To identify trends that effect technical education

Mission
The organization is dedicated to excellence in quality of postsecondary technical education focusing on practical teaching ideas and best practices. ATEA recognizes outstanding performance and leadership and provides a network for career connectivity.
FROM THE EXECUTIVE DIRECTOR

Sandra Gehlen Krebsbach, Ph.D., M.S., Executive Director of the American Technical Education Association

Executive Director and Managing Editor

The 2019 national conference is the time of change of leadership at the President's level. Thank you to Dr. Bryan Albrecht for your outstanding and inspiring leadership and welcome to Sue Smith as the new ATEA President, 2019-2021.

The ATEA Journal cover captures the comradery of the ATEA Board as they were about to be convened for their spring meeting in Indianapolis held in conjunction with the national conference. The other cover photo is a group picture. We appreciate their service and their commitment to technical education and ATEA.

At their meeting, the Board authorized the ATEA Business Council. The Business Council will start with 8-10 members, one from each of the 6 regions. Membership is $5000 and the charter is covered on page 11.

The Board of Trustees authorized the Dr. Harry Bowman Outstanding Board of Trustee Award. The criteria based on the attributes of Dr. Bowman’s service is respectfully articulated at the national conference by Trustees Dana Wolff and Dr. James Sherrard on pages 12-13. The first award will be at the 2020 national conference.

ATEA 3 D Futures Competition was held this spring. Thank you to Dassault Systemes for the prizes. The winners were from Chippewa Valley Technical College page 18-19.

There are reports from the national conference “Racing to Industry 4.0” hosted by Ivy Tech Community College in Indianapolis, April 3-5. Thank you Ivy Tech Community College, Sue Smith for chairing. Veeral Turnpacha for chairing the trade show and Cathy Cutchall for coordinating the conference. The keynote by Dr. Randy Swearer, Autodesk VP for Learning Futures, is summarized on pages 20. His message is organizations will have to know how to learn to move with the changes and it will be coworkers who do the teaching and mentoring. Another “co” will be cobots, humans and robots working and learning together to meet the needs of the 2050 population of 10 billion many in the middle class.

Mr. Paul Perkins’ keynote is on page 21. Paul’s keynote received the highest rating for value in delivering on Industry 4.0.

This year the ATEA National Awards were a “South Dakota Sweep.” Western Dakota Technical Institute took student, teacher and the "co" award, Congratulations to Lake Area Technical College for your outstanding program, Electronics and Robotics Technology. Award winners and finalists photos are on pages 14-17.

The Jean Koch Award for a lifetime of achievement in technical education was awarded to James King. Well deserved, page 10.

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The Jean Koch Award for a lifetime of achievement in technical education was awarded to James King. Well deserved, page 10.

We are excited to announce the national conference 2020 will be in New Jersey, co-chaired by Dr. Aaron Fichtner, President of New Jersey County College Council and Dr. Jon Connolly, President of Sussex County College. The fall Region 5 2019 conference is hosted by Dunwoody College of Technology in Minneapolis, Minnesota Oct. 3 and 4. Information is on the website, www.ateaonline.org

Best regards,
Sandra
Thank you for participating with ATEA.
Sandra Gehlen Krebsbach, Ph.D., M.S.
Executive Committee leadership 2019-2020

Mary Kaye Bredeson is the Executive Director for the Center of Excellence (COE) of Aerospace and Advanced Manufacturing at Everett College, Everett Washington. She was appointed in 2003. Mary Kaye focuses on a targeted industry that drives the state’s economy and is built upon a reputation for fast, flexible, quality education and training programs. The COE provides a central point of contact for industry employers to share their workforce needs with all 34 community and technical colleges within Washington state as well as other education and training providers. The COE for Aerospace has been very successful in implementing numerous state and federal Department of Labor grants focusing on building training capacity and transitioning students into high demand aerospace and advanced manufacturing jobs.

Jon Connolly, Ph.D. is the president of Sussex County Community College, Newton, New Jersey. Prior to this appointment to the presidency in 2015, he served in multiple administrative roles in institutions in Maine and Wyoming. He is a graduate of Colby College, Waterville, Maine, with majors in Biology and Geology-Biology; holds a masters of Forest Science from Yale University School of Forestry and Environmental Studies and a Ph.D. in Biological Science from the University of Maine. He has published many peer-reviewed research articles, and has presented at numerous conferences to international audiences and at many higher education leadership seminars.

Dr. Bryan Albrecht has served as Gateway’s President since 2006. Serving as the college’s chief executive, Dr. Albrecht oversees the college’s 70 academic programs, 9 campus and center locations, and the college foundation. Gateway representskenosha, Racine, and Waukesha counties and has an economic impact of more than $400 million annually. In this role, Dr. Albrecht represents the college on more than 50 local, state, and national boards. He supports a comprehensive and vision-driven college, by increasing student support, contemporary programming, positive community partnerships, and innovative classrooms and facilities that reflect the business and industry. Guiding this vision is a team of more than 600 education professionals and 400 industry advisory committee partners. He is central to the transformation of southeastern Wisconsin’s move to artificial intelligence, advanced manufacturing and other technical advancements spurred by the Foxconn location in his area. Dr. Albrecht holds his B.S., M.S., and Ed.S. degrees from the University of Wisconsin - Stout and his Ed.D. from the University of Minnesota.

New Board Members

Marie Price is the Director of Training and Development for the Idaho Forest Group, Coeur d’Alene, Idaho. She is the former Director for Workforce and Community Education at North Idaho College where she oversaw the short term, non-credit courses offered by the Workforce Training Center in Post Falls. She chaired ATEA’s Region 6 conference in 2012 and the Region 3-6 Members conference at the Gigafactory in Reno, Nevada.

She has a bachelor’s degree in psychology from Seattle University, a master’s degree in Recreation Management from University of Montana and an Education Specialist degree in Adult, Organizational Learning and Leadership from University of Idaho. She is a certified Program Planner and certified Contract Training Specialist. Marie is married with two sons. In her spare time she enjoys camping, waterskiing, snow skiing and enjoying all there is to do in Coeur d’Alene Idaho.

Aaron Fichtner, Ph.D. is the President of the New Jersey Council of County Colleges, a nonprofit organization, enshrined in state law, that supports and strengthens the state’s 19 community colleges. The Council is currently working with stakeholders to develop a framework for the future, called Vision 2028, that will articulate a bold vision for New Jersey’s community colleges.

Fichtner served as Commissioner of the New Jersey Department of Labor and Workforce Development from September 2016 to January 2018. He joined the Department in 2010, serving as Assistant Commissioner for Labor Planning and Analysis and Deputy Commissioner.

Before joining state government, Fichtner was the Director of Research and Evaluation at the Heldrich Center for Workforce Development at Rutgers University. Fichtner earned a Ph.D. in Planning and Public Policy from Rutgers University, a master’s degree in City Planning from the Georgia Institute of Technology, and a bachelor’s degree in History from Vassar College.

Dr. Scott R. Mickelsen serves as President of Dawson Community College located in Glendive, Montana, a position he has held since July 2016. Prior to his current appointment, he held the position of Vice President of Academics at GCC.

Dr. Mickelsen is a member of AACc’s Commission of Small and Rural Colleges and was recently appointed by Governor Steve Bullock to the advisory council of Get Outdoors Montana. Locally, he serves on the boards of Dawson County Economic Development Council and Makonka Wellness. Previously, Dr. Mickelsen served as Associate Dean and Interim President at University of Nebraska’s College of Technical Agriculture in Curtis, Nebraska. He has also held positions at North Central Technical College in Wausau, Wisconsin, and at Iowa Lakes Community College in Estherville, Iowa. Dr. Mickelsen received his doctorate in Agriculture Education from Iowa State University; both his MS-Agriculture Education and BS-Agriculture Education from Utah State University and an associate’s degree from Ricks College. He feels fortunate to have worked with some of the best minds in education. Says Mickelsen, “I’ve just had a great career and I feel blessed for that and blessed to be in Glendive.”
Board of Trustees Reappointments

**BROOKS JACOBSEN**

Brooks is a supervisor and instructor in the Lake Area Technical Institute, Watertown, South Dakota's robotics and electronics technology systems program. He joined the ATEA Board in 2013 and was reappointed to his 2nd term. Brooks is the Chair of the ATEA National Awards Nomination Committee. Lake Area Tech Institute, through Brook's leadership, is a strong supporter of ATEA Region 5 conferences, bringing 100 participants to the 2015 conference in Sioux Falls, South Dakota. Brooks serves the National Guard as the Missile Launch Repair Team. Brooks is a graduate of the AAS Robotics Program at Lake Area Tech and a BS in Engineering Management from Grandham University Kansas City, Missouri. He is certified in FANUC and Kawasaki Robotics USA Inc.

**SHAWN MACKEY, Ed.D.**

Shawn Mackey is the Deputy Executive Director for Programs and Accountability for the Mississippi Community College Board, Jackson Mississippi. Dr. Mackey also served as Associate Executive Director for Workforce and Career Technical Education for the MCCCB. Shawn joined the ATEA Board in 2013 and was reappointed to his second term in 2016. Prior to joining the Mississippi Community College Board, he worked in the non-profit sector for 10 years and in higher education for 10 years as an instructor and Assistant Dean of Career Technical Education at Coahoma Community College, Clarksdale, Mississippi. Dr. Shawn Mackey is a three-time graduate of Delta State University with a Bachelor of Science Degree in Criminal Justice (1997), a Bachelor of Arts in Psychology (1997), and a Master’s Degree in Social Science Education (2000). Dr. Mackey received his Doctorate of Education Degree from the University of Memphis in the area of Higher Education Administration (2008). He brings a strong perspective to the Board from his direct leadership and experience with workforce development.

**CHELLE TRAVIS**

Chelle Travis, Director of Workforce and Economic Development for the Tennessee Higher Education Commission, was reappointed to a 4th term on the ATEA Board of Trustees. Chelle has served as the Assistant Vice Chancellor for Student Services for the Tennessee Colleges of Applied Technology, Tennessee Board of Regents. Chelle led the system’s SkillsUSA programs and competitions; worked with the Tennessee Promise and Tennessee Reconnect Programs as well as the N3C Certifications system wide. Chelle was the 2013 ATEA national conference Co-Chair along with Mark Lentz, Director the Nashville TCAT held in Chattanooga and the 2017 national conference held in Nashville. She serves on the ATEA National Awards Committee and is dedicated ATEA Board member offering the student perspective and experience from other national programs. Chelle is a graduate of Middle States Tennessee and is working on a graduate degree.

**VICTOR BRANCH**

Manager of Education Training & Digital Tools for Mississippi State University Bagley College of Engineering CAVS Extension in Canton Mississippi. He is the facility administrator over mechanical, environmental and building maintenance. He is a Master Technical Trainer with over 25 years of experience that includes stand up (classroom), Synchronous (e-learning is a virtual classroom), Asynchronous (e-learning online) in private industry and state school system. He received his B.S. in Computer Science from University of Arkansas in 1976. His passion has been in Technical Education and Skills Training from high school to the factory floor and executive management. He is certified as a Master Trainer on several software Computer Aided Design (CAD), packages such as CATIA, SolidWorks and AutoCAD.

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Dr. James (Jim) Barrott currently serves as Executive Vice President, Technical College (TCAT) at Chattanooga State Community College. Jim started with Chattanooga State as a full-time faculty member teaching CAD/ CAM and has served in various campus leadership roles over the last 33 years, with 14 years as Vice President. Known for his innovative approaches to program and workforce development, he is the founder of the Volkswagen Academy and the Walker Institute concepts and programs. Jim has a fervent passion for technical and STEM education and the role they play in our society. He earned a Bachelor of Science Degree in Design Graphics Technology from Brigham Young University, a Master of Science Degree in Engineering Management from the University of Tennessee-Chattanooga, and a Doctorate of Education Degree from the University of Tennessee-Knoxville. In the community, Jim currently serves on the Steering Committee for Chattanooga 2.0, as Chairman of the Board for the Cherokee Area Council, Boy Scouts of America, and as a Counselor in the Chattanooga State Presidency of The Church of Jesus Christ of Latter Day Saints. He and his wife Sue live in Lakelands, TN and are active in family, church, and civic responsibilities, and thus far, five of their eight children have graduated from college, all in STEM disciplines.

Cliff Wightman began his career at the Crossville campus and with the Tennessee Board of Regents (TBPR) system in 2007 as a machine tool technology instructor, following an 18-year career as a machinist and engineering technician in the private sector, including 12 years at Delbar Products Inc. in Crossville. He served as TCAT-Crossville’s marketing and industrial training coordinator from 2012 to 2015, when he was elevated to assistant director. He was appointed president in 2017. Wightman’s experience ranges from the teaching to the finances and building projects. He maintains relationships with industry and the community to promote continuing education and partnerships with our community colleges. “I firmly feel that my entire life has evolved into where I am today because of the education I received as a student here, and I can convey to area residents the need for skilled training to change their lives for the better.”

After his high school graduation, Wightman continued his studies at TCAT-Crossville and graduated from the machine tool technology program. He later earned an Associate of Applied Science in general technologies at Roane State Community College, a Bachelor of Science in interdisciplerary studies at Tennessee Technological University and a Master’s in Business Administration from Bethel University.

Wightman also attended the Tennessee Colleges of Applied Technology Leadership Training Academy and has been a presenter at the Tennessee Board of Regents’ New Faculty Institute. He has attended team member training at the Council on Occupational Education, the national accreditation agency for technical colleges. Wightman also serves on the National Education Team for Skills USA.

Cliff Wightman
President, Tennessee College of Applied Science, Crossville
Tennessee

Jimmy Hodges began his career as a machinist in 1981 in Cullman, Alabama at what was then known as Speedring Ultra-Precision machine shop. He spent the next 19 years in a variety of manufacturing positions, primarily in the aerospace industry in the North Alabama region. In 2000, Jimmy began his career as an educator teaching Drafting and Design at the Earnest Pruett Center for Technology and working as an adjunct drafting instructor at Northeast Alabama Community College. He was hired at Wallace State Community College in June 2009 as the Drafting and Design department chair and accepted the position of Dean of Applied Technologies in November 2011. Since that time, he has worked diligently to improve and expand the technical programs at Wallace State, working very closely with business and industry to ensure current and relevant program offerings. Wallace State’s technical programs consistently rank among some of the best in Alabama and even the nation with regard to SkillsUSA competitions and nationally recognized certifications. Jimmy and his wife of 35 years, Lynn, have three children, Matthew, Laura, and Ginny. All three are educated and employed and have given Jimmy and Lynn six wonderful grandchildren, three girls and three boys, which are the center of Jimmy and Lynn’s world. Jimmy is very excited about the future of career/technical education.

After completing the machining program at Wallace State Community College, Jimmy Hodges began his career as a machinist in 1981 in Cullman, Alabama at what was then known as Speedring Ultra-Precision machine shop. He spent the next 19 years in a variety of manufacturing positions, primarily in the aerospace industry in the North Alabama region. In 2000, Jimmy began his career as an educator teaching Drafting and Design at the Earnest Pruett Center for Technology and working as an adjunct drafting instructor at Northeast Alabama Community College. He was hired at Wallace State Community College in June 2009 as the Drafting and Design department chair and accepted the position of Dean of Applied Technologies in November 2011. Since that time, he has worked diligently to improve and expand the technical programs at Wallace State, working very closely with business and industry to ensure current and relevant program offerings. Wallace State’s technical programs consistently rank among some of the best in Alabama and even the nation with regard to SkillsUSA competitions and nationally recognized certifications. Jimmy and his wife of 35 years, Lynn, have three children, Matthew, Laura, and Ginny. All three are educated and employed and have given Jimmy and Lynn six wonderful grandchildren, three girls and three boys, which are the center of Jimmy and Lynn’s world. Jimmy is very excited about the future of career/technical education.
Jean Koch Outstanding Technical Education Achievement Award

Mr. James King received the award for his outstanding life time achievement in technical education on April 4, 2019.

Mr. King's Award Proclamation reads:
WHEREAS, Mr. King, has mentoriously contributed to the improvement, promotion, development and progress of postsecondary technical education and the American Technical Education Association:
WHEREAS, he has contributed and achieved prominence in technical education at the local, state, regional and national levels: and
WHEREAS, he consistently spends significant time and energy in support of technical education; and
WHEREAS, he served for 36 years with the Tennessee Board of Regents, beginning as the Assistant Director at the Tennessee Center of Technology (TTC) at Whiteville 1983-86, then Director at TCC Crump 1986-1997, Director at TTC-Memphis 1996-1997; TCC-Jackson 1997-1999, then Vice Chancellor for the TTC’s then the Tennessee Colleges of Applied Technology until 2017 when he was appointed Executive Vice Chancellor, completing his career as President of the Northeast State Community College
WHEREAS, he has served on the Board of the American Technical Education Association as president for three terms from 2007-2011, hosted landmark American Technical Education Association national conferences in 2008 and 2013 in Chattanooga and 2017 in Nashville where there was a record 700 attendees.
WHEREAS, Mr. Kings applied his professional character, depth of knowledge and experience to inspire innovation that benefited students, employers, technical colleges and their states
WHEREAS, the trustees of the American Technical Education Association wish to recognize the outstanding career and contributions of Mr. James King and express its appreciation for his superb leadership; and
NOW, THERE FOR I, Bryan Albrecht, President, do hereby confer the Jean Koch Outstanding Technical Education Achievement Award on Mr. James King on April 4, 2019

Dr. Bryan Albrecht
President ATEA Board of Trustees
Good afternoon everyone,

Even though we come from many different states, educational institutions, and various industries, it is certain that we all have one thing in common: our admiration of a man who had a positive attitude and outlook in life, loved his family and friends, and was passionate about education. That man, of course, was Dr. Harry Bowman.

Please allow me to share a few testimonials that came into ATEA with the sad news of Harry's passing.

- Harry was an inspiration. His love for education and especially technical education was unsurpassed. He helped make ATEA the leading post-secondary technical education advocate that it has become. He was dear colleague and will be missed.

- Harry was a dedicated, inspirational and passionate leader for our profession.

- He was so dedicated to ATEA and it will be hard to replace our historian, parliamentarian, and keeper of the by-laws.

- Harry was an inspiration to all humanity, a rare individual that was a gentleman, scholar and mentor. I will never forget the years we served together on the Board and I always looked to Harry for wisdom and forethought.

- He was super intelligent, passionate and dedicated and a man of faith which showed through everything he did. I would also add that I know of no one who has contributed more to postsecondary technical education than Harry Bowman has. His impact is absolutely astounding. He will be deeply missed by all who knew and appreciated him.

Debbie, his wife, shared a commencement address and he titled it "Selected Character Traits of Tiger" (Memphis State University) to achieve fulfillment in life. Harry lived these:

T - truthfulness: honestly, fairness, and integrity were the foundation for his relationships with others.

I - idealistic: seeking to attain the highest level of excellence possible in all his endeavors.

G - generous: in sharing his gifts of expertise and resources to benefit others. He readily gave his time, talent and treasure.

E - energy: as he applied his abilities. He strove to be efficient and enthusiastic in life.

R - responsibility: to his faith, his family, his friends, his profession, and his role as a member of the community and the world.

Harry enjoyed is work with ATEA and treasured his many friendships with ATEA colleagues. He especially looked forward to reminiscing with James King about their shared past; participating in new adventures with Harry enjoyed is work with ATEA and treasured his many friendships with ATEA colleagues. He especially looked forward to reminiscing with James King about their shared past; participating in new adventures with Harry enjoyed is work with ATEA and treasured his many friendships with ATEA colleagues. He especially looked forward to reminiscing with James King about their shared past; participating in new adventures with

In 2016, Harry wrote: I participate in ATEA because it is the top / premier / first class professional development organization for post-secondary technical education in the United States. It is the only organization that focuses solely on post-secondary technical education in the country.

Harry was appointed to the ATEA Board in 2003 and served 15 years as an active board member. Although there will be a void left by Harry's passing, his legacy of dedication, service, insight and humor will live on in multiple ways. For one of those ways, ATEA would like to recognize an outstanding board member annually starting next year at the national conference with the Dr. Harry Bowman Outstanding Board Member Award.

Truthful, Idealistic, Generous, Energetic, and Responsible – May Harry's own words be a lasting gift and a challenge to us all. We are all better for having been associated with Harry and will there be a void at both the table of education and the ATEA organization.
Outstanding Technical Student Award Winner 2019
Dani Hersrud, Associate of Applied Science in Surgical Technology Program, Western Dakota Technical Institute, Rapid City, South Dakota.

Dani graduated May 2019 as a Surgical Technician. She also holds a Bachelor of Science in Occupational Education which she earned in 2010 from Wayland Baptist University, San Antonio, Texas; Army Medic US Army, San Antonio, Texas April 2002-2005. A former Data Technician, JSW Diversified, San Antonio, June 2011-2012 responsible for installing data lines, phone lines and fiber-optic cables. She was the only female technician, Dani received the award for excelling in all of the criteria for the award, exceptional student, volunteer, community service and leadership. Dani is a model for others of having a bachelor’s degree and moving into a certification field for her BS in Occupational Education to a Surgical Technology AAS degree. This is the roadmap for employment and ultimately promotion or teaching which is Dani’s goal.

ATEA 2018 Outstanding Technical Teacher
Jade Hollister, Surgical Technician Instructor, Western Dakota Tech, Rapid City, South Dakota

Jade was recognized by the Vice President for Teaching and Learning, Tiffany Howe, for her ability to innovate, organization, and effortlessly handling of any increase in her workload.

ATEA 2019 Outstanding Technical Teacher Finalists

Rebecca Russell, TCAT, Knoxville 2018

Dwight Murphy, President of Tennessee College of Applied Technology, Knoxville wrote in his nomination letter that Rebecca (Becky) is on the cutting edge of providing learning materials to students on day one. She is part of Digital Engagement Initiative Pilot Program and is providing all students access to materials on day 1. She also consulted with cosmetology programs at Elizabethon and Crossville TCAT’s on board laws and rules, equipment, curriculum and supplies. Counselor Boyd Hestand commended her transforming for their SkillsUSA high school regional competition and state competition. Student nominator, Rei Norris, said, “Ms Russell, has inspired them to be the best version of themselves in regards to their field.”

Diane Jackson

Ms. Jackson is the department head of Business Operations, the largest department at the TCAT with 7 programs and 10 faculty members which was noted along with her instructional abilities by Dr. Mike Ricketts, Dean of Tennessee College of Applied Technology-Chattanooga. The student nominator, Andrea Boston, wrote, “She has a great personality and will lift the rain on a bad day.” Associate Vice President, Mosunmola George-Taylor, Ph.D. wrote that Ms. Jackson’s students get an education related to both soft and technology skills.
Outstanding Program Award Winner 2019
Electronic Systems Technology/Robotics (EST/ROB)

Lake Area Tech Institute has been offering this program for 53 years, the foundation of electronics has stayed the same but the content has evolved including robotics, collaborative robots (cobots) and Autonomous Guided Vehicles (AGVs). There is a 94% placement rate and an articulation agreement with South Dakota State University in Electronic Engineering or Manufacturing Engineering Technology. Industries in Watertown, South Dakota are 3M, Daktronics, Basin Electric, Valley Queen Cheese, Trail King, Orthotol Power, Agropur, Horton, NASA, Wang Electronics and automated dairies. The program students are supported by Build South Dakota (BDS), a scholarship with a commitment to work in the field in South Dakota for three years. Industry provides additional scholarships.

The program is “Industry Facing” meaning it responds quickly to needs of partners. Their board is made up of 30 industry partners, a student, a South Dakota Department of Labor, and Lake Area Tech support staff and administrators. Robot Games is an annual event where students collaborate, work in teams and use their knowledge to construct a robot. 3M recently awarded a $100,000 grant for Fanuc Robots and associated training.

Electronic Systems Technology/Robotics participates in a free Community by offering a 3D Printer class. They developed the Makerspace program at LATI. The students provide mentoring with their program to support the project based learning.

President Michael Cartney wrote in the nomination letter that “you would be hard pressed to find a program with higher competition, retention, and placement rates.” LATI Robotics will be the only two year post-secondary program in the nation to provide COBOT and Autonomous Vehicle Technology by National Instruments Standards and Technology (NIST).

Advisory Board member, Mike Rawlinen, Senior Engineer, Pivotal Health Solutions commended the faculty for listening and responded with changes in the curriculum. Advisory board members participate in the capstone projects and get to know the students. Matthew Neuberger, Service Manager, Dakota Fluid Power commended the students as thoroughly trained and confident in troubleshooting, mechanical and critical thinking skills.

Nominations for 2020 ATEA National Award
September 1 will be time for the ATEA Board of Trustees to review nominations for the 2019 ATEA National Awards. The will be due Tuesday December 3, 2019. We encourage you to review the criteria posted on the ATEA website and nominate a worthy colleague, student, or program for an award. They will appreciate your recognition. The awards are outstanding technical student, outstanding technical faculty, outstanding program and the Silver Star of Excellence to a business exemplifying the standard for supporting technical education. It is jointly awarded with the National Technical Honor Society. The awards will be presented at the 57th ATEA national conference on technical education, On Tools, March 21-23. There will be an Awards dinner on Wednesday March 21, 2018. National conference updates will be on ateeonline.org, ATEA’s website.

Nomination forms and details will be emailed on September 1 and available on the ATEA Website.

Regional Health is very generous in providing several medical programs at Western Dakota Tech with supplies, including surgical, laboratory, and medical simulation materials. These contributions save Western Dakota Tech money each year and shows Regional Health’s clear commitment to health-related education. Recently, Western Dakota built an 8,500 square foot medical simulation center to provide state-of-the-art training to students as well as community healthcare providers. Regional Health was integral in that project. In fact, the simulation center is designed to look like Regional Hospital, and Regional Health’s leadership and staff were very generous in giving input and granting access to their facilities to ensure the simulation experience at Western Dakota Tech closely mimics the actual look and feel of the largest healthcare facility in our region.

Regional Health has also provided training for Western Dakota Tech Faculty and students at their facilities for no charge to the College—most recently an opportunity for the surgical technology students to learn about the Da Vinci Robotics operating technology. Regional Health routinely provides conference room space for large association meetings held by many of Western Dakota Tech’s medical programs. In addition, they have provided HIPAA training and countless hours of clinical space and preceptor time for Western Dakota Tech’s LPN, surgical technology, medical lab tech, phlebotomy, and paramedic program students at their sites. The medical director for Western Dakota Tech’s paramedic program is the current Chief Emergency Officer at Regional Health. As part of its commitment to health education, Regional Health provides facility space to two nursing schools, the South Dakota State University nursing school and the University of South Dakota nursing school. This facility allows training that otherwise would not be available in our community.

Regional Health has also partnered with Western Dakota Tech, South Dakota State University, the University of South Dakota, and the other community health groups to develop a regional Area Health Education Center (AHEC). This Center will provide resources for community health training and medical field “pipeline” development in western South Dakota. Regional Health also has hospital, clinics, and long-term care facilities in smaller communities that serve residents of rural western South Dakota. These facilities are critical to the AHEC program and the goal of sustaining quality healthcare in rural areas of our state.

Western Dakota Tech holds an interdisciplinary simulated mass casualty event each spring semester to give students an opportunity to practice their skills in conjunction with students from other programs. To carry out a training session this year, the college mobilized volunteer staff. Over the past three years, Regional Health has sent employees from many different departments, including emergency doctors, to mentor students and carry out a variety of simulation roles.

Not only does Regional Health provide educational benefits to its employees to Western Dakota Tech, but also the reverse. Western Dakota Tech program, but this year, Regional Health has stepped up to provide Western Dakota Tech matching funds so that three of Western Dakota Tech’s LPN programs can attend nursing school on a full-time scholarship. Regional Health is also a major employer of Western Dakota Tech’s total graduating class of 2017.

Regional Health has also partnered with the schools to create the Career Pathways Framework, creating educational opportunities for students in health science programs, since the hospital system hires graduates from those programs as well. Currently, Regional Health has 20 employees from varying departments that participate in 10 different Western Dakota Tech advisory boards. Regional Health’s ties to Western Dakota Tech are such that Regional Health’s representatives on Western Dakota Tech advisory boards are often Western Dakota Tech graduates’ immediate supervisors, so their advice and insight are highly valued.

Representatives from Regional Health also sit on the College’s community-based “Skilled Workforce Advisory Council” (SWAC) and on the College’s Foundation Board. Regional Health has provided ideas and feedback about potential future medical field related programming including Diagnostic Medical Sonography and Physical Therapy assisting in that process.

The Rapid City Area School District has also benefited from the participation of Regional Health employees as the district has undertaken the development of a career pathways framework for the high school curriculum. Regional Hospital employees have been members of the “STEM2” taskforce, the district’s “Pathways Taskforce,” and the medical device pathway work group. Regional Health was also a co-sponsor of the district’s 8th grade career fair, which was held on the Western Dakota Tech Campus. Their participation in these efforts benefits students, employers, and our community.

Western Dakota Tech is very grateful to Regional Health for the multiple layers of support they provide to Western Dakota Tech, not just Western Dakota Tech’s medical-related fields. Regional Health System has earned every ounce of the recognition the ATEA Silver Star of Excellence Award bestows.

Thank you very much for your consideration of this proposal.
ATEA 3D-Futures Competition Winners

The American Technician Education Association announced a new student competition featuring student design solution to real world problems: ATEA 3D-Futures Competition. The intent of the competition was to demonstrate the knowledge, skills, and digital tools that are required in industry today. Students had to identify a problem or opportunity related to their field. The solution had to use digital technology or be based in digital technology. Entries were judged on the following criteria: Statement of the problem or opportunity; Solution described and/or demonstrated; Description of the digital tools used and Quality of presentation materials. Entries were submitted electronically in the form of a 3-minute video. The submission video could include any media: live video, screen captures, PowerPoint charts with narration as required to cover the necessary points.

Thank you Dassault Systemes for the support of this competition. Dassault Systemes provided the prize money of $1500 first prize, $1000 2nd and $500 third. A six person national panel including academics and industry judged the entries. Thank you Dassault Systemes for the support of this competition. Dassault Systemes provided the prize money of $1500 first prize, $1000 2nd and $500 third. A six person national panel including academics and industry judged the entries.

AL BUNSHAFT
SVP for Global Affairs, Dassault Systemes
presenting the recognition award to Jeff Sullivan, Dean of Technical and Skilled Programs, Chippewa Valley Technical College, Eau Claire, Wisconsin

KARA LEARNING MECHANISM
1st Prize Kara Learning Mechanism, Chippewa Valley Technical College, River Falls, Wisconsin
In the field of technology, one tool that hasn’t been seen much use yet in most technical colleges is Machine Learning. Machine learning has been a great success in the fields of image and language processing. Our main goal is to apply the same ideas to the problems of processing and learning force and motion in mechanical systems. In this design, we are going over how we at Chippewa Valley Technical College believe that Machine Learning is a great learning opportunity for anyone interested in Mechanical Design, Math, Electronics, and Computing. Kara as a mechanism is very simple. Its whole design purpose is to be a simple mechanism that easily explains the basics of machine learning. We have used SolidWorks to design it and Mojo and Form 2 3D printers to manufacture it. It uses two motors and an Arduino board to execute the code of our Machine Learning Algorithm. Using this algorithm, both motors are able to learn from one another, the goal being able to sync up their movement. When one motor moves, the other should follow in perfect synchronization and the industry internet of things but they do not know how to.

THIRD PLACE WINNER FILES FOR A PATENT


ROBOTIC ARM AND GRIPPER
2nd Place Chippewa Valley Technical College, River Falls, Wisconsin

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In the field of technology, one tool that hasn’t been seen much use yet in most technical colleges is Machine Learning. Machine learning has been a great success in the fields of image and language processing. Our main goal is to apply the same ideas to the problems of processing and learning force and motion in mechanical systems. In this design, we are going over how we at Chippewa Valley Technical College believe that Machine Learning is a great learning opportunity for anyone interested in Mechanical Design, Math, Electronics, and Computing. Kara as a mechanism is very simple. Its whole design purpose is to be a simple mechanism that easily explains the basics of machine learning. We have used SolidWorks to design it and Mojo and Form 2 3D printers to manufacture it. It uses two motors and an Arduino board to execute the code of our Machine Learning Algorithm. Using this algorithm, both motors are able to learn from one another, the goal being able to sync up their movement. When one motor moves, the other should follow in perfect synchronization and the industry internet of things but they do not know how to.

Our task is to create a gripper that has the ability to pick up multiple objects of various sizes, shapes, textures and hardness. We also needed the gripper to be able to be attached to a robotic arm so the gripper is able to pick and place whatever object it needs to. Our gripper uses magnetic connections on multiple different designs, making it diverse. Using diameters from a plastic bottle and a pencil, two of the finger designs were then 3D printed. However the 3rd finger, is designed to be adaptive and flexible for many different objects. This adaptive finger was printed with flexible material, as well as adding hinges to the frame, giving it the ability to flex. Our manipulator arm is built to be both compact and modular. By being modular it gives us the ability for multiple configurations, and has an appealing look. The arm also houses a small electric motor which creates the side to side movement. The modular pieces were crucial, giving the arm the ability to be portable and adaptive depending on use.

We leveraged In-Context design across our design process which gives us an ability to edit the sketch and features of the part in the assembly context. This approach saves designing time and effort because we can see the preview of the change and its possible effects in our design.
Learning in the future is a continuous process of improvising, being aware of your surroundings, approaching complexity in the moment, and in general, learning in the moment while applying what you know. It’s less about majors or stocks of knowledge and more about the mission of continuous, unending, passionate learning.

2050
Today there are 7-1/2 billion people on the planet, expected to be 10 billion by 2050 and 15 billion per minute are entering the middle class. They will need motorized transportation, housing, sofas, and computers, all of the things that are definitional for entering the middle class. Each and every one of them will need a motorized vehicle, housing, and computers, because they are definitional for entering the middle class. Each and every one of them will need a motorized vehicle, housing, and computers, because they are definitional for entering the middle class.

2050 is a cool feature that we got some early feedback on that people really like. You can actually see yourself grow over time, right? There’s a team view which a lot of professors get very excited about, because it allows them to see the competencies of an entire class. And click on an individual to see what they’re doing to learn more about what they know and what they don’t know. The currency of work today is teams. Autodesk team builder software allows you to automatically assemble teams. The team manager can select one or a group of tasks that define the purpose of the team. So in this case, the work that they’re doing is important in the area of rendering, modeling, and generative storytelling. You add one person and you can see they have some skills, but you need them. And you can continually add until you get most of the functionality you need and most of the skill set and knowledge you need. You can even auto-populate to create the optimal team.

Proximal learning will be recognized as needed for at organizational level. How will you teach and mentor will become a fundamental skill for future industry. It’s not just applying your skill, it’s teaching other people how to apply their skill. You can’t just sit in an individual training program or training room, sit yourself in front of a computer, do X amount of time and be done. It’s not just training, it’s training to the point of being able to mentor others. Autodesk Accumode allows you to visualize who does what, where, or others on the plant floor. Amatrol’s partner, FANUC Robotics, has developed a software called AUTOMODE can be expanded and current educational program content frequently updated. Technologies that were once considered advanced are now commonplace. We should reflect this in our curricula. Conceiving an Ethernet IP address, for example, was once an advanced PLAC topic. This ties into one of the first things required before performing even the most basic task.

Data analytics software is a rapidly growing field that is impacting everything we do. The basic types of data analytics are Descriptive and Diagnostic, which answer these three types of questions:

- Descriptive Analytics—What happened?
- Diagnostic Analytics—Why did it happen?
- Predictive Analytics—What is about to happen?

FANUC’s ZDT software sends notifications to robot users that their robot is about to fail so they can address the problem before the failure occurs. In the first year implemented at General Motors, GM didn’t have a single minute of unplannedrobot downtime.

Data analytics software is a rapidly growing field that is impacting everything we do. The basic types of data analytics are Descriptive and Diagnostic, which answer these three types of questions:

- Descriptive Analytics—What happened?
- Diagnostic Analytics—Why did it happen?
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Advanced Data Analytics includes Predictive and Prescriptive, which help answer such questions as:

- Predictive Analytics—What is about to happen?
- Prescriptive Analytics—How to avoid what is about to happen

As you can imagine, better results are found with Advanced Data Analytics because it has the potential to avoid all failures. This is what FANUC’s ZDT software does.

While the benefits presented by Industry 4.0 technologies are great, these technologies are also creating significant challenges in preparing our workforce. Three major workforce challenges include:

- Upskilling our existing and entering workforce in the use of Industry 4.0 technologies that are already in industry today.
- Training our workforce in technologies that cross the lines of traditional occupations.
- Continuing to upskill our current workforce to keep pace with the accelerated rapid change of Industry 4.0 technologies.

For example, everyone on the plant floor will need some level of networking knowledge. To keep up, incumbent workers need to be upskilled and continue to be updated. Education technology is helping the scope of many occupations needs to be expanded and current educational program content frequently updated. Technologies that were once considered advanced are now commonplace. We should reflect this in our curricula. Conceiving an Ethernet IP address, for example, was once an advanced PLC topic. This ties into one of the first things required before performing even the most basic task.

These new technologies offer many benefits but we won’t be going to be able to keep adding new learning content to educational programs without finding more efficient ways to teach what we are already teaching. A great example of how this is being addressed is at Ivy Tech Community College in Indiana with their Flipped Classroom concept. It uses hybrid learning to minimize teacher lecture and maximize hands-on, student-centered learning. Another excellent example is the Industry 4.0 curriculum being implemented at Gateway Technical College in Kenosha, Wisconsin. GTC created new introductory courses in their Advanced Manufacturing Associate Degree to teach Industry 4.0 courses to both adult and high school students. This program design includes Industry 4.0 throughout the 2-year program and enables the program to advance further because students start their study of Industry 4.0 while in high school. All of this is to say that a lot of change is coming to the plant floor. Much is already here, but even more is soon to come. It will continue to accelerate. The benefit these changes hold for our society is great but only if we have skilled workforce to support and take advantage of this new world.

Learning reciprocity is where the system learns from humans, and humans learn from the system. The future of work will be the joint performance of human and machine. The human’s job is to frame a problem with a computer system and then the computer system creates a solution set that is in turn curated by the human user. This is going to be definitional for industry at 3, 5, 10, whatever.

An example of the relationship between machine intelligence, IOT, and humans learn from the system.

The Future of Industry 4.0
Randy Swearer, Vice President, Learning Futures, Autodesk

We are truly living in an exciting time, with technologies that are greatly changing our lives. The advances in computer technology, internet, networking, and software have enabled us to access information and control our world in ways few would have thought possible, even just a few years ago. These advancements are the elements of Industry 4.0, which is enabling companies to compete in a global marketplace because they can be smarter and faster about how they run their businesses. Success is all about increasing speed to market, reducing downtime, increasing efficiency. Industry 4.0 accomplishes these objectives through smart devices that take less time to program and provide data through networks to data analytics software that can determine the most efficient ways to deliver the product or service.

The following are just a few of the many examples how Industry 4.0 is changing our workplace:

- Smart sensors that monitor their own health and tell the operator to service them before failure.
- Smart photodiode sensors that can tell the operator when their lenses are dirty.
- Machine controllers that adjust to tool wear and change their own programs to compensate so they continue to make good parts that would otherwise be scrap.
- Vision systems on robots that locate parts without precision fixtures, and thereby reduce setup time.
- Automatic guided vehicles that are faster to program because they use vision, GPS, and sonar location technologies to chart their path through a facility and adapt to unforeseen obstacles.
- Network technologies, such as Ethernet, that interconnect the many control and sensing devices on the plant floor while also connecting them to the internet to monitor, control and analyze data. This is the Industry Internet of Things (IIoT).

IIoT, a component of Industry 4.0, enables components and systems to be quickly installed and easily replaced. With IIoT devices and powerful data communications, much more data can be collected, and control signals can be sent between controllers via Ethernet rather than using miles of discrete hardwiring. The Industrial Internet of Things has also enabled software to be used on the plant floor in new and creative ways. For example, for many years, robot operators used a radio to tell them when a machine needs maintenance. It will be a PUSH notification, or text message, sent to a smart phone. The notification doesn’t even have to come from the operator; that PUSH notification will more likely come from a machine that signals the operator to service it.

The large amount of data collected through IIoT devices and networks also presents the opportunity to analyze problems that aren’t obvious to operators or others on the plant floor. Amatrol’s partner, FANUC Robotics, has developed a software called Zero Downtime Maintenance, or ZDM, which monitors robots across the world via the Internet 24/7 and spot trends through Big Data analysis.

Industry 4.0: Shaping the World
Paul Fitzsimons, President and CEO of Amatrol “Smart Factories”"
From Scaling to Upscaling the Workforce for an Incentivized Industry, the experience of Truckee Meadows Community College 2016-2019

Sandra Gehlen Krebsbach, Ph.D. in consultation with Barbara Walden, Interim Dean Technical Science, Truckee Meadows Community College, Reno, Nevada

In 2014 Tesla was awarded by the State of Nevada $2.5B in tax incentives for creating 6500 jobs. This was to be done over a five year period. ATEA was interested in how Truckee Meadows Community College in Reno would respond and what might be the lessons for other technical colleges facing the same challenge.

On November 9-10 2017 ATEA held a 2017 members conference in conjunction with Truckee Meadows Community College, Reno, Nevada, to learn about the impact of the Gigafactory on Reno and how Truckee Meadow responded to the workforce training needs at the largest battery factory in the world. The Gigafactory is owned 80% by Tesla and 20% by Panasonic but at that time the space utilization and number of employees were the reverse, Panasonic had 80% of the workforce. Tesla wisely partnered with this global leader in batteries with generation of experience and expertise.

Truckee Meadows responded to the challenge to scale up an entry level manufacturing workforce in a region of service industries (casinos, retail, entertainment, etc.) In preparation for staffing the Gigafactory project, TMCC converted the instructor led Advanced Manufacturing program to a modularized (half-credit), flexible delivery format. Working with the employers, college then built two customized pre-employment programs for material handlers (4 credits) and production operators (6 credits) that prepared workers to enter manufacturing and provide a stackable pathway to a credit based skill certificate. This was known as the P3 program. TMCC created a position to manage students, communicate with the companies and build relationships with Tesla and Panasonic. That position attended Gigafactory recruiting events, some at Truckee Meadows going through in a year. Truckee Meadows was able to quickly build workforce credentials to meet the need by using existing curriculum. Chris Reilly, Director of Workforce Training at Tesla, in an April 2018 interview stated that Tesla had met the workforce creation goal two years early.

From Scaling to Upscaling the Gigafactory Workforce.

A check in with Barbara, March 2019, found the the Gigafactory has changed from staffing to upscaling workers, many of whom came through the initial program. This time it is through apprenticeship programs. TMCC began sponsoring registered apprentices with 1 apprentice in the fall of 2017. The numbers quickly grew to 420 apprentices in fall of 2018, and 475 in spring of 2019. How are they doing it?

They are using many of the same practices as the scaling effort. The same coordinator from the P3 effort communicates the information on the apprenticesships: the expectations; aspects of the program; and the future benefits such as promotion. She meets at the Gigafactory with incumbent employees who then move into the apprenticeship program. Other pathway programs that Tesla had with K-12 connect with Truckee Meadows when the student has graduated from high school and is employed at the Gigafactory. This enables Truckee Meadows to work with subcontractors such as WFDA (Workforce Department Apprenticeship) who work with pathway students who arrive in Reno as high school graduates, stay at the University of Nevada dorms and are becoming apprentices. WFDA offers testing and other support for this age student/apprentice that might be similar to a traditional freshman in college. They then move into Truckee Meadows program when they are employed by Tesla.

Truckee Meadows has developed a training program with two school districts, Sparks and Hugg, Nevada.

Two Regions Connect on “Scaling for incentivized industries”.

By the time of the conference, November 2017 ATEA member Gateway Technical College, Racine and Kenosha Wisconsin, learned that they would be experiencing scaling for Foxconn LCD manufacturing site with a potential 13,000 employees. Gateway used their ATEA system membership to bring the college’s ecosystem of economic development leaders, neighboring Schools of Engineering, K-12 partners, and Gateway leadership and faculty to learn from the Truckee Meadows, Reno and Nevada experience. The Foxconn State of Wisconsin agreement was signed on November 10, 2017 when the college’s ecosystem was in Reno. The President of Gateway and a few other stayed back for the signing. This connection grew into a reciprocal invitation to Racine and Kenosha by Truckee Meadows Community College representatives and the Reno and Nevada leaders they met at the conference.
A Critical Analysis on College Affordability
By Sherteece L. Robinson, Ed.D, Curriculum Specialist, Mississippi Community College Board

Abstract
The debate surrounding making college affordable and providing free tuition at community colleges has become a national conversation and a platform for political campaigns. Due to national pressing issues encompassing access and affordability, policymakers, board members, administrators, faculty, and staff are addressing these matters. Students and the rising cost of tuition raise concerns whether education is affordable. The rising cost of tuition and the diminishing amounts of financial aid, places a huge burden on students and their families. As a result, some students are accruing debt and/or working unlimited hours in an effort to attend college while others are leaving college in debt with no academic credentials. Due to the cost of tuition, fees, course materials, and living expenses, students cannot manage this financial burden without some type of financial assistance. These concerns resulted in states re-evaluating their postsecondary education system. The concept of cost shifting by reducing the cost of education on one population and increasing the burden on another population is another critical issue. These controversial topics have critics debating rather education is a public and/or private good. Due to the national agenda, postsecondary programs need to evolve, resulting in controversy over the years. Sandeem argued that affordability is the biggest issue facing higher education (Bowen & McPherson, 2016). Despite the low tuition costs that two-year institutions provide, the National Center for Public Policy and Higher Education (National Center for Public Policy and Higher Education, 2008) stated that the price for postsecondary education is not affordable for some students and families, but the benefits for providing access and affordability, policymakers, board members, administrators, faculty, and staff are addressing these matters. Students and the rising cost of tuition raise concerns whether education is affordable. The rising cost of tuition and the diminishing amounts of financial aid, places a huge burden on students and their families. As a result, some students are accruing debt and/or working unlimited hours in an effort to attend college while others are leaving college in debt with no academic credentials. Due to the cost of tuition, fees, course materials, and living expenses, students cannot manage this financial burden without some type of financial assistance. These concerns resulted in states re-evaluating their postsecondary education system. The concept of cost shifting by reducing the cost of education on one population and increasing the burden on another population is another critical issue. These controversial topics have critics debating whether education is a public and/or private good. Due to the national agenda, postsecondary programs need to evolve, resulting in controversy over the years. Sandeem argued that affordability is the biggest issue facing higher education (Bowen & McPherson, 2016). Despite the low tuition costs that two-year institutions provide, the National Center for Policy and Higher Education (National Center for Policy and Higher Education, 2008) claimed that after financial aid is awarded, low-income and working-class families have to sacrifice 24% of their income to cover the cost to attend a two-year college. Although, Wiener (2015) questioned the reason for tuition skyrocketing over the years; Bowen & McPherson (2016) pointed out that there has been a spike in tuition prices over the past decade due to a decline in state funding. Slaper & Fonton (2013) mentioned other reasons to consider for the rising cost of tuition could be a result of increased operations and facility costs. Dickler (2019) affirmed that during the recession, a decline in public funds caused the increase in tuition. As a result of the rising cost, many are questioning the value of higher education (Cubberley, 2015). The price for postsecondary education is not affordable for some students and families, but the benefits for providing access and affordability programs specifically for career and technical education (CTE) could result in a positive return on the investment for students, institutions, and local communities. Career and technical education allows students to pursue a specialized program of study resulting in a shorter timeframe to degree completion. This pathway gets students into the workforce in a shorter period of time so they can start earning or increasing their wages. As the world becomes more competitive, institutions must continue to generate more college graduates and highly skilled workers. Therefore, it is imperative that states and institutions continue to provide the educational foundation that will propel students to become competitive and productive citizens in society.

The Controversy of Free Tuition
The landscape surrounding making college affordable and providing tuition-free community college programs has evolved, resulting in controversy over the years. Sandeem argued that affordability is the biggest issue facing higher education (Bowen & McPherson, 2016). Despite the low tuition costs that two-year institutions provide, the National Center for Policy and Higher Education (National Center for Policy and Higher Education, 2008) explained that due to the rising cost of tuition, higher education has become less affordable to students. The rising cost of tuition places a huge financial burden on some students as they struggle to pay the cost for their education. Many conversations exist regarding tuition-free community college programs, placing it at the forefront in postsecondary education. Kelly (2016) explained making college tuition-free is a way of price control which could result in lowering the chances of students completing a degree. Bowen and McPherson (2016) asserted college is a shared cost that should be equitable and affordable but not free. Research supports the need for students to pay for a portion of their postsecondary education because states are rapidly becoming minority shareholders in higher education (Slaper & Fonton, 2013). On the contrary, Wiener (2015) endorsed that making college free is fair and politically possible. In an effort to increase access to education, stakeholders are addressing this matter. As a result, some states have designed and implemented tuition-free and tuition assistance community college programs.

Tuition-Free and Tuition Assistance Community College Programs
Nearly 20 states offer tuition-free community college programs across the nation (Powell, 2019). The majority of the programs utilize Pell grants and state aid to exhaust the cost of tuition and the remaining balance is covered by their state’s tuition-free college program (Powell, 2019). To qualify for a statewide program, students must meet certain eligibility requirements and some programs require recipients to live and work in the state for a period of time upon completion of school (Powell, 2019). In Mississippi, the House recently passed House Bill 405 to cover tuition for state residents to attend community college for vocational-technical studies provided they maintain at least a 2.0 grade point average (Pender, 2019). The Mississippi Career-Tech Scholars Program would cover tuition after all other aid (financial, state, and institutional) have been exhausted. Although, this bill did not pass, Mississippi offers multiple tuition assistance programs to assist students. For example, the Mississippi Community College Tuition Guarantee Programs throughout the state that provide free tuition for county residents at participating colleges based upon eligibility requirements and availability of funds (RiseUpMS, 2019). Another initiative provided by institutions include some colleges offering career-technical scholarships for full-time and half-time students. In addition, colleges offer the career-technical student organization Competition Scholarship to Mississippi residents that is full-time, “first-time to enter college” freshmen (career/technical students who have a high school diploma), completed a two-year secondary career/technical program, and have either placed first in a state competition or first, second, or third in a national competition sponsored by a Mississippi Department of Education recognized student organization (Mississippi Gulf Coast Community College, 2019). To assist colleges, the Mississippi Community College Board also supports the public community and junior colleges by awarding CTE Challenge Grants to assist colleges with the initial cost of establishing a CTE program. These grants “fund the establishment of industry specific CTE programs that align to a sector or business and industry within a college district that do not qualify for traditional workforce training dollars” (Copiah-Lincoln Community College, 2019). These programs demonstrate a need to reduce the skills gap, increase per capita incomes, and increase the participants skills. Moreover, research supports the need for students to pay for a portion of their postsecondary education because states are rapidly becoming minority shareholders in higher education (Slaper & Fonton, 2013). On the contrary, Wiener (2015) endorsed that making college free is fair and politically possible. In an effort to increase access to education, stakeholders are addressing this matter. As a result, some states have designed and implemented tuition-free and tuition assistance community college programs.

Recommendations for Practice
Student debt and the rising cost of tuition raise concerns regarding the affordability of education. In an effort to improve affordability, states should consider but not limit their practice to re-examining aid policies, increasing/establishing early college high school programs, increasing dual enrollment, and examining redesigning programs of study. This problem is significant to postsecondary education (to include CTE) through ongoing conversations framed around affordability and accountability. The recommendations include enhancing partnerships, re-examining policy, and improving practice which provide a plethora of information for policymakers and institutions regarding affordability and accountability. This information can be beneficial to policymakers by developing measures to improve access and affordability for students.
References


The Fourth Industrial Revolution is already changing the way we live and work; fusing technologies; and blurring the lines between the physical, digital, and biological spheres. At the same time, technical education is leading the charge to address the workforce skills gap. As these two things converge, it has never been more important to “Connect What’s Now with What’s Next in Technical Education.”

At the Region 5 Conference you will learn about today’s best practices and tackle tomorrow’s challenges. Tour cutting-edge business spaces in a variety of industries, attend breakout sessions that cover a range of technical education topics, explore the vendor showcase, discover innovative teaching practices, and network with colleagues during this three-day conference sponsored by Dunwoody College of Technology.

ATEA 2019 REGION 5 CONFERENCE
REGISTRATION NOW OPEN

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Hosted by Dunwoody College of Technology

October 2-4, 2019 | Dunwoody College of Technology | Minneapolis, Minnesota

ABOUT DUNWOODY
Founded in 1914, Dunwoody College of Technology is the only private, not-for-profit technical college in the Upper Midwest. Having provided hands-on, applied technical education to more than 250,000 men and women, Dunwoody is the college for experimenters and makers, a place where the curious and the confident learn by doing. Located in Minneapolis, Dunwoody offers a unique campus experience in dedicated labs, studios, and shops that treat students like future professionals from day one. With certificates, associate’s, and bachelor’s degrees in more than 45 majors — including engineering, robotics, design and other STEM-related fields — Dunwoody challenges students to come determined and graduate destined.

More information on Dunwoody can be found at dunwoody.edu or by following Dunwoody on Facebook, Instagram, and Twitter.

KEYNOTE SPEAKER

Jason Feist
Managing Technologist, CTO Office
Seagate Technology

Artificial Intelligence: Relevant Analytics, Key Skill Sets & Industry Trends

Jason Feist has 17 years of experience working in the storage industry with hands-on engineering experience in device physics, array control, and product development. He is currently responsible for developing Seagate’s hyperscale cloud and edge storage research technology strategy with emphasis on canonical use cases for data analysis, data storage, data movement, and data security.

During his career, Feist has earned five patents and become an influential leader in the data-storage industry. He has managed a variety of teams and projects, both locally and internationally.

Feist’s career has spanned engineering, market development, product planning, product development, research, and innovation. As a thought leader, he has implemented complex technical solutions in the storage industry related to hardware, software, and systems.

Areas of expertise include:
- Customer Relationship Management
- Product Integration
- Strategy & Development
- Project Management
- Volume Manufacturing
- Data Analytics/Data Science
- Failure Analysis/CAPA/BD