

#24 Please provide information **at least three** business, industry and/or labor partnerships

Business/Industry Name	What role does this partner have in directly supporting your program of study?	How many years has this partnership been active, and how was this partnership developed?
Kansas City Power & Light	This company has support the partnerships by; hiring students for positions, providing speakers, providing site tours, serving on an advisory board, and serving on the plan of study team	13 years
Aquila	This company has support the partnerships by; hiring students for positions, serving on an advisory board, and serving on the plan of study team	9 years
Commenco, INC	This company has support the partnerships by; hiring students for positions, serving on an advisory board, and serving on the plan of study team	7 years
ASCET	This company has support the partnerships by; hiring students for positions, serving on an advisory board, and serving on the plan of study team.	9 years
Blue Scope Construction	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	6 years
Henderson Engineering	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	5 years
Black & Veatch	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	12 years
Martin Sprockets	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	6 years

#24 Please provide information **at least three** *business, industry and/or labor* partnerships

Sioux Chief	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	11 years
Genesys Systems Integrator	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	6 years
WL Cassell and Associates	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	5 years
Johnston Burkholder Associates	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	4 years
R&D Leverage	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	6 years
Bibb Engineers	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	4 years
Ruskin Company	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	4 years
HNTB	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	5 years
AGS Handrails	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	6 years
Preston Refrigeration	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	3 years
Lutz, Daily & Brian LLC	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	5 years
PKMR Engineers	This company has support the partnerships by; hiring students for	5 years

#24 Please provide information **at least three** business, industry and/or labor partnerships

	positions, and serving on an advisory board.	
Lake City Army Ammunition Plant	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	4 years
Kiewit	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	3 years
Butler Manufacturing	This company has support the partnerships by; hiring students for positions, and serving on an advisory board.	5 years



11/20/18

Advance CTE
Excellence in Action Award
8484 Georgia Avenue, Suite 620
Silver Spring, MD 20910

Re: Excellence in Action Award

Dear Awards Committee:

On behalf of Burns & McDonnell, I would like to nominate the Metropolitan Community College (MCC) – Engineering and Technology program for consideration of the Advance CTE Award of Excellence in Action. Our company serves as a business partner with MCC in sponsoring the Burns & McDonnell Design Innovation Lab. This lab at the MCC’s – Business Technology Campus, is in its third semester, with students selected for subsequent semesters. This program was developed through collaboration of our employee owners and the MCC’s – Engineering Technology faculty. We strongly believe this program is an important component of MCC’s entire curricula and is making a difference in the lives of its students and the greater Kansas City Community.

The Burns & McDonnell Design Innovation Lab provides Engineering Technology students an opportunity to address industry challenges while problem solving side-by-side with engineering professionals. Throughout the course, the students not only learn about how to problem solve, but also hone their public speaking skills, presenting content they learned in the previous class segment. In addition to problem-solving and public speaking, they work one-on-one with Human Resources representatives in two classes reviewing their resumes and participating in mock interviews. These activities are designed to help prepare them for their career pursuits.

During our partnership with this program, we have had a total of eight students complete the Burns & McDonnell Design Innovation Lab course. Six students have been hired as full-time employee-owners; one student chose to complete his bachelor’s degree before accepting an internship with us. Due to the successful performance of the initial hires, Project and CAD management are now actively considering hiring six additional students currently enrolled in the program upon completion. This attention to the program and drive to help more of our community has caused us to increase class size from six to nine students each semester. We are delighted to endorse the MCC – Engineering and Technology program because we see first-hand how it is realizing its mission of “Preparing students, serving communities and creating opportunities.”

At Burns & McDonnell we value how partnerships between business and education benefit all constituents involved. We believe the type of learning taking place within the MCC – Engineering Technology programs is preparing students for real-world challenges they will face when entering their career. Every student in this program leaves with a broad range of skills they



will require for success in their careers. We consistently see these students thrive in their roles and are truly well-prepared. We believe this is a wonderful use of time and resources and will continually work together with MCC to expand upon this excellent program. We believe partnership programs like this help turn students' career dreams into employment opportunities and recognize the value of this initiative in the Kansas City area.

Metropolitan Community College's innovative program sets a high standard in exposing students to real-world application of knowledge. We're happy to provide any additional information you may need as you consider this nomination. Please contact me, if needed; I am happy to meet with you and your committee to share more about our wonderful experience at MCC.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gabriel Hernandez'.

Gabriel Hernandez, PE
Burns & McDonnell
Vice President\Transmission & Distribution Services

A handwritten signature in blue ink, appearing to read 'Michael L. Bussinger'.

Michael L. Bussinger
Burns & McDonnell
Staff Electrical Designer

FOCUS

ON TRANSMISSION & DISTRIBUTION

OCTOBER 2018

T&D MENTORS STUDENTS

BURNS & MCDONNELL WORKS WITH STUDENTS AT METROPOLITAN COMMUNITY COLLEGE

Article by Seanmichael Reese, Assistant Electrical Designer, KCM

Since the fall of 2017, Michael Bussinger and I have been working with students at the Metropolitan Community College in the Burns & McDonnell Innovation Lab, the brainchild of Gabe Hernandez (T&D). We have met some amazing students and have developed a course not only to help the students see real world challenges, but also to prepare them for the industry.

Throughout the course, the students have been tasked with challenges like replacing pumps (instructors Kelsey Edwards [OGC] and Jennifer Woods [OGC]), installing and routing a gas-insulated switchgear (instructors Michael Bussinger [T&D] and myself [T&D]), and rolling the phases on an A-frame (instructor Michael Chasser [T&D]). Not only did we challenge their problem-solving skills, but we also wanted to prepare them for the work place.

continued on page 2



Back left: *Jason Saunders (T&D), *Tyler Wharff (T&D), Markus Gentry, Kelsey Edwards (OGC)
 Front left: Seanmichael Reese (T&D), *Daniel Toader (OGC), *Anne Owen (T&D), *Jon Hernandez (T&D), Michael Bussinger (T&D)
 *Students that are now employee-owners

continued from page 1

In a collaboration with Rachel Radmacher (HR), Tara Vance (HR), Jason Banuelos (T&D) and the previously mentioned instructors, we began by interviewing each student to decide if the design challenges were the right fit for the student. Michael Bussinger and I would then



begin working on the students' resumes. We would highlight the experience and rework the layouts to better fit the industry they are about to enter. With these newly freshened resumes, we would conduct mock interviews to better prepare them for the real thing. While this was happening, we were also lecturing and assigning the challenges to the students which had been placed in teams of three.

Each time the students completed a design challenge they would present their solution as a team to a group from Burns & McDonnell and some of the faculty from MCC. We critiqued their solutions and presentations and helped them overcome common missteps through constructive feedback and tips. We loved seeing the different approaches to the problems we had previously resolved. We would give them the bare necessity of information like clearances or a lecture on the basics of electricity, and then we would leave it up to them to create a unique solution as a team. The results were extremely close to the real-world resolution and the students very much enjoyed seeing how close they were.

On March 7, 2018, the Spring semester design challenge had ended, and to cap off an amazing semester, we tasked the students with a final presentation: a culmination of the challenges they worked on, the solutions they created, how they would change their approach, and anything else they wanted to tell the students interested in taking the course in the Fall. "Let's do it again!" exclaimed student Anne Owen (now an EO). "It was challenging but a lot of fun," said student Tyler Wharff (now an EO). The nerves from their previous presentations had seemed to melt away and in front of a crowd almost four times the size they were used to, Michael Bussinger and myself watched these presentations with a sense of pride.

The journey is not yet over for the six students that were selected for the program. Throughout the program the students have been evaluated for positions here at Burns & McDonnell, whether it be internships or full-time. The stand out performers will have the option to continue their journey here with us. It was a pleasure working with these students this year and we look forward to sharing the Burns & McDonnell culture with them in the future. As of today, five of the six students have accepted positions here. The late Roger Hormann was a champion for this program. He loved the chance to see the students grow and how well they could work in a team. He would volunteer to come speak to the students and interview the prospects in order to choose the best candidates. He would attend presentations, to see their growth as well.

Currently, we have started the next group of students for the Fall semester and have changed the challenge to be a substation design. We also want to bring in guest speakers from different Global Practices to explain what it's all about. If you know anyone interested in speaking with the students one night to explain what you do, please contact Michael Bussinger and myself. Also, if you are wanting to host a challenge in a future semester, we invite you to attend a few classes to see what we are doing, and again contact us to set things up. This is an ever changing and evolving program we hope becomes something special that brings Burns & McDonnell and the Metropolitan Community College closer.



11/12/2018

Marcus Million and James Cline
MCC-Business & Technology
1775 Universal Avenue, Kansas City, MO 64120

Marcus and James, please feel free to pass this along to Advance CTE:

To the folks at Advance CTE and the Excellence in Action Award.

I hope this letter finds you well. I'm writing to professionally and personally recommend MCC (Metropolitan Community College) Engineering Technology for the Excellence in Action Award. The Educators and Program are exceptional in every way. We have been working with James Cline for the last several years and now with Marcus Million and they are both exactly what you look for to train students. All instructors and administration at MCC goes the extra mile every time to make sure their students are very well equipped to enter the job market or continue their education.

The staff at MCC has always taken the time to listen to local employers and educational institutions openly.

Top Notch!!

Please consider them for this Award. They deserve to be recognized!!

Sincerely,

Allen Bray
Associate Vice President
Henderson Engineers, INC



Aaron Smith
Career & Technical Coordinator
Independence School District
201 N. Forest Ave.
Independence, MO 64050
(816) 521-5300 Fax (816) -521-5601

To Whom It May Concern:

The Independence School District has had the distinct privilege of working with the Metropolitan Community College over the past 4 plus years in an effort to quicken the delivery of qualified workers to high-needs, high-wage positions in our area. This partnership has been formed in the role of an early college option for some of our students.

With our already existing 33 career-based, elective pathways to choose from at the local high school level, it was easy to plug MCC's program as the capstone experience their final two years of HS in one of 3 different programs, Engineering Tech, Industrial Engineering and Computer Integrated Machining & Manufacturing. Our students attend their campus for roughly 3 hours each day for two years. During this time, they take advanced classes in these programs and end up with roughly 40-48 hours of college credit.

Several of these students in the past have graduated high school and at the same time graduated with their Associate's Degree as well. This was done because they strategically took some of their core content classes for dual credit as well. Two of these students immediately transferred to a 4 year university in Architecture and Engineering as a junior. Both universities accepted all but 1 credit hour of their work. Needless to say, this has expedited their arrival in the workforce two full years. It also provided them an opportunity to receive this college credit at a much reduced rate since the ISD was paying their tuition.

Working with MCC on this project has been very rewarding. We understand we are only one of many districts that are feeding this program, so our handful of students we send yearly for these great opportunities are magnified many times over by the other districts as well.

In the end, MCC has collaboratively worked with the local public high schools to provide a great avenue for our students to gain an early entrance into high-demand, high-wage jobs. They have thoughtfully planned out which trades and pathways to provide as well as worked with us to insure our students have success early and often. We have been proud partners with them in this journey and look to continue this success in the future.

Sincerely,

Aaron J. Smith
Career & Technical Education Coordinator
Independence School District
315 N. Main St.
Independence, MO 64050



Extraordinary Educational
Experiences

Department of Advanced Studies and Postsecondary Readiness

October 30, 2018

Advance CTE
Excellence in Action Award
8484 Georgia Avenue, Suite 620
Silver Spring MD 20910

Dear Advance CTE “Excellent in Action Award” selection committee:

I have the pleasure of providing this letter of support for Metropolitan Community College (MCC) educational programs. As the Director of Advanced Studies and Postsecondary Readiness for the North Kansas City (NKC) School District, I proudly partner with MCC to ensure the continual development of career-based programs of study that challenge students and meet the needs of our community. There are several amazing opportunities that the partnership between MCC and NKC Schools provides to our students, in particular our Early College offerings with the Engineering Technology program.

From day one MCC has included NKC Schools in the development and execution of its programs. An important part of our partnership is to ensure that our high school students not only receive college level credits and college credentials but first and foremost also graduate from high school. For us, this is key to any partnership. Our students in Engineering Technology currently attend MCC for a half-day during their junior and senior years of high school, and graduate not only with a high school diploma, but also several industry-recognized certifications. These students earn up to 42 hours of college credit through engagement in Engineering Technology. As we continue to enhance this opportunity for our shared students, we are preparing to add more academic content to ensure our students are not duplicating their efforts and to also allow our students to earn an Associates of Applied Sciences degree simultaneous to their high school diploma.

The programs offered to our students at Metropolitan Community College engage not only our education community but the businesses and industry in the areas our students live. This engagement is through guest lectures and visits to business ensure our students are connecting what they learn in the classroom with a real world today. This partnership with industry also allows for embedded career advisement directed toward specific employer needs in the greater Kansas City area.

Unfortunately, traditional career education is seen as second-rate. The common belief is that individuals will not earn higher-paying positions in advanced fields. MCC has consistently proved this wrong with our graduates. While some of our students choose to finish an associate’s degrees with MCC, some transfer onto four-year institutions and others go straight to a career. I'd like to stress that this is a career not just a job. It is not uncommon for us to find out students are starting out making \$40,000 to \$60,000 in entry level positions immediately after graduating from NKC Schools.

Metropolitan Community College has brought together a strong educational and workforce team that works well to ensure that students enjoy long-term success and this program is sustainable over the years. Despite the success our graduates have already experienced educationally and professionally, we continue

to partner to enhance these partnerships in collaboration with industry leaders in our community. We look forward to collaborating closely with MCC and its leadership into the future. They have our support and best wishes on this unique and exciting venture. If you have any additional questions about this partnership, please contact me directly at kyle.anderson@nkcschools.org or at 816-550-3212.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyle S. Anderson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Dr. Kyle S. Anderson
Director of Advanced Studies and Postsecondary Readiness
North Kansas City Schools

COMPUTER-AIDED DESIGN AND DRAFTING ENGINEERING TECHNOLOGY

CADD Certificate

You will receive a basis of knowledge in engineering graphics and multiple CADD software packages. This certificate is a stepping stone to either the CADD associate of applied science degree or one of the ETEC degrees and is often used as an additional credential to supplement other related degrees.

*ETEC (Architectural)

This degree includes coursework in basic CADD, building information modeling, surveying and building design.

*ETEC (Civil)

This degree includes coursework in basic civil design, geographic information systems, surveying and CADD.

*ETEC (Computer and Electronics)

This degree includes coursework in basic electronics, hardware repair, circuit analysis analog devices and CADD.

*CADD Associate of Applied Science

This degree includes coursework from machine design and manufacturing, architecture, civil/surveying and electronics. You will learn about multiple CADD technologies and rapid prototyping and three-dimensional printing in various courses.

*ETEC (Mechanical/Manufacturing)

The mechanical and manufacturing degree prepares you for working in the manufacturing/fabrication industry. In addition to basic engineering knowledge, you will learn about machining equipment and parametric modeling software and technologies.

Degree Requirements

For general education and degree requirements for each of these programs, visit mcckc.edu/etec.

Metropolitan
Community College



MCC-BUSINESS
& TECHNOLOGY

MORE THAN
A GREAT START

* MCC-Business & Technology has a partnership with the University of Central Missouri (UCM), allowing for a seamless transfer to pursue a bachelor's degree in CADD and Engineering Technology.

MCC

Transfer Agreements

MCC-Business & Technology has a strong agreement in CADD with the University of Central Missouri (UCM). ETEC transfers can pursue a bachelor's degree in Engineering Technology at UCM, Missouri Western State University and Pittsburg State. The courses in the CADD certificate can be applied toward the CADD or ETEC degrees. It is a stepping stone for students.

Related Careers

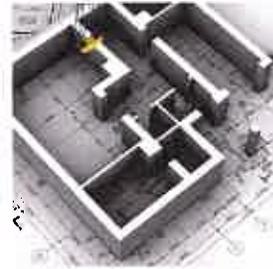
Students who complete the CADD and ETEC programs enjoy careers as drafters, designers and engineering technicians.

\$50K
NATIONAL
MEDIAN WAGES
PER YEAR

\$47K
MISSOURI
MEDIAN WAGES
PER YEAR

Our CADD And ETEC Graduates Have Been Hired By:

AGS Handrails
Black & Veatch
BlueScope Construction
Burns & McDonnell
Butler Manufacturing
Henderson Engineers
Kansas City Power & Light
Lake City Army Ammunition Plant
Lutz, Daily & Brain LLC
Martin Sprocket & Gear
PKMR Engineers
R&D/Leverage
Ruskin Company
Sega Inc.
Sioux Chief Manufacturing
WL Cassell and Associates



Contact Info

Mike Cline, program coordinator, 816.604.5281,
or james.cline@mcckc.edu.

Get Started

Apply online at mcckc.edu/getstarted. Read more
about the ETEC and CADD programs at mcckc.edu/etec.

#BeMoreAtMCC

FAB LAB

FAB LAB
MCC - Business & Technology

Do you have a cool idea or project but just need the tools or place to work? You can design, make and build your vision in MCC-Business & Technology's FabLab.

The FabLab is a state-of-the-art facility where you can use dozens of tools, the latest technology and high-tech machines and equipment. You can conceptualize, design, develop and fabricate projects.

A RESOURCE FOR ALL

- Students of Metropolitan Community College have free access to the FabLab.
- Students from area accredited colleges can become FabLab members for \$50 per semester.
- Members of the community can become FabLab members for \$100 per semester.
- To become a member of the FabLab, you must attend a 60-minute orientation/registration session.

MORE ABOUT THE FABLAB

Where: Room TC 239, MCC-Business & Technology campus, 1775 Universal Ave., Kansas City, MO 64120.

When: Please contact the FabLab at fablab@mccck.edu for up-to-date information on hours of operation.

Who: MCC-BT staff members in the FabLab are available to help you run equipment and answer questions about your projects.

Online: mccck.edu/fablab



Metropolitan
Community College

MORE THAN
INNOVATIVE



MCC-BUSINESS
& TECHNOLOGY



Tools and Equipment Available

- Power and hand tools
- Open work tables and limited storage for projects
- Vacuum forming table
- Vacuum chamber for molding
- MIG welding equipment
- Plasma cutter
- Air Brush and airbrushing paint booth
- Laser engraver
- 3D scanner
- 3D printer (Dimension ABS, Zcorp color and monochrome, and Object Alaris resin)
- Subtractive prototype (Roland Computer Numerical Control (CNC) mill)
- Computer-Aided Drafting and Design workstations and software: AutoCAD, Inventor, Solidworks, Microstation, Revit and more
- CNC Router (5-foot by 10-foot)

Wood Shop

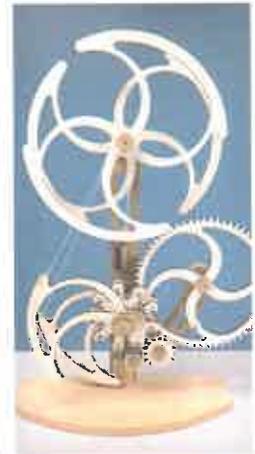
You can use the wood shop, which includes a table saw, compound miter saw, router and table, jointer and sanding station.

Metal Working

Use a manual mill, manual lathe, CNC mills and table-top micro mills and lathes.

Project Photos

See photos of our projects finished in the FabLab and learn more about upcoming classes and workshops at [Facebook.com/mccfablab](https://www.facebook.com/mccfablab).



EARN COLLEGE CREDIT

with MCC for project lead the way courses

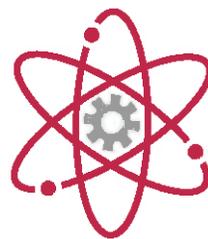


Dual credit option

- Talk to your Project Lead The Way (PLTW) instructor to see if any of these classes are offered for dual credit.

Credit by examination option

- Apply for admission and enroll at MCC.
- You must provide the MCC Records Office/Advisor with verification of national end-of-course exam scores of 70% or better and PLTW course grades of 80% (B) or better from your high school instructor, counselor, or an administrator. The national end-of-course exam scores should be documented in a letter on school or school district letterhead. The PLTW course grades should be documented on your official high school transcript.
- If you have completed PLTW Pathway to Engineering courses and national end-of-course exams at a PLTW certified high school, you may be eligible for credit by examination in certain Metropolitan Community College programs. This credit will be added to your MCC student transcript upon enrollment at any of the MCC campuses. Your high school PLTW course grades will not be factored into your MCC grade point average.



Kansas City

PLTW

PROJECT LEAD THE WAY

MCC

Metropolitan
Community College

mccckc.edu/apply-now

CREDIT BY EXAMINATION CREDIT OPTIONS



If you intend to earn an Associate Degree in Engineering, you can earn three credit hours for ENGR 113 (Engineering Design and Microcomputer Applications) if:

- You complete Introduction to Engineering Design (IED), Principles of Engineering (POE), and any third qualifying PLTW engineering course* with an 80% (B) or better average.
- You earn 70% or better on the national PLTW end-of-course exams for at least two of the three courses above.

If you intend to earn an Associate in Applied Science (AAS) Degree in Computer Aided Drafting, Engineering Technology (Computer and Electronics, Mechanical/Manufacturing, or Mechatronics emphasis areas), or Industrial Technology - Photovoltaics, you could earn college credit toward the following degrees:

- Civil Engineering and Architecture (CEA): ETEC 211 – Building Information Modeling, Revit (3 credit hours)
 - A.A.S. - Computer Aided Drafting & Design, **or**
 - A.A.S. - Industrial Technology: Photovoltaics, **or**
 - A.A.S. - Construction Management, **or**
 - A.A.S. - Engineering Technology: Architecture
- Introduction to Engineering Design (IED): ETEC 270 - Parametric Modeling – Inventor (3 credit hours)
 - A.A.S. - Computer Aided Drafting & Design, **or**
 - A.A.S. - Engineering Technology: Mechanical/Manufacturing, **or**
 - A.A.S. - Engineering Technology: Mechatronics
- Digital Electronics (DE): ETEC 130 - Digital Electronics (4 credit hours)
 - A.A.S. - Engineering Technology: Computer and Electronics, **or**
 - A.A.S. - Engineering Technology: Mechatronics
- Principles of Engineering (POE): INTE 101 - Introduction to Engineering and Production Technology (3 credit hours)
 - A.A.S. - Engineering Technology: Computer and Electronics (meets elective requirement), **or**
 - A.A.S. - Engineering Technology: Mechatronics (meets elective requirement)
- Computer Integrated Manufacturing (CIM): ETEC 212 – Computer Integrated Manufacturing and Robotic Control (4 credit hours)
 - A.A.S. - Engineering Technology: Mechatronics (meets elective requirement)
- Engineering Design and Development (EDD): ETEC 240 – Design Project (3 credit hours)
 - A.A.S. - Engineering Technology: Mechatronics (meets elective requirement)

If you intend to earn an Associate in Applied Science (AAS) Degree in Engineering Technology with an emphasis in Electronics or Computer & Electronics, you can earn three credit hours for ETEC 130 (Digital Electronics), and three credit hours for ETEC 240 (Design Project) if:

- You complete Introduction to Engineering Design (IED), Principles of Engineering (POE), Digital Electronics (DE), and Engineering Design and Development (EDD) courses with an 80% (B) or better average.
- You earn stanine scores of 6 or better on the national end-of-course exams for Digital Electronics (DE).

*Qualifying PLTW engineering courses are: Aerospace Engineering (AE), Biotechnical Engineering (BE), Civil Engineering and Architecture (CEA), Computer Integrated Manufacturing (CIM), Digital Electronics (DE), and Engineering Design and Development (EDD).

** Important information about the educational debt, earnings, and completion rates of students who attend these programs is at mccck.edu/programs/gainfulemployment.

Please speak with an academic advisor to determine the appropriate course of study. If you have questions, please contact Teresa Loney at 816.604.1517 or via email at Teresa.Loney@mccck.edu.

This is project the invention club worked on. It is a cordless electric sweeper for industrial shop floors. Not a vacuum but it will take the place of manually hand sweeping with a broom.











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With help from MCC student and instructors, 3-year-old rides his first bike

Ernie Webb III July 12, 2016

UPDATE: Since the original reporting of the Hudson Borton story, media outlets nationwide have picked up the content. See notes below with links to television coverage and social media coverage. Hundreds of thousands have now heard of the Metropolitan Community College-Business & Technology team who made such a difference to the Borton family.

Original story posted below on July 12, 2016



Nick and Lyndsey Borton, here with 3-year-old son Hudson, recently reached out to MCC-Business & Technology for help. Student David Valdez (back, from left), Engineering Technology program coordinator Mike Cline and instructor Chris Page designed and printed a prosthetic that allows Hudson to ride his first bike.

Try as he might, Hudson Borton just couldn't figure out how to ride his brand-new tricycle. But with help from a student and two instructors at Metropolitan Community College-Business & Technology, the 3-year-old is now devising a plan to beat his 4-year-old twin sisters in a race.

Born without a left hand because of symbrachydactyly, a condition characterized by limb anomalies, Hudson struggled to adjust to the tricycle.

"He tried to get on it, and he tried to lean into it a couple of times," said Nick Borton of Shawnee, Hudson's dad. "But he couldn't figure out how to lean into it and ride."

Shortly after Hudson's birthday June 8, Nick sent a message to the FabLab page on



Facebook for help after an exhaustive online search. In a matter of days, Nick and his wife, Lyndsey, met with Engineering Technology program coordinator Mike Cline and Prototype Lab technician Chris Page.

After the meeting, Cline contacted Engineering Technology student David Valdez to see if he would be interested in designing a prosthetic attachment that would allow the little boy to test his new wheels. Valdez finished the design in less than two days.

"It sounded like a great project, so I was more than willing to help," said Valdez, a Kansas City resident who plans to graduate with an associate of applied science this fall. "It's hard to describe what you get out of

something like this. To see the look on his face and his parents' faces brought me a lot of joy."

Valdez's design, produced with the computer-aided drafting and design software package Inventor, includes two pieces that clamp over and under the left handle and a ball joint connected to a cone that Hudson places his arm in to guide the tricycle.



After Page and Cline reviewed the design, the team printed the prosthetic on 3-D printers in the Prototype Lab. The family then visited the FabLab to test the attachment on the bike.

“It’s our job to put students in a position like this to succeed and give them real-life experiences,” Cline said. “David did an outstanding job and got it done very quickly. It was rewarding to see the look on the family’s face and on David’s face when he saw how much it meant to them.”

Hudson left the Business & Technology campus with a new ride featuring an attachment that he can use for years. The prosthetic can be adjusted to fit his arm as he grows.

“To be able to help that little guy is a wonderful thing,” Page said. “I was honored to be a part of it.”

Once he got home, Hudson jumped on his tricycle and began preparing to race his sisters. His father posted photos and videos of Hudson riding his bike on Facebook that MCC shared on its accounts, garnering hundreds of likes.

On July 12, crews from four Kansas City TV stations visited the Business & Technology campus and the Bortons’ home to prepare stories for that evening’s newscasts.

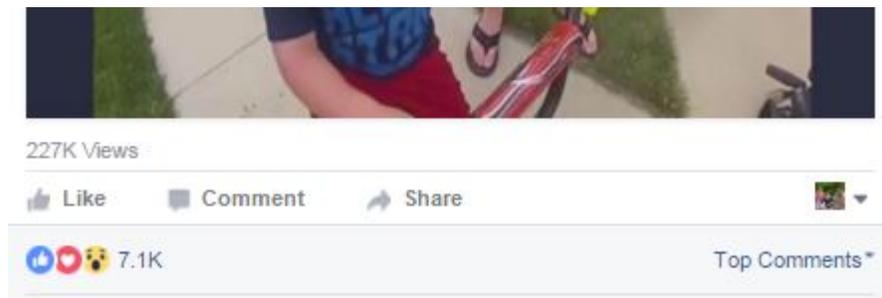
“The people at MCC didn’t know us. They didn’t have to do all of this, but they took the time to help us,” Lyndsey Borton said. “There’s a lot of craziness in the world right now, and to have people like this at MCC be so kind ... it means so much to our family.”

HUDSON’S STORY ON TV AND SOCIAL MEDIA

 **ABC World News Tonight with David Muir**
July 16 at 2:15pm · 🌐

A 3-year-old boy from Missouri who was born without part of his left arm is now flying around the neighborhood on his bicycle thanks to the help of a custom 3D printed device.





- » [ABC World News Tonight with David Muir posts video on its Facebook page](#)
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