



BUILDING THE FUTURE

THE HOVER GAMES CAMP

Reaches New Levels
at Thomas Nelson
Community College



The bar is set on high for the next summer manufacturing camp at TNCC in Hampton, Va. This year, students worked in teams to design quadcopter components using Inventor design software. They manufactured components using the MakerBot® Desktop program with the MakerBot Replicator 5th Generation and assembled the components of a quadcopter designed by the team.

Learning from “the best” describes the level of instruction at the Hover Games. Coaches and assistant coaches have engineering and technical backgrounds while the student summer interns come from NASA Langley. The teams designed motor mounts, propeller protectors, and “landing gear” for the quadcopters and transferred these designs to 3D printers for manufacturing.

And if that’s not enough FUN, each student flew a commercial quadcopter called ALIAS before flying the aircraft manufactured by the team.

Sometimes winning over the parents is not always an easy feat but John Calver, Director of Trades Training & camp director, does not disappoint! Here’s what one mother had to say:

“Thank you for sharing your enthusiasm and wisdom with these students year after year. My son and daughter have attended all the camps over the last three years. They left feeling empowered to follow an advanced technology field of study with anticipation for the future. Again, thank you for investing in our kids’ summer after summer.”

Students Explore Design & Engineering at Summer Adventure Academy in St. Louis



At Ranken Technical College, the goals of the camp were to explore design and engineering techniques used to build complex assemblies in today’s world and learn mechanical techniques while building projects. Barbara Bragg, S.T.E.M. Pathways Development Coordinator & camp director, recaps the students’ energy in the camp:

“It’s always exciting when you work with the students and get them thinking about something they would like to create, then watching them learn to look at things differently. Seeing how a project goes from an idea to a finished product and watching the students figure it out on their own is awesome.

The kid who wants to 3D print French fries with ketchup in the center is impressive. The student who designs a skateboard with solar panels that generate power to a USB that charges his cell phone is inspiring. Students who attend this academy walk away with new skills and a true sense of accomplishment.”



rings made at GCTC summer camp

Gordon Cooper Technical Center Exposes Campers to Advanced Manufacturing

FMA President Ed Youdell and NBT Board Chair David Brown took time from their busy summer to visit the folks at Gordon Cooper Technology Center in Shawnee, Okla. to see a successful camp in progress. At the Nuts, Bolts & Thingamajigs Manufacturing Camp, students developed a realistic view of what manufacturing is and had fun learning how to “make” a product with their hands.

Camp director Roger Farris reflects:

“We are always amazed that the CNC and water jet technology draws in the students but the hand work of crafting a ring made by hand out of a quarter is what they like the best.

We had a young man who attended last year and enjoyed the camp so much that this year he came back as a volunteer to help the instructor as his assistant. He plans to become an engineer.”



young camper shows Ed Youdell her project

WHERE ARE THEY NOW?



Tyler Rigby
NBT/OPC Scholarship
Award Winner (Spring 2016)
Penn State Behrend—
Mechanical Engineering

Prior to the summer, Tyler had a fulfilling and interesting year at Penn State Behrend. The mechanical engineering major and president of the Materials and Manufacturing Group had this to say...

“My classes are going very well this semester! They are surely keeping me busy but I have been successful in all of my engineering courses. I am still on a career path in manufacturing.

I will be moving to Arkansas this summer to work with Nucor Steel Yamato as a mechanical engineering intern. In recent news, I was able to tour the GE Locomotive facility to see their manufacturing process of head and radiator cabs with my Materials and Manufacturing Group here at Behrend. We held our final meeting where we had a speaker come in from McInnes Rolled Rings. I want to thank the NBT foundation again for their continued support; it truly helps me on my path to a manufacturing career!”

A few months later Tyler has his summer internship behind him...

“I recently completed my internship at Nucor-Yamato Steel in Blytheville, Ark. It was a great experience working in another steel mill. Nucor-Yamato produces some of the largest steel beams in the world, and I had the opportunity to be in their melt shop group as a mechanical engineering intern. The melt shop is where the process really gets going as we melt the scrap steel down for new products. I got to work on various projects that included safety items, building layouts, and bulk material handling.



onsite at Nucor-Yamato Steel internship

I just wanted to give the team at FMA/NBT an update on what I have been doing before I head back to Penn State Behrend next week to start my senior year. NBT's support has been outstanding in helping with my degree and pursuing manufacturing!”



Lauren Werner
NBT Scholarship Award
Winner (Fall 2015)
Purdue University—
Industrial Engineering

“I have learned a lot about engineering and myself. I enjoy my classes and even though the workload is strenuous, I would not change my decision to attend Purdue to

study engineering. Last semester, my engineering class was assigned a final project to build recycled and educational toys for children to play with. My team built a race track from only recycled materials that allowed the children to interchange the track materials to make the toy cars speed up or slow down. It was exciting to see something I had built being used by the children at the on-campus day care.

This past year, I have had a lot of ups and downs—with doubts about being a successful Industrial Engineer to getting an A on an Engineering exam. I cannot wait to begin a new year, taking Industrial Engineering courses. I would like to thank FMA for the Nuts, Bolts, & Thingamajigs Scholarship because it has given me an opportunity to study at one of the best engineering schools in the nation.”



race track built out of recycled materials, Lauren (on right)

We wish TYLER and LAUREN the best in the future and appreciate their dedication to the industry!

TWO GOLF EVENTS BRING OUT GENEROUS DONORS



On Aug. 22 almost 90 golfers came out to Cantigny Golf Course in Wheaton, Ill. to enjoy one of the best GOLF4MFG events thus far! Some of the most generous donors enjoyed playing their favorite game and helped to raise over \$14,000 to benefit the NBT foundation. Here's what one golfer had to say about the event:

“FMA is doing great things by providing young people with exposure to manufacturing and scholarships to those who want to educate themselves and get into the manufacturing profession. The outing is fun, networking's great, and the golf course tremendous. What a great way to get some enjoyment out of a worthy donation.” — Gary A. Koester, Koester Metals, Inc.

Thank you to our sponsors:



The Outside Processors Council (OPC) hosted a silent auction at the Motor City Slitters golf event on Aug. 29 in Southfield, Mich. which raised over \$14,000 to benefit the John Grossheim Memorial Scholarship. Learn more about the OPC scholarship program in the next NBT newsletter.



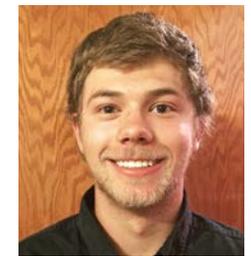
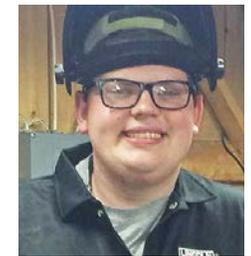
BUILDING THE FUTURE



The Foundation of the Fabricators & Manufacturers Association, Intl.

CONGRATULATIONS to the winners of the FALL 2016 SCHOLARSHIPS!

These hard-working students showed the review committee what it takes to be awarded an NBT scholarship. Although all twenty students are pursuing different careers paths, they have one goal in mind: **to join the manufacturing workforce and make a positive change.**



From Top to Bottom

Leah Clifton
LeTourneau University
Engineering, B.S. Materials
Joining Concentration

Savannah Cofer
Rice University,
Mechanical Engineering

Andy Cohen
Virginia Polytechnic Institute
& State University,
Mechanical Engineering

Kieran Deyell
Alfred State SUNY College
of Technology,
Mechanical Engineering

Jacob Eberle*
Western Kentucky University,
Electrical Engineering

Shandyll Fredrickson,
Chippewa Valley Technical
College, Machine
Tooling Technics

Derek Grit
Ferris State University,
Design/Drafting

Jacob Hethcock
University of Texas at Austin,
Mechanical Engineering

Daniel Kim
Virginia Polytechnic Institute
& State University,
Industrial Engineering

Kaustubh Lahiri
The University of Texas at Austin,
Mechanical Engineering

Anthony Ortiz**
Harper College
Mfg Tech: Precision Machine AAS

Deirdre Ouellette
University of Colorado Boulder
Mechanical Engineering

David Sadowski
Rochester Institute of
Technology, Mechanical
Engineering

Keaton Scherpereel
Vanderbilt University
Mechanical Engineering

Caitlin Simpson
Illinois Institute of Technology,
Industrial Technology
and Management

Daniel M. Smith
Pennsylvania State University,
Industrial and Manufacturing
Engineering

Daniel L. Smith
Chippewa Valley Technical
College, Machine
Tooling Technics

Payton Staman
University of Indianapolis
Mechanical Engineering

Gabriel Stein
Pennsylvania College
of Technology, Welding
Engineering and Fabrication

John Vinmans
Chippewa Valley Technical
College, Welding /
Welding Fabrication

“Where in the world did you get these candidates?! Some of these applicants are just off the charts brilliant, innovative, community-minded, etc. I have NEVER read applications like these as a reviewer in any organization, SERIOUSLY!”

– **Nick Graff**, Dallas County Community College District, comments on the quality of NBT scholarship candidates



MATCHING GIFTS MAKE SENSE

Every year, billions of dollars in workplace matching funds go unclaimed. The company you work for may be one of those companies with an under-utilized matching program. NBT asks you to consider researching if your company has such a program in order to support the mission of NBT.