Greetings!

Summer may be a leisurely-paced season for some, but at RCBI we're racing through exciting activities and aren't ready to brake just yet!

Just ask the youngsters who enjoyed our 3D Printing Camps, the interns solving real-world problems to boost their experience, the national authority on certification that asked RCBI to join its prestigious M-List of validated industry skills providers, or the workers who attended our customized training sessions. Our commitment to deliver the expertise and technology necessary to spur innovation is still going strong -- even during the otherwise "hazy, lazy" days of summer.

Welding, Machining, Robotics and Apprenticeship courses are gearing up. Another manufacturer continues his collaborative efforts with us to meet his customers' needs, and you can read about his success below. We're even preparing to attend creative conferences this fall -- and playing host to another exciting cycle of 3D Printing activities at RCBI during Manufacturing Day 2014, so mark October 3 on your calendar now and plan to join us.
Hands-on 3D Printing camps provide kids a whole new perspective on manufacturing

At RCBI's 3D Printing Camps, middle school and high school students had hands-on experience in Additive Manufacturing.

Campers in Huntington and Bridgeport used 3D design software to model parts for a scale-model biplane, then helped manufacture its parts in the machine shop. They also customized a wing for the body of the plane, which was crafted on a 3D printer in RCBI's Design Works labs. On the final day, campers assembled their planes in time to show them off to their families and friends, who also had the opportunity to tour RCBI's Advanced Manufacturing Technology Centers.

During the week, campers learned about career opportunities in STEM (Science, Technology, Engineering and Math) fields, toured manufacturing facilities (including Alcon, Aurora Flight Sciences, and Pratt & Whitney Engine Services), and worked with local entrepreneurs.

Nuts, Bolts & Thingamajigs (NBT)™, a national education foundation established by the Fabricators & Manufacturers Association International (FMA), provided funding for this summer's 3D Printing Camps at RCBI.

RCBI joins national group's initiative to promote manufacturing skills and careers

The nation's manufacturers have endorsed the career skills programs offered by the Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI). The Manufacturing Institute named RCBI to the prestigious "M-List," which recognizes organizations that teach manufacturing students to the highest industry standards. RCBI was recognized for its machinist technology, welding technology and robotics technology courses.
"We are excited to join the M-List - and especially pleased to be the first organization in West Virginia to do so," said Charlotte Weber, RCBI's Director & CEO. "Industry standards are essential in developing the proper skills and enhancing the expertise of men and women who make things in America. Great things are happening in manufacturing, and we're proud to work in partnership with the Manufacturing Institute to ensure a skilled workforce is available to industry."

In addition, RCBI has become the only institution in West Virginia to participate in the Manufacturing Institute's "Dream It. Do It" initiative, which fosters growth, innovation and jobs by building awareness about careers in manufacturing. Through "Dream It," RCBI will engage in a variety of activities aimed at promoting careers in manufacturing in collaboration with its many partners in business, education and government.

A nonprofit affiliate of the National Association of Manufacturers, the Manufacturing Institute is the authority on the attraction, qualification and development of manufacturing talent.

MORE INFORMATION
Our Website
Our Staff

SUCCESS STORY

A close-up of an Extreme Endeavors 3D-printed IPAC Enclosure.

Extreme Endeavors turns to RCBI to help bring its innovative solutions to the market

For more than a decade, Mike Masterman has collaborated with the Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI) in the development of new products. Masterman is the founder and owner of Extreme Endeavors, an engineering and consulting firm near Philippi that researches and then develops innovative solutions to clients' problems.

"We began specializing in those strange, one-off items you cannot buy off the shelf, and it has evolved into critical infrastructure monitoring around the world," he said.

About a decade ago, Extreme Endeavors was developing an environmental monitoring system for Greer Limestone, which needed to know if its operations were affecting endangered bats in nearby caves. He met with RCBI's technical staff and they worked together on a design for a metal enclosure to contain sensor equipment.

RCBI produced the initial prototype and assisted in production of the metal containers using leased time on computer-controlled manufacturing equipment. The system that Extreme Endeavors developed continues to monitor the
conditions that might affect the bats in Schoolhouse Cave and Hellhole Cave in Pendleton County.

After the initial project, RCBI assisted Masterman with the development of other products including a system for remotely monitoring propane tanks.

Two years ago, Extreme Endeavors embarked on another project - the development of the Intelligent Power Automation Control (IPAC) system that monitors and intelligently controls AC grid power. The system has important applications for smart grid application, but the technology also has taken hold in pumping stations used for water distribution for large scale public service systems. The system is critical because the public may lose access to clean water when the power goes off.

"If you lose power, you can't pump water to the tank on the top of the hill so people there won't have water," said Masterman.

While most of its products are made out of metal, the monitor-boxes have to be plastic to eliminate the risk of electrical shock. Masterman received a StartUp WV grant for the development of the boxes that were created using Additive Manufacturing technology with 3D Printers.

A joint venture of RCBI and TechConnect WV, StartUp WV helps small manufacturers in the use of high-technology manufacturing tools and processes. The program is made possible by a grant from the U.S. Economic Development Administration and funding from the state of West Virginia.

Masterman approached RCBI with the initial design, and engineers helped him refine those plans. The IPAC Enclosure was made on one of RCBI's 3D Printers. 3D Printing the boxes is the most cost-effective means of manufacturing them, Masterman said. While production of an extruded mold would have cost $20,000, each box costs a fraction of this amount to print using the revolutionary Additive Manufacturing technology, he said.

Masterman said his company will continue to rely on the expertise and leading-edge equipment at RCBI as new customers require new solutions to their problems.

"Working with RCBI allows us to meet any customer's needs," he said. "It's another tool in our toolbox."

For more information about Extreme Endeavors, call 304.457.2500 or visit www.extreme-endeavors.com.

Apprentice program designed to ensure employees meet industry standards

The Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI) is launching its first group apprentice program, offering manufacturers a new way to train employees to industry standards.

The Machinist Apprenticeship Program at RCBI, available in Huntington and Bridgeport, is a jobs-driven model that works both for companies and students. Students selected by participating companies will meet two evenings a week during non-work hours at the RCBI Advanced Manufacturing Technology Centers in both locations. RCBI's experienced instructors will deliver classes in areas such as safety, manual milling, and CNC programming. As part of their apprenticeship efforts, the students will apply and demonstrate their newly acquire classroom knowledge and skills on the job during their regular work schedules.

There are several benefits to a group apprenticeship program, including the fact that it is less costly because manufacturers share the cost of the training provided by RCBI. In addition to
available tax benefits and workforce development grants in some states, including West Virginia, manufacturers will have employees who are trained to standards established by industry.

RCBI's group apprenticeship program is certified by the National Institute for Metalworking Skills and recognized as meeting requirements of the U.S. Department of Labor / Office of Apprenticeship. Students may qualify for credit at West Virginia community colleges.

For additional information, call 800.469.RCBI (7224) or 304.720.7742 or send an email to register@rcbi.org.

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RCBI injects innovation into agriculture sector

West Virginia farmers and agricultural innovators have a new ally in their efforts to increase production, improve efficiency and grow their markets statewide - and beyond.

The Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI) has launched Agricultural Innovations, an initiative to leverage its expertise and inject technology into the agriculture sector across West Virginia. Funded through a grant from the Claude Worthington Benedum Foundation, the initiative focuses on two main areas: providing support to inventors and innovators with new technologies, processes and products; and analyzing production, aggregation and distribution systems to help farmers more efficiently and effectively get their products to the consumer market.

"Combining our unique blend of industry expertise and advanced technology with the latest agricultural practices, we're extending outreach to innovators in the farm-to-table food supply chain," said Charlotte Weber, RCBI Director & CEO.

A number of Agricultural Innovation projects are under way. RCBI staffers are working closely with an entrepreneur on the design, engineering and prototype of a device to improve plant pollination and thus lead to higher crop yields. Such an innovation could prove especially important as West Virginia - and, indeed, much of the country - searches for ways to offset the decline in one of the nation's leading pollinators: the honey bee.

Other projects include working with entrepreneurs across the state on devices to improve plant propagation methods, extend the birthing season for certain animals, and use solar power in new and inventive ways.

"Our state's farmers produce a relatively small portion of the $7.3 billion of food that West Virginians consume each year," Weber said. "By supporting innovative ideas and facilitating efficiency in their processes, RCBI will help our state's agricultural businesses take full advantage of this untapped potential."

For more information about agricultural integration and innovation services,
RCBI displays winning 3D-printed designs

Educators from across the state recently participated in an RCBI workshop to learn ways to incorporate 3D Printing technology in the classroom. As part of the event, teachers participated in a friendly competition using SolidWorks CAD software to design space-related items. The top three designs, which are currently on display at RCBI Huntington, were 3D printed in RCBI's Design Works lab. Michael Rowe of the Charleston Area Robotics Team captured first place with his design (left); Keri Gregory took third place with her NASA emblem (center); and Kathryn Williamson of the National Radio Astronomy Observatory was awarded second place with her radio telescope (right). The workshop was made possible through a grant from NASA.

Thanks again for your time and your support of RCBI. As always, don’t hesitate to contact us if there’s any way we can assist you or your business!

Sincerely,

Charlotte Weber
Director & CEO

What RCBI Does

The Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI) encourages job creation, economic...
development, innovation and entrepreneurship by supporting manufacturing companies of all sizes. We offer cutting-edge equipment use and specialized training for everyone from sole proprietors to Fortune 500 companies.

Simply put, our goal is to use our Advanced Manufacturing Technology Centers across West Virginia to provide the resources that individuals and companies need to create, sustain and expand their businesses. In addition to providing leased use of cutting-edge equipment, workforce development programs, Quality Management Implementation, and customized training, RCBI assists companies in networking and procurement - particularly with federal contracts.

The technologies available at RCBI Advanced Manufacturing Technology Centers in Huntington, Charleston and Bridgeport are among the best in the world, providing companies in the Mid-Atlantic region services that would not otherwise be readily available to them. In particular, RCBI offers Additive Manufacturing (AM) with 3D Printer technology through its Design Works labs, and is a national Center of Excellence for composite materials providing support to NASA engineers as well as first-tier DoD suppliers in West Virginia. These activities help ensure that RCBI fulfills its mission of developing a quality, just-in-time supplier base for the Department of Defense (DoD) as well as other agencies and the commercial sector.