Greetings!

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West Virginia was proud to celebrate Manufacturing Day 2014! RCBI hosted exciting, innovative and fun events during the annual celebration. In addition to student tours and demonstrations at our statewide Advanced Manufacturing Technology Centers, at RCBI in downtown Huntington -- in partnership with Marshall University, Advantage Valley and the City of Huntington -- we hosted hundreds for the inaugural West Virginia Makes Festival. Work already has begun on the "Maker Movement" for 2015!

As the days grow shorter this autumn season, we're working to support and encourage the creativity and originality of entrepreneurs and makers across West Virginia and the Mid-Atlantic region. The 24/7 pace of rapidly changing innovations makes access to technology, training, prototyping, seed capital and the expertise available at RCBI so important to future success. Get on board the "Maker Movement" in West Virginia -- and see what's new on RCBI's enhanced digital portal at www.RCBI.org -- as we help create success stories every day!

Thank you for spending a few minutes catching up on our latest activities.
young students who use the latest technology, especially 3D Printing, and we recognize the importance of engaging young minds. Now through 'Dream It. Do It.' we'll extend our efforts to make them aware of exciting opportunities in New Manufacturing -- including a rewarding future, not just for their own personal careers but also for other artists, designers, inventors and consumers."

**RCBI welcomes new staff members**

The Robert C. Byrd Institute for Advanced Flexible Manufacturing announces two additions to its staff.

Stan Bumgardner, a resident of Charleston, joined RCBI as a Grant and Technical Writer. A professional historian for more than 20 years, Bumgardner served from 2005-2009 as creative director for the renovation of the West Virginia State Museum. Most recently he was a museum consultant and performed writing, editing and grant-writing for a variety of organizations. Bumgardner has a bachelor's degree in history from Marshall University and a master's degree in public history from West Virginia University.

Tom Vallance joined RCBI as Systems Specialist. Vallance, a resident of Wheelersburg, Ohio, has a Bachelor of Science degree in information technology from Capella University. Prior to coming to RCBI, Vallance spent his career in K-12 schools, most recently as technology specialist.

Nearly three dozen makers from across the state demonstrated their unique creations during the West Virginia Makes Festival at RCBI in Huntington.

**Hundreds from across the state attend inaugural West Virginia Makes Festival**

Nearly 500 individuals attended Manufacturing Day activities in West Virginia hosted by RCBI at its Advanced Manufacturing Technology Centers.

The highlight of the celebration was the inaugural West Virginia Makes Festival at RCBI Huntington. Nearly three dozen competitors -- including manufacturers, inventors, artists and students -- participated in a design challenge offering cash prizes.

Sponsored by RCBI, Advantage Valley, the city of Huntington, and Marshall University, the West Virginia Makes Festival focused on innovation and fun with challenges, prizes and giveaways, networking as well as other interactive attractions.

The festival drew crowds of spectators, including nearly 150 elementary and middle school students. West Virginia Secretary of Commerce Keith Burdette, Marshall University President Stephen J. Kopp, and Gardner Carrick, Vice President of Strategic Initiatives at the Manufacturing Institute, also took part in the celebration. West Virginia Governor Earl Ray Tomblin issued a special Manufacturing Day Proclamation.

In addition to the festival, RCBI hosted demonstrations and tours at its statewide facilities. More than 100 students, educators and parents took advantage of the opportunity to tour RCBI's Advanced Manufacturing Technology Centers, learning about the available technology and training, and seeing live demonstrations of state-of-the-art machinery, including 3D Printers and composite technology. Manufacturing representatives were also on hand to talk with the visitors about what they do and the importance of making things.
Workshops focus on new businesses

RCBI and the West Virginia Small Business Development Center (WVSBDC) are partners for a continuing series of training workshops designed specifically for start-ups or new businesses.

Click for dates

IN SUMMARY

NEW YORK TIMES: How will 3D printing influence our daily lives? Experts debate the impact of additive manufacturing on the economy and on individuals.

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UNIVERSITY REPORT: Shale boom could help bolster other industries
Researchers and policy experts found that low-cost shale gas could revitalize the American economy, in particular the chemical, aluminum, steel, paper, glass, and food industries. The report includes five recommendations aimed at "responsible and sustainable" production and utilization of shale gas.

Click to read more

NATIONAL ASSOCIATION: Legislation would change manufacturing bonds
Manufacturing bonds are critical to economic development, but the laws governing them haven't changed in nearly 30 years. Federal legislation (H.R. 5319) would reform the laws and expand access to capital.

Click to read more

SUCCESS STORY

Grafton small-business owner meets the challenges of manufacturing, finds success

For a small manufacturer, taking on new business poses a challenge when the necessary state-of-the-art equipment required is too expensive to purchase. Rusty Efaw, owner of Champion Brake and Driveshaft in Grafton, solved this problem by collaborating with RCBI.

Efaw started his own business in 1986 out of necessity. When he was 13, he broke his back in a motorcycle accident. Because of the injury, he couldn't pass the physical exams that were required by companies after he graduated from school.

"So I thought, I'll just have to go into business for myself, and I've been very fortunate."

He taught himself machining and opened his own shop. His three-person
operation makes driveshafts for cars, trucks and farm equipment. Most of his business is outside West Virginia, and he is so busy that he doesn’t advertise: Customers find him through word of mouth.

"We’ve been fortunate to put out a good product, and they keep coming," he said.

He began using the services at the RCBI Bridgeport Advanced Manufacturing Technology Center several years ago after receiving a contract to produce precision parts for an oil and gas company. He leases production time at the Bridgeport facility, where one of his employees makes the parts using a combination of the lathes, mills, laser cutter and water jet cutter.

Efaw is using the RCBI Composite Technology & Training Center in Bridgeport for another project, as well. After seeing the high-tech composite equipment available there during an open house, he and his son, Trampas Efaw, an engineer, developed a driveshaft made of composite material that will be far lighter than the traditional driveshaft constructed from steel.

They received training from McLean Anderson, the company that manufactured the CNC Filament Winder available at RCBI Bridgeport. Efaw now has a prototype for the new driveshaft, but he wants to refine it.

"We need to have more testing to get it where I want it," he said. "I'm comparing it to a steel shaft. I want it to exceed that."

Few companies make carbon-fiber driveshafts, so Efaw expects there to be demand, especially among race car drivers, whose vehicles will benefit from the lighter part. Efaw expects that his carbon-fiber driveshafts eventually will be manufactured and sold for regular highway use as well. Efaw indicated that these projects, including the development of the new driveshaft, would be impossible if Champion Brake didn't have access to the equipment at RCBI.

"I wouldn't be able to do any of it," he said. "That's where RCBI helped a bunch."

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**Interns gain practical experience, assist professionals with design, digital portal**

Four young people worked as interns for the Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI) this summer, completing important projects for RCBI while gaining valuable experience for themselves.

Eleni Hadjis, 20, of Bridgeport is a junior at Virginia Tech where she is an industrial design major. This summer, Eleni used CAD software to design several products for RCBI clients and served as an instructor for RCBI's 3D Printing Camps. Through these experiences, she learned about the different kinds of 3D Printers, when it is most appropriate to use each and how to use...
them. She also gained experience interacting with clients while managing several projects at once.

When she completes college, Eleni plans to work in a career that challenges her to generate new ideas.

"I enjoy the product development side of things where I can research, develop and test ideas," she said. "I also have an entrepreneurial spirit in me, so someday I would like to start my own company."

Rebecca Hovemeyer, 21, of Huntington received her bachelor's degree from Marshall University in the spring and returned this fall as a graduate student. As an undergraduate, she majored in applied mathematics and computer information technology with an emphasis on web application development. In the fall, she will study health informatics and hopes to work in a hospital or similar facility managing electronic data.

As an intern she worked on custom modules for a new and improved digital portal at RCBI. She also helped develop a mobile application focusing on Additive Manufacturing with 3D Printers. Through the different projects, she learned a new programming language, Objective C, and a new content management system, Joomla.

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
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.