

Business Hours

Monday: 1:00 pm - 8:00 pm
 Tuesday: 1:00 pm - 8:00 pm
 Wednesday: 1:00 pm - 8:00 pm
 Thursday: 1:00 pm - 8:00 pm
 Friday: 1:00 pm - 5:00 pm
 Saturday: 9:00 am - 1:00 pm

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 Tim Haynes, Lab Manager
 Jim Correll, Director

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FAB LAB BOOT CAMP FUN



Brian Hight, co-owner of Magnolia Scents By Design, Independence KS and Greenville SC, stands with the Boot Camp class of 2016 after speaking with them about growing up "entrepreneurial."

Twelve Fab Lab Boot "Campers" converged on Fab Lab ICC each morning from 9:00 until 12:00 during the week of July 18 to sharpen their maker skills and knowledge. One thing we've learned since last year's Boot Camp and through working with students (and even members) of all ages is that nearly everyone can use some knowledge, practice and training in working with their hands. We decided early on that we would involve the campers in much more handwork. We thought the kids might favor digital work and not like the handwork so much, but we were wrong. All indications are that they enjoyed the handwork very much.

Part of their time was spent making cardboard sculptures of 3D images found on the Internet. The 3D images were sliced, and the slices were cut out of cardboard using the laser. The campers, by teams, glued the sliced layers together to make actual representations of the 3D image. Although the slices were numbered, it was still a challenge, similar to a jig saw puzzle, to get everything assembled in the right order.

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Boot Camp (continued from Page 1)

The rest of the time was spent learning to spray and brush paint; about screws and how to drive them, holes and how to bore them, and nails and how to drive them. They designed the contours for a pinewood derby car and we helped them cut the contours. They then sanded and painted the cars and painstakingly added the wheels. Volunteers from the local Cub Scout packs delivered and set up the official pinewood derby track so campers could race the cars they built.

We talked about entrepreneurship and problem-solving. We talked about failure and the good teacher it is. We inspired the campers to think about ways they could change the world and that they don't have to wait until they get out of school to begin working toward those changes.

All in all, the campers learned a few things, were challenged and inspired, gained some experience in working with their hands, and had a lot of fun. The idea of mixing up the digital and hand working skills is something we'll always use in the future with kids of all ages.

"They must have enjoyed camp. One of the mothers said her two kids asked her to be late in picking them up."

Jim Correll, director Fab Lab ICC



Jackson installs the wheels and axles on his pinewood car.



Wyatt and Charlie making a cardboard motorcycle. Although the pieces are numbered, it is still quite challenging.



Start of a race with Racemaster, Tim. Our thanks to the Cub Scouts for loaning us the official track.



Bryant and Nate doing rock, paper, scissors to see who takes home the team's cardboard creation.

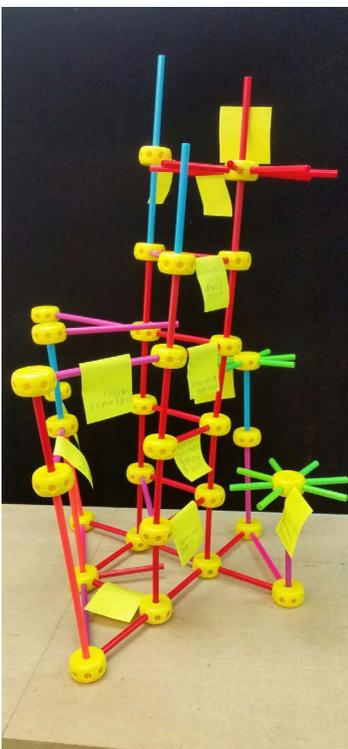
(continued on Page 3)

Boot Camp (continued from Page 2)



Genavieve and Alayna assembling their car.

On why her two Boot Campers were finally able to get up [early] and ready on their own: "My children told me that 'if regular school was like this we would get up early every day.'" Alisa Maywood, mother of Charlee and Bryant



Even in the digital environment of Fab Lab ICC, the Tinker Toys were a big hit. When not doing a directed activity, campers were drawn to continue work on their creations. In one exercise, campers were given 5 minutes to come up with new product or service ideas. While most came up with 1 – 4 ideas, Bryant Heapes came up with 10 or 12 as shown by the sticky note "leaves" on his Tinker Toy tree. If Bryant can manage to keep his creativity and curiosity intact to adulthood, he will be a great innovator someday.

Fastenal Provides Convenient Resource for Safety Supplies



Cody Westerhold, ICC Student Life Coordinator and frequent maker contemplates a purchase.

Fastenal, North America's largest fastener distributor, with stores in Independence and Coffeyville recently made available to Fab Lab ICC at no charge an automated vending machine for safety and other "maker" supplies. The machine, valued at \$10,000 is usually placed only in larger factories. "At the Fab Lab, we offer very basic safety supplies such as inexpensive ear plugs and safety glasses," said Jim Correll, director, Fab Lab ICC. "We'll continue having the basic items available, but some of our serious makers want their own safety gear."

Perry Daily, general manager of the Independence Fastenal store said, "We are glad to be a part of Fab Lab ICC as a provider of safety supplies and the sort of specialized fasteners, hardware and small tools needed by Fab Lab users." Daily and Fab Lab staff will work together over the coming months to enhance the selection and variety of tools and supplies. The machine offers a shopping cart function so multiple items can be selected. Upon checkout, payment is completed by debit or credit card.

From the
**DIRECTOR'S
CHAIR**



How the **WORLD WORKS**

A New Approach to Working with Young People in the Fab Lab

One thing we've noticed over the last year and one-half is that many young people are not adept at using hand tools, indeed, working with their hands, in general. This is especially true of spray painting. Young people (actually most adults too) are terrible spray painters. Early on this year, manager Tim Haynes and I decided we would try to improve the manual dexterity of young Fab Lab participants by increasing the amount of hand work in our

seminars and camps. We are finding that the extra hand work not only increases the skills of the participants, but also increases their knowledge of how the world works. For example, before practicing with wrenches and screw drivers, we show a video that demonstrates different kinds of screws and bolts and the purposes for which they are designed. In an age when we start to think all the kids just want to use their digital devices, we've found that most of them really enjoy working with their hands to actually make something. As I was telling a friend of mine about the screw video, he said "You ought to do something to show young people how walls are made. They don't have any idea what's behind the wall surface."

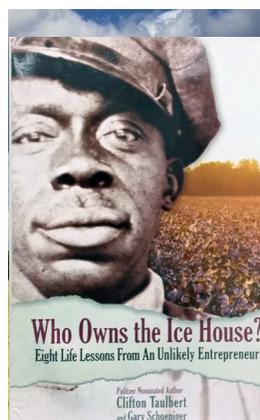
As so often happens in the Fab Lab environment, all this has given us a new idea. What if we had a series of Saturday morning seminars for young people under the overall theme of "How the World Works"? Each session could include a video or guest speaker introduction of a topic, followed by some kind of related hands on exercise. One week, it might be "How Walls are Made". Following a video introduction showing the basic construction of residential walls, participants get hands-on experience attaching sheet rock to a sample wall, complete with "mudding" the joints and screw dimples. Another week, the topic could be elephants with the physical activity of assembling a baby-sized elephant from 3D panels cut on the laser.

The choice of topics is almost limitless; something interesting and/or important to learn followed by hands-on experience to further develop manual dexterity. As is our practice, we will start small by scheduling the first one or two of these sessions and see if they catch on. When they do, we'll be ready to offer many of them.

**How to Subscribe to
Fab Lab Blab**

The Fab Lab Blab is published monthly by Fab Lab ICC at Independence Community College, 1057 W College Ave., Independence, Kansas. Email subscription available at no charge. Full-color, hard copy subscriptions by first class mail are available for \$25.00 per year. Contact jcorrell@indycc.edu or 620-332-5470.

Edited by Susan Correll



**An Entrepreneurial Mindset
Empowers Ordinary
People to Accomplish
Extraordinary Things**

Entrepreneurial Mindset at Fab Lab ICC

August 17 - November 30 on Wednesdays

6:30 to 8:00 p.m

Facilitators: Shelley Paasch and Jim Correll

620-515-4138

620-252-5349



Where's the **MANAGER**



Tim Haynes
Fab Lab Manager

Mobile Fab Lab

on our **RADAR**



for a targeted audience. Imagine how many metaphorical light bulbs we could illuminate, if we could visit a handful of K-12 schools around Southeast Kansas and show the students what is possible? Imagine if we could remove the burden of expensive technological education, by allowing tech teachers to contact us to schedule a 3D printing day at their schools? Imagine if we could host on-site continuing education for these same teachers? The community that includes Fab Lab ICC and Independence are already a regional hub of innovation and entrepreneurship. The demand is already strong. Every effort to grow and expand our service reach will be worthwhile, and even though we may not see our investments translated into ICC enrollees for some time, Boot Camp makes such a situation seem almost inevitable.



July 22 saw the conclusion of Boot Camp, our annual summer camp for kids. This is the second year we have offered it, and have learned several key lessons so far. The first lesson: without a significantly larger staff, we cannot satisfy current demand for hands-on Maker education. As long as we can only realistically accommodate twelve campers at a time, it isn't feasible for everyone to participate who would like to. The second lesson: having multiple activities running simultaneously can help avoid frustration during down time, because campers can continue working on activities on their own, while they wait for others to finish. The third lesson: even though we have cutting-edge technology at Fab Lab ICC, simple activities keep kids engaged, as long as they have a chance to express themselves creatively. The fourth lesson: I observed that the campers tended to ask for help more quickly while using computers, and they were less likely to seek solutions on their own. However, while doing manual tasks like cutting, drilling, painting, drawing, or building Tinker Toys, they almost never asked for help. The ability to solve problems autonomously is in high demand among employers, so we may have accidentally discovered a key element of effective job readiness training. How exciting!

Now that the campers have gone, and we have cleaned up, put away, wiped down, recalibrated, and I have gotten caught up on this week's email, and I'm feeling more resolved than ever that we must find a way to reach more people and more communities. Some Fab Labs across the country operate something called a Mobile Fab Lab. This could take the form of a tow-behind trailer, an RV, a minivan, or even a pickup truck filled with Fab Lab machines. A Fab Lab staff member would typically drive the vehicle to a school, library, or community outreach event, set up the machines, and host a hands-on demonstration

Entrepreneurship Starts Early

for Rowan Fox by Julia Stafford



On site in downtown Independence, Rowan and dad, Blake prepare the lemonade for the onslaught of customers.

Often times, scientists conduct experiments in which they mix dangerous ingredients in search of a chemical reaction. 5-year-old Rowan dreams of being a scientist when he grows up, and he's off to a pretty good start.

Rowan is not experimenting with dangerous ingredients in search of a chemical reaction. Instead, he's conducting a different kind of experiment; a lemonade stand. He's not mixing dangerous ingredients, but he's mixing lemons and sugar. He's not in search of a chemical reaction, but he's in search of happy customers.

Rowan and his father, Blake Escritt, started the lemonade stand together. Last summer, they opened the lemonade stand for the first time in their front yard in Coffeyville, Kansas. "It was an amazing success," Blake said. "All of our neighbors and friends came over and wanted to help Rowan with his business. It was just really amazing how the community pulled together to make that happen."

This year, Rowan and Blake are taking things more seriously. They opened the lemonade stand for two weekends in June, and were open for business every weekend in July. "More and more people came," Rowan said excitedly.

A young entrepreneur, Rowan sells his lemonade for 75 cents a cup. "My lemonade is 75 cents for cheapest," Rowan said. He went on to explain that the 75 cents is for regular lemon-

ade, and that prices can vary depending on the flavor. According to Rowan, regular lemonade is probably the most popular.

He has developed some unique flavors such as "red lemonade" and "extra-flavorful" to stay ahead of the lemonade game. His business is booming, too.

Of course, with his entrepreneurial mindset, Rowan has already opened his first bank account—which is where all the proceeds from his lemonade stand go. However, he also knows that, like any successful business, he needs help. "We're his unpaid volunteers," Blake laughed. "All the proceeds benefit Rowan."

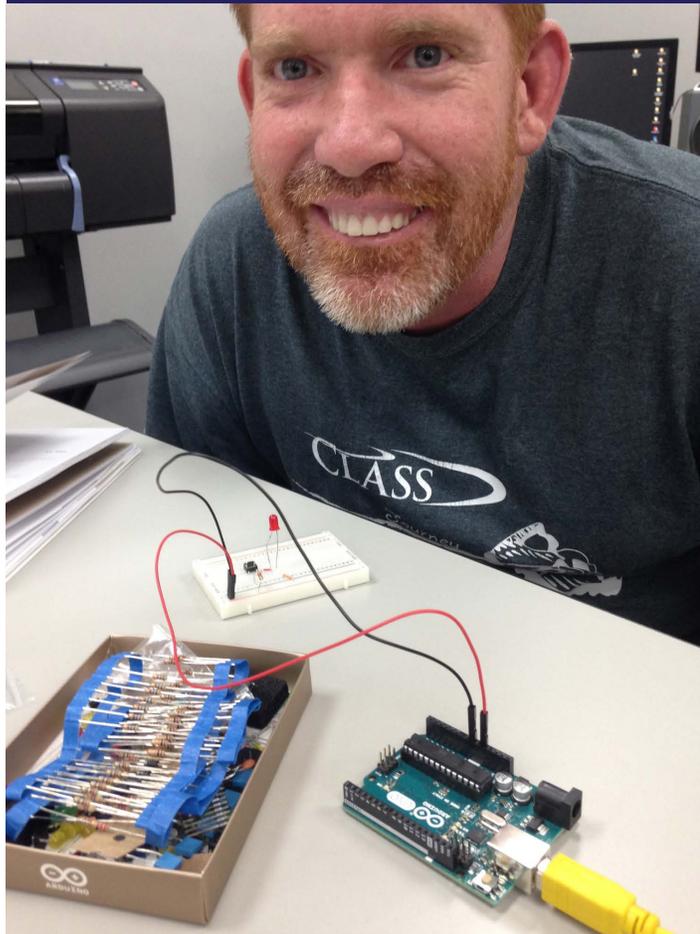
Rowan enjoys coming to the Fab Lab ICC to brush up on his entrepreneurial and scientific skills. He's curious to know how some of the materials in the Fab Lab work. "I think it's great because it lets people have access to resources that they otherwise wouldn't have," Blake said in regards to the Fab Lab.

The Fab Lab ICC promotes entrepreneurial endeavors, which is right up Rowan and Blake's alley. "Entrepreneurship is a key part in the society we live in," Blake said. "I think it's something that kids need to learn at an early age. A lot of communities don't talk about it as much as they should."



Rowan inspects his banner as it comes from the printer. The banner media is vinyl and the ink is water proof.

Rowan and Blake can be found around town every weekend, particularly at farmer's markets, their favorite venue for local business.



Randy's Story

by Robin Kusiak, CLASS LTD Case Manager

to the FAB LAB, however, his personality changes. Randy successfully carries on conversations with his instructor. Knowing the insecurities Randy displays with his speech, it is amazing to witness how this man comes out of his cocoon when he is working at the Fab Lab.

He had never worked on a computer before his Fab Lab experience. In fact he showed no desire at all with technology. The staff at the Fab Lab treat him with respect and are patient working with him. After encouragement from his instructor, Randy not only sat at a computer, he is now excited when he has a chance to do so.

Randy has the opportunity to return to the Fab Lab to create other projects. A man who has had difficult time staying focused on one project, can now keep to a task until it is complete. He is learning timelines as well as the importance of detail. His confidence level soars every time he enters the Fab Lab doors. He knows how to get from the service center where he participates in a Day Service Program to the Fab Lab. He also is learning his way around the facility.

Randy says the Fab Lab is "cool." He is able to create in ways that extend far beyond a language barrier; far beyond a disability barrier. He shows interest and initiative. When Randy completes even parts of a project, his final words are, "That's not bad." But the smile on his face tells so much more.

Meet Randy, a young man who has been diagnosed with several disabilities and receives support services through CLASS LTD located in Independence, Kansas. He is also a student in the GOALS (Giving Opportunities to Adults for Learning and Success) Program where people with disabilities can go to Independence Community College to take mini courses in a college environment.

Randy was introduced to the Fab Lab when he participated in a project sponsored by the GOALS Program. His Road and Pedestrian Safety Class decided to take on a crosswalk art project to place at the Riverside Park and Zoo. In order to complete the task, the students needed a stencil. Through the help of his instructor, Tim Haynes, Randy created a tennis racket stencil out of metal from start to finish for the crosswalk.

Randy's speech is garbled, and he does not carry on conversations with many people. He also tends to not take on challenges out of his "comfort zone." When Randy goes



Group displays metal tennis racket stencil made by Randy and team with Tim Haynes, manager Fab Lab ICC

TEDxICC

Videos Now Posted on YouTube



Volunteer sound tech, Chris Moore shares audio tips with presenter Vibhavari Jani the evening before TEDxICC on this past April 29.

The video versions of TEDxICC’s live presentations have all been posted to the TED web site and YouTube. To view, go to YouTube and search for “TEDxICC” and choose from the listings of all presenters.

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| Monica McCarthy | Philosophy: The Life Hack of the Future |
| Braidon Beard | When A Poor Man Looks in the Mirror |
| Nurali Mamedov | A Broadening Abroad - An International Prerequisite |
| Ralph Richardson | The One Health Movement; Animals, Environment, and Us. |
| David Weaver | The American Story is Changing...In Real Time |
| Jon Bachura | Entre-Pre-Neurology: Cultivating the Entrepreneurial Species |
| Rodney Walker | Rethinking Social Emotional Trauma |
| Diana Kander | Protect Your Job From Innovation |
| Vibhavari Jani | Rethinking Future Rehabilitation for Wounded Warriors |
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