FAB LAB ICC
IMAGINE • DESIGN • CREATE
Independence Community College

FAB LAB BLAB

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Editor: Susan Correll
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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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FAB LAB BOOT CAMPERS

Support Friend with Leukemia

by Julia Stafford

Independence Recreation Commission Youth Volleyball Team

Fab Lab ICC is dedicated to pursuing the mission of the Fab Lab Foundation, which seeks to realize that anyone, anywhere can make (or do) anything. So, when Alisa Beecham called with an idea from her two children, who are Fab Lab summer boot campers, the Fab Lab was pleased to join the mission and help assist with the project.

The two children are fifth-grader Charlee Lemon and third-grader Bryant Heapes. The mission is to raise awareness for childhood cancer. To boost their mission, they designed handmade stickers and then printed them at the Fab Lab for their friend, Scheridan Penrod.

Scheridan has been fighting against acute lymphocytic leukemia since November of 2013. She is in fifth grade now and is currently in remission and undergoing treatments.

The stickers that Charlee and Bryant created feature a gold ribbon and a phrase; "Leukemia is a word, not a sentence." The stickers were worn for a game by Charlee's rec volleyball team, Cantrell's, and Bryant's rec football team,

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Boot Campers Support Friend with Leukemia (continued from Page 1)

Alisa Beecham, (left rear) mother of Bryant Heapes and Charlee Lemon (right front) show off the stickers created at Fab Lab ICC in support of friend Scheridan Penrod's battle with leukemia. Scheridan's grandmother, June Vieth, had her own battle with cancer a few years ago. "Scheridan was my greatest cheerleader, now I'm hers."

Orange Crush, to support Scheridan. Orange Crush's team slogan is, "Fear nothing, attack everything." This motto came from Kansas City Chiefs player Eric Berry. Berry said these words when he returned to practice after beating Hodgkin's lymphoma. No motto could better fit Scheridan's determination.

"She's braver than I am," said Scheridan's grandmother, June Veith, who has had her own cancer battle. "When I had cancer, Scheridan was my biggest cheerleader. We are partners."

The three kids have developed a strong bond over the past few years. Charlee and Scheridan were in the same third-grade class when she was diagnosed. They've remained just as close through Scheridan's battle.

Charlee and Bryant want Scheridan to know they haven't forgotten about her.

"We are hoping that this will help people know more about leukemia," Charlee said. "We wanted to do this because we didn't want those with leukemia to feel left out or forgotten," Bryant added.

Sheridan was able to attend the two games and meet all the kids who sported her stickers. Before the games, she said that is was very cool that so many kids were going to be wearing the stickers. Her grandmother, June, thinks that this entire mission is very hopeful.

"These are kids," June said. "They have no idea how much of a difference this is going to make or how much this means. We will never forget it."

Showing their entrepreneurial, intuitive mindset through the production and execution of this vision makes the Fab Lab proud of their summer boot camp members.

"The kids always tell me that if real school was as much fun as the Fab Lab summer boot camp, they'd get up (out of bed) on their own," Alisa said, laughing.

With determined young minds like Charlee, Bryant and Scheridan, any mission is pursuable. Anyone, anywhere can make (or do) anything.

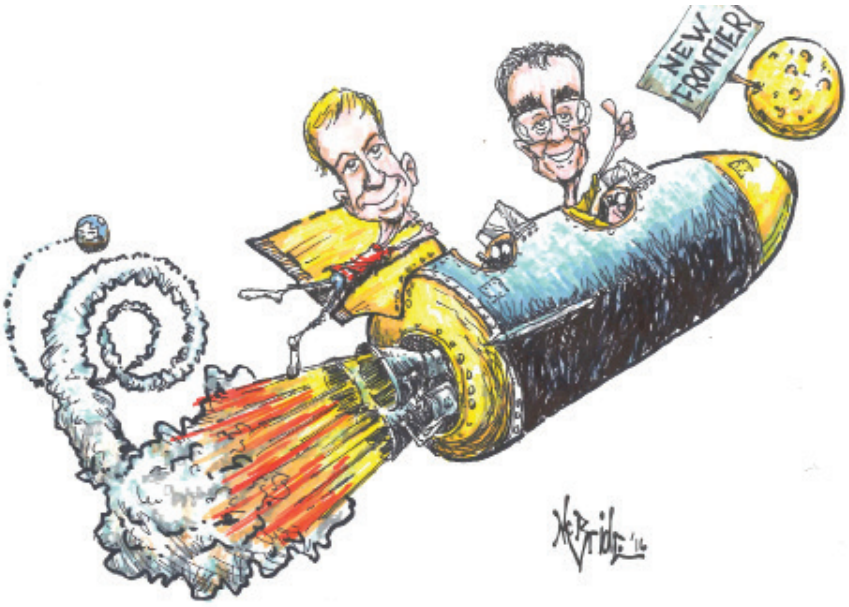
From the DIRECTOR'S CHAIR

Jim Correll

Two Years Old
and Just Getting Started

I can hardly believe we've just had our second birthday. It was October 1, 2014, after just seven months of "serious" planning, that we opened the doors for the first time. Since our grand opening celebration, things have happened and they have happened quickly, with the speed accelerating each day as we move forward. Tim Haynes and I have often used the analogy that we feel like we're on this rocket, holding on for life, as it takes on a path with twists and turns. There's no way to summarize everything that's happened in this column, but we thought it would be fun to take a look back at the first two years from a high level.

► 7,000 visits during this first two years.
► 9/30/14 3D printed Cyborg Beast prosthetic hand for 13-year old Kara Marr.
► 2/7/15 Hand Up weekend to fit Cyborg Beast hands for 3-year old Brinley Papish and 4-year old Preston Bundy from Overland Park and Manhattan.
► 2/10/15 Media coverage resulted in news story on TV in 25 states and Venezuela.
► 2/14/15 Received thank-you email from Dr. Jorge Zuniga, developer of the Cyborg Beast hand.
► 4/17/15 First meeting with Mark Werthman, Federal Economic Development Agency (EDA) about grant to expand Fab Lab ICC.
► 6/16/15 Ribbon cutting for the 10,000kw Westar solar array, making us the world's first solar-powered Fab Lab.
► 6/25/15 Tim Voegeli makes 3D printed prototypes of what would become known as "Bead Biters" for bicycle enthusiasts, becoming the first entrepreneur we helped to market.
► 7/27/15 First Fab Lab Boot Camp for 8- to 14-year-olds.
► 10/11/15 Tim and Jim present about Fab Lab ICC to National Association for Community College Entrepreneurship (NACCE) in Houston, Texas.
► 11/11/15 First class visit by Greenbush Gifted program students.
► 3/22/2016 Tim and Jim present about Fab Lab ICC to USA Fab Lab Network Symposium in Bentonville, Arkansas.
► 6/7/2016 Hosted "Maker Girl" 3D design and printing session for 7- to 10-year-old girls.



Cartoon courtesy of Steve McBride, Independence Daily Reporter
While we don't yet know where else Fab Lab ICC will take us, the ride promises to be a wild one, and we look forward to sharing it with our students and community members.

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Tim Haynes
Fab Lab Manager

How To Make MAKERS

A constant struggle of any Fab Lab is to facilitate learning, while avoiding the outdated approach of heavy-handed, top-down, "Sage On The Stage" teaching. Our emphasis must be on developing strategies, not skills; purposeful inquiry and exploration, not obedience to instruction.

I'm confident that this semester's crop of Fab Lab 1 students will yield a fruitful harvest. They are engaged, curious, diverse and ready to begin their final projects. Throughout the semester, I have introduced case studies and concepts of problem solving and entrepreneurial mindset in an effort to focus the students' attention to how Making supports self-efficacy, community development and creative confidence, and how these fit into the greater social fabric. This article is not a recipe or even a set of instructions. It is a profile of success stories that continue to shape the way we do things at Fab Lab ICC and how I do things in my Fab Lab 1 class.

Each semester is different, and not just because I deviate from the plan enough that, at some point during the semester, I'll just throw it out completely. No, each semester is different because the students are new, and each brings a unique background and set of experiences to the Fab Lab. They aren't all motivated to learn the same skills or tools, or to tackle the same problems. Some want to focus on software and CNC machines. Others want to develop manual skills with traditional shop tools. No matter what, they all have to feel like they can share the space, work together and add value to the class. Fortunately, we never struggle to appeal to a diverse crowd of users. In fact, according to David Kelley of IDEO – whom we have to thank for the computer mouse, among other things – this diversity, when unleashed in the right way, leads to better ideas, solutions and products, and a richer learning experience for all involved.

My students come from many different family backgrounds, including education, farming, manufacturing and small business ownership. To put them all in a course and challenge them to develop new problem-solving skills while using skills they already know, is something they've rarely been asked to do. Often times, when training or developing new skills, we are told that what we already know is irrelevant or insufficient for performing a task, and the new information will unlock the secrets to be successful. In Fab Lab 1, I teach them the opposite. Just as Plato believed that knowledge was already contained within the mind, and that it merely had to be unlocked through informal learning processes, we are seeing the most successful Makers emerge from some unlikely places. My students' success is largely attributed to their willingness to apply their existing skills and knowledge in new and different ways. If a farmer can learn to use his or her understanding of bovine psychology to develop a new cattle pen, stockyard or trailer, then that farmer has the skills necessary to solve problems in a variety of other ways typically overlooked by his or her fellow farmers. In one famous case, Temple Grandin did just that and permanently revolutionized the cattle industry.

In modern times, in Western society, we tend to view our position as somewhat specialized and somewhat narrowly focused. Even when we perform an enormous variety of tasks, we often view our role as defined by what we are, not what we do. Machinist, CAD technician, engineer (or more typically, civil-mechanical engineer), retail salesperson; these are all interesting titles, but the people who perform the tasks related to these titles do complicated work on a regular basis. They are capable of much more than their roles would suggest to outsiders. To make Makers, the Fab Lab seeks to empower individuals to become aware of what they already do and know how to do, in order to show that often times, they already can.

Director's Chair (continued from Page 3)

► 6/21/16 Mitsubishi Truck and Mini-Trade Show event.
► 8/19/16 Met with SAVE board of directors about incorporating maker space into their Veteran Farm project.
► 9/12/16 Work with former Fab Lab Boot Campers to print Childhood Leukemia awareness stickers.

In addition, we've hosted countless classes, seminars and tours and we are always working with a handful of entrepreneurs toward launching their products or businesses. We've discovered a surprising and amazing boost in self-efficacy to nearly everyone involved with the Fab Lab ICC experience; gifted, challenged, old, young, male, female, everyone.

Do we have challenges? To be sure. To keep memberships affordable, staffing will always be a challenge. We continue to take advantage of student work-studies, but when an individual student's work-study hours are depleted, we have to find new ones. Training to bring all of us up to speed on using our machines to make the creations come to life will likewise also always be a challenge. Sustainable funding will always be on our mind. We'll keep working to meet the challenges.

While we don't yet know where else Fab Lab ICC will take us, the ride promises to be a wild one and we look forward to sharing it with our students and community members.

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 per year. Contact: jcorrell@indycc.edu or 620-332-5470.

Edited by Susan Correll

FOR SALE!

FAB LAB ICC SHIRTS

The Fab Lab ICC initial launch of Fab Lab branded merchandise has begun with the arrival of several white polo shirts with the Fab Lab ICC logo embroidered on them.

We plan to offer other branded merchandise; i.e. cups, mugs, glasses, etc., in the future. The profits from any Fab Lab branded merchandise sales will go into a special fund for what we call "need scholarships."

We always offer "need scholarships" when we have an event for youth, like last summer's Maker Girls and Fab Lab Boot Camp. Usually a parent or teacher makes the request on behalf of a student who can't afford the registration fee. We never want to turn away a young Fab Lab participant due to financial need, so we keep an informal need scholarship fund available for these situations. Some people have donated money to us for this use, and we appreciate these kinds of donations. The addition of any profits from our branded merchandise sales will strengthen our ability to provide this service.

We'll start out with a sample inventory of embroidered white polos and heat-transfer tees, as shown below. The polos are priced from $19.95 to $24.95, depending on size; tees at $8.95. We'll take your order if we don't have the size or color you need. Please email jcorrell@indycc.edu or call 620-252-5349 for more information.

Happy Helpers ♥ Fab Lab ICC

by Matt Ysusi

Independence High School Happy Helpers special ed class. Instructors Matt Ysusi (left) and Jennie Stewart (standing); students Shayanne Ross and Rolland Krause (seated).

Hi. My name is Matt Ysusi, and I am a special education teacher and coach at Independence High School. During my time at the high school, I have often asked myself how I could get my students more involved in applying job-related skills that are needed in the workforce today and possibly even creating a business for my students to run. We have tried several things, like cookie sales and slushies at lunch, that have helped us work on customer service and counting change, but we still missed the mark when looking at some job-related skills.

About 14 months ago, I began to take my vocational skills training class out to Independence Community College and the Fab Lab to begin working on a variety of skills that would translate into the workforce. At first, we were unsure of the projects we would do and how exactly the class would operate. Now moving to present day, our kids are doing projects daily and we have made some great connections with local businesses, organizations and people. Tim and Jim have both been fantastic in supporting us on this journey and our students absolutely love it.

This past year, we partnered with Edward Jones to customize client gifts. Gregg Webster at Edward Jones was kind enough to donate money to help pay for our memberships in return for our services. Examples of some of the projects include engraved picture frames and Yeti cups. Our kids take great pride in knowing they are creating products for others and have excelled in this setting. We have done many more projects ranging from Christmas gifts, to metal tennis signs for the Independence Tennis Association, and many more personalized gifts.

The best part about this whole experience, though, is not learning how to use all this great technology. That is a big plus, but not the best part. The best part is seeing kids who are consistently told they can't do something or viewed as incapable of doing something excel in an environment where they create and experiment daily. My students are using laser engravers, working with complex computer programs, and are pretty good at it. I love seeing the confidence that it brings out, and I know that these skills could hopefully help them as they transition to life after high school. I am so very grateful that we have this opportunity. I know the students and I are looking forward to what it brings in the future.

How a Change in Mindset

Inspired the Birth of Fab Lab ICC

By Jim Correll

The change in mindset that led to the creation of Fab Lab ICC all started at an entrepreneurial community college conference in October 2011. Jim Correll awaits his signed copy of "Who Owns the Ice House?" by Gary Schoeniger and Clifton Taulbert. Photo courtesy of Thom Ruhe, then head of entrepreneurship for the Ewing Marion Kauffman Foundation.

How did Fab Lab ICC come about? Or, How did the smallest community college among the 19 in Kansas start the first Fab Lab? Although Fab Lab ICC opened in just seven months following the final decision to launch, from March of 2014 to the Grand Opening on October 1, 2014, the idea and concept had been kicked around for several months prior. This wasn't the detailed planning one might have expected, but more accurately, a period allowing for a change in mindset. Our change in mindset started toward the end of 2011.

The Successful Entrepreneur Program at ICC started in 2006. Those first years emphasized small business management techniques and formal business plans as the primary tools of new business start-ups. Although the information presented was helpful, by 2011, it was becoming clear that knowledge of small business management techniques and formal business plans do not inspire people to start new businesses.

In October of 2011, I attended my second annual conference of the National Association for Community College Entrepreneurship (NACCE). The epiphany came when I heard Gary Schoeniger and Clifton Taulbert talk about the revolutionary new Ice House Entrepreneurship program. Gary founded the "Entrepreneurial Learning Initiative" (ELI) to develop a video-interview based curriculum to better demonstrate how entrepreneurs think. One of the entrepreneurs interviewed was International speaker and Pulitzer nominated author Clifton Taulbert. After this chance meeting, Gary was so enthralled with Clifton's story that they collaborated and co-authored the book "Who Owns the Ice House." The book and program are centered around Clifton Taulbert's Uncle Cleve Morman, a black man who owned the only ice house in Glenn Allan, Mississippi, in the 1950's, a time when the American south was still very segregated. Even in this harsh environment, when nearly all the other African American men and male teenagers were working in the cotton fields, Uncle Cleve figured out a way to own his own business. While literate, Uncle Cleve had no special education, nor did he have a lot of venture capital and he certainly had neither privilege nor political favor. Yet, in spite of all that, he owned the only ice house in town. Everyone bought ice from him. The ice house program represents the idea that most businesses start small with entrepreneurs who have little money, and most don't have special business educations. The program strives to help people understand and

Much inspiration and mentoring came from our visits to Fab Lab Tulsa. At the time of this visit in July of 2014, Tulsa was one of about 300 Fab Labs in the International Fab Lab Network (IFLN). Fab Lab ICC became a member of IFLN soon after our grand opening on October 1, 2014. Today, there are more than 600 members of IFLN.

emulate the entrepreneurial mindset of these entrepreneurs and how they think about problems as opportunities needing to be solved.

Hearing Gary and Clifton speak about

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Birth of Fab Lab ICC (continued from Page 7)

The first Entrepreneurial Mindset class, fall semester of 2012, when only 10 other community colleges in the world offered the revolutionary new entrepreneurship curriculum. Centered around eight life's lessons in entrepreneurial thinking, the main component consists of video interviews with successful entrepreneurs from all over the United States to gain insight into how they think. Until Fab Lab ICC existed, Independence classes met at the iMall in downtown Independence.

Uncle Cleve and the new program was the beginning of our own change in mindset in the way we were going about inspiring entrepreneurial start-ups and helping small business owners. In November of 2011, we launched an informal, weekly brown bag lunch series where entrepreneurs and small business owners could gather to learn about new business ideas, new innovations in technology and learn more about new and existing businesses in the area. At the same time, we went through the academic process to offer the "Entrepreneurial Mindset" class, featuring the Ice House Entrepreneurship program, in the fall semester of 2012. At the time of ICC's first offering, there were only 10 community colleges in the world using Ice House. That first class included 15 participants, about 12 adult community members with 3 traditional community college students. Classes continued each following semester, along with the weekly lunch meetings; our effort to widen the circle of entrepreneurial mindset in our area.

In addition to being an early adopter of "Ice House," we became advocates and promoted the program whenever and wherever we had opportunity. This advocacy would later become a key ingredient in the financing of Fab Lab ICC.

Meanwhile, back at the weekly lunches, we viewed the first videos about 3D printing and later, Fab Labs, beginning mid-2012. That's where the first thoughts about having a Fab Lab in Independence were born. Conversations and more videos followed, and ICC president Dan Barwick and I, along with community member Ned Stichman, made a trip to see Fab Lab Tulsa, one of about 150 Fab Labs belonging to the Massachusetts Institute of Technology (MIT) initiated International Fab Lab network.

In October of 2013, I went back to the NACCE conference to present the idea that vocational-technical education should include Entrepreneurial Mindset (i.e. Ice House) to help make vocational students better problem solvers. The presentation also included the idea that a Fab Lab or Maker experience should also be included in vocational-technical education. On the Sunday night before the conference began, I wandered to the hotel restaurant for dinner. While waiting to be seated, I saw Gary Schoeniger, ELI/Ice House founder, come in with Thom Ruhe, head of entrepreneurship at the Kauffman Foundation, a primary supporter of the development of the Ice House program. By this time, I knew Gary well as he had come to Independence early that year in March for a keynote at a community luncheon. I had met Thom during the facilitator training at the Kauffman Foundation in May of 2012. We greeted one another and Thom related that he'd just returned from the Vatican after attending a 3-day summit with the Cardinals during which he introduced "Ice House." He said the Cardinals were starting to realize that entrepreneurship was really the only hope for ending world poverty. Although half-dead from jet lag, Thom was on the schedule for a lunch keynote speech the next day. Gary took a call and Thom told me about a community college Fab Lab that Kauffman was supporting to the tune of several hundred thousand dollars. I jokingly told him that I thought we could build one at ICC for $100,000 and that he should support us. He said he liked the way we had supported and promoted Ice House and encouraged me to write to him after the conference to ask for support. He suggested asking for $50,000 and then come up with a local match of $50,000 to make up the $100,000 I asked about. Over the next several months, we wrote letters and provided information, until in March of 2014, the Kauffman funding was imminent, although we didn't receive the funds until June.

I've previously written about the inextricable link between the Fab Lab experience and entrepreneurial mindset. Not all Fab Labs are linked like that. Looking back, I think the link was established with the early mindset change that ultimately led to the early thoughts about having a Fab Lab and culminated with the substantial initial funding coming from the Kauffman Foundation because of our support of a revolutionary entrepreneurship curriculum program.