

IMAGINE 

2014

STUDENT INNOVATION

@the



and 20 tips to become an

- * innovator
- * creator
- * maker
- * influencer
- * entrepreneur

THE 20 TIPS

1. Think Like an Innovator.....	p.3
2. Gear Up	p.4
3. Start Big	p.5
4. Launch a Company	p.6
5. Feed Your Passion.....	p.10
6. Predict the Future	p.13
7. Build Something.....	p.14
8. Get Inspired.....	p.16
9. Invent Something.....	p.18
10. Look Closer	p.19
11. Save the Planet.....	p.20
12. Make a Video Game	p.21
13. Be an Artist	p.24
14. Blur Lines.....	p.25
15. Find Your Rhythm	p.26
16. Play with LEGOS	p.27
17. Run for Office	p.27
18. Research with Purpose	p.28
19. Go to Jail	p.30
20. [Fill in Blank]	p.31



University of Utah President David Pershing.

FROM THE PRESIDENT

Welcome to the University of Utah

As a world-class research institution, the University of Utah celebrates innovation and the process of discovery. We believe that here in Salt Lake City at the foot of the majestic Wasatch Mountains, we have built something unique — a vibrant learning community where students and faculty from a wide variety of disciplines come together to explore possibilities, pursue ideas and create solutions to real-world challenges.

You'll find this spirit of interdisciplinary collaboration and entrepre-

neurship throughout our campus. We believe it is the spark that animates the university's culture, enhancing the educational experience for all students. No matter what the field of study, our students are encouraged to pursue their ideas towards discovery and broad-reaching positive effect.

Our results are impressive — each year, our research generates dozens of patents and hundreds of inventions. I encourage you to learn about our remarkable students and their recent success on the following pages.

ABOUT “STUDENT INNOVATION @ THE U”

“Student Innovation @ the U” is a celebration of student innovators and entrepreneurs at the University of Utah presented by the Lassonde Entrepreneur Institute. Student innovators come in many shapes and sizes — they are founders, inventors and artists. This publication represents some of the best current examples. Browse. Get inspired. Get involved.

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LASSONDE ENTREPRENEUR INSTITUTE

The Lassonde Entrepreneur Institute, a division of the David Eccles School of Business, is the hub for student entrepreneurship and innovation at the University of Utah. The Lassonde programs were first established in 2001 with generous support from Pierre Lassonde, and they have continued to grow and inspire more students each year. Learn more at www.lassonde.utah.edu.

CONTACT US

Have questions? Ideas for the next issue?

Contact the Lassonde Entrepreneur Institute at 801-587-3836 or lassonde@utah.edu.

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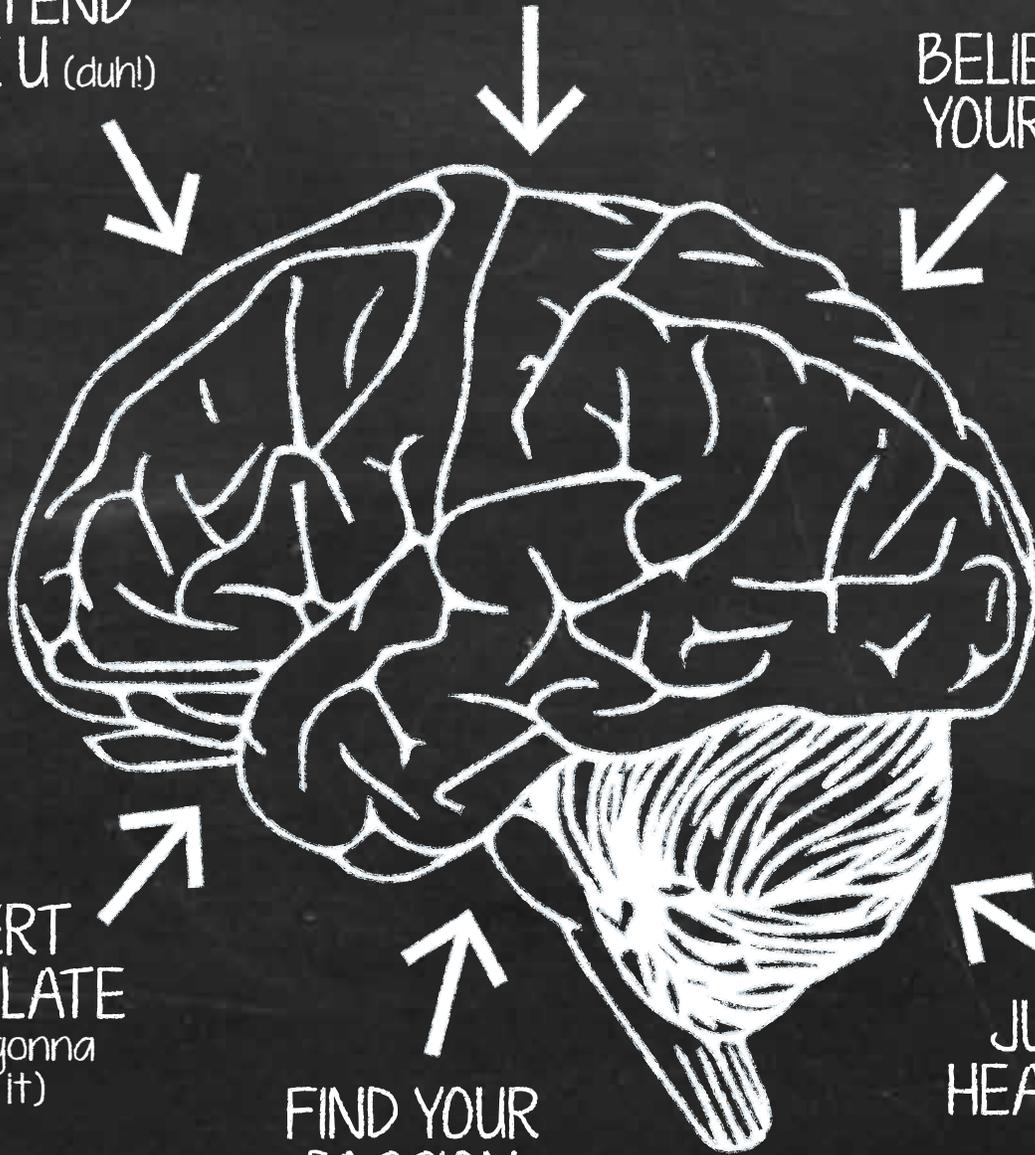


THINK LIKE AN INNOVATOR

DON'T WORRY
ABOUT MISTAKES

ATTEND
THE U (duh!)

BELIEVE IN
YOURSELF



INSERT
CHOCOLATE
(you're gonna
need it)

FIND YOUR
PASSION
(look in this book)

JUMP IN
HEADFIRST



GEAR UP

You'll be surprised by what tools you will need. Gather as many as you can.

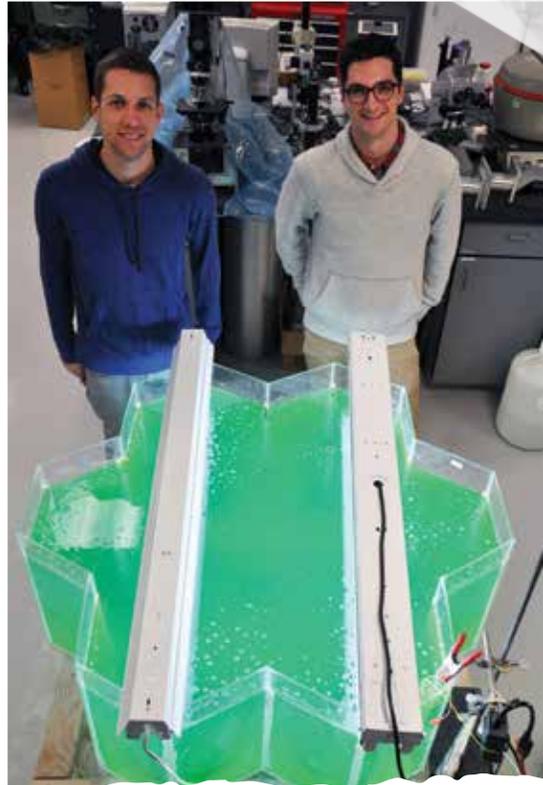


Forget about taking things slowly. Just go for it!

START ~~SMALL~~ BIG

Undergrads Turn Algae into Fuel

Using algae as an alternative biofuel is not new, but two undergraduates in chemical engineering may have found a way to commercialize it on a large scale — something that researchers have not yet figured out how to do. Sophomores Tyler Lee and Samuel Doane are developing a bioreactor system capable of extracting oil from algae — a lot of algae. If successful, their reactor could be scaled to an industrial size and may help reduce dependence on fossil fuels. “We have to think on our feet,” Lee said. “It is well known that algae holds oil, but it’s a race to figure out how to extract it on a mass scale.”



Tyler Lee (left) and Samuel Doane stand by their bioreactor.



U students connect patients to health-care resources.

Connect2Health Builds a Healthier Community

Modern dance major Amanda Newman has found a way to combine passions for dance and public health. After participating in an Honors Praxis, Newman began noticing a gap between health-care resources and the ability for underserved populations to access these resources. With the help of the Honors College’s faculty, Newman and pre-medical student Dash Porter began the Connect2Health program to connect patients to the resources they need to build healthier lives. Since the program opened in August 2012, Connect2Health has served over 1,000 patients. The team currently consists of 29 student volunteers.

Refugee Program Makes Global Impact

Three honors students are solving international issues through a refugee program they started that pairs college students with high-school-aged student refugees for at least a year to help them with school work, standardized tests and any other college prep. The students behind the project are Melinda Adams, Megan Dolle and Brinadee Pierson. Adams started the project after discovering only one in five refugee scholarships are being used. “There are many resources for the refugees in the Salt Lake City area, but not many of them know how to use them,” Pierson said.



Honors students (left to right) Megan Dolle, Brinadee Pierson and Melinda Adams launched a program to help refugees.

#4

LAUNCH A COMPANY



Students Take Control of Their Futures by Founding Startup Companies.

Starting a company is one of the best ways to learn how to become an innovator. With the help of the Lassonde Entrepreneur Institute at the U, many students are doing just that. They are taking novel ideas and products and carving their own paths in business and life.

Fetch Food Makes Food Delivery Easy

Fetch Food has one of the cheapest and fastest food delivery services in Salt Lake City. Thanks to a streamlined and completely online delivery service, the company is rapidly expanding. It has already achieved \$90,000 in sales and has a growing base of restaurants that rely on it for delivery. “I’ve always wanted to be an entrepreneur. I want to build something that will impact the world,” said Karthik Raman, the founder of Fetch Food and a biology student at the U. The company is based on a routing algorithm to make deliveries efficient and inexpensive. Fetch Food got an early boost from a \$5,000 prize from the U’s Opportunity Quest competition and a seed grant from the Entrepreneur Club.



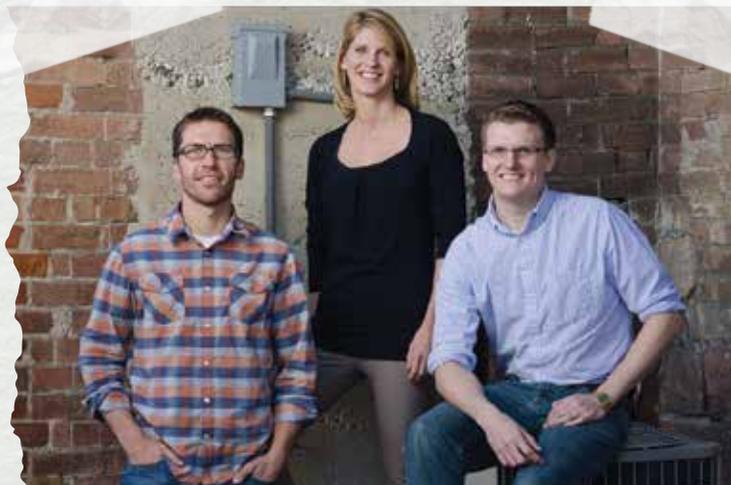
Fetch Food is a growing food delivery service in Salt Lake City.

The Queen's Tea founders take a detour to the Great Wall of China on a business trip.



The Queen's Tea Helps the Homeless One Cup at a Time

Two U students are following their dreams — and taste buds — with the launch of their tea company, The Queen's Tea. After discovering a mutual interest in the popular beverage and being discouraged by the boring selection available at the supermarket, the pair decided to turn their hobby of making their own teas into a business. A year later, with a blend of history and science, Seth Anderson, a graduate student in history, and Michael Ferguson, a graduate student in bioengineering, are preparing for the launch of their new line of teas and corresponding non-profit charity, DigniTEA, which will provide food, water, clothing and other essentials to Salt Lake City's homeless youth. "We partnered with the Homeless Youth Resource Center in Salt Lake City to create a sustainable mechanism for financial support," Anderson said. "Five dollars from the sale of every tin or bag of DigniTEA will be donated."



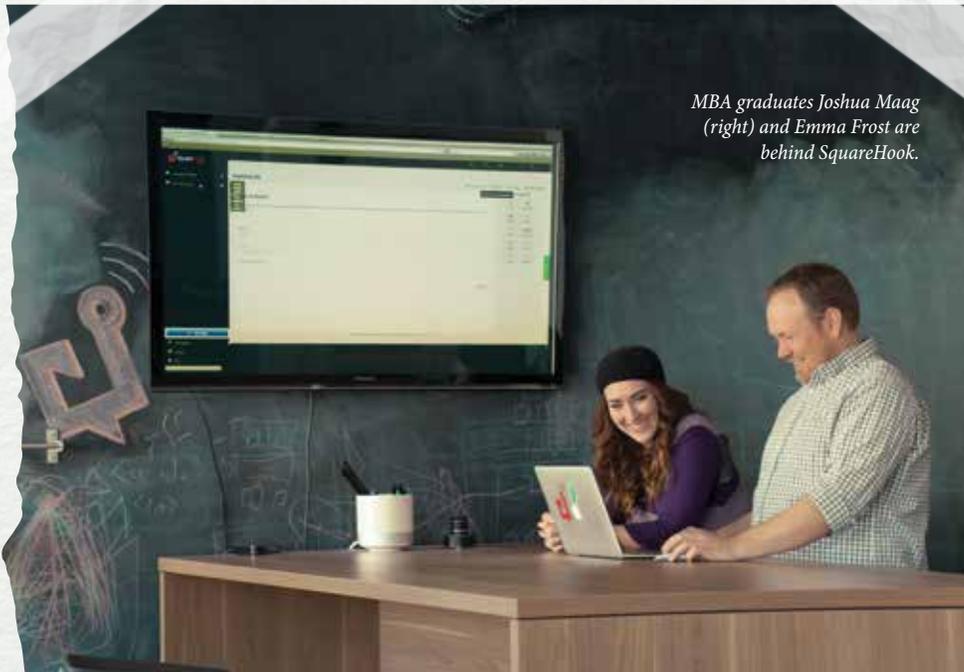
SunCatcher team members designed an outdoor canopy with solar panels.

SunCatcher Energizes Canopies

Outdoor events won't be the same if a group of graduate students are successful with their plans. They launched a company, SunCatcher, that is developing a new type of portable canopy that uses solar panels to generate power while providing shade. The product is uniquely designed to allow the canopy to constantly face the sun while providing shade and shelter. Team members include Abbey Ehman (a masters of real estate development student), Jesse Smith (a masters of electrical engineering student) and Rocky Kerr (an MBA graduate from the class of 2013).

SquareHook Makes Building Websites Easy

Guided by a desire to make creating websites easy, Joshua Maag and Emma Frost launched SquareHook in 2012 — and they haven't looked back. They started the company while pursuing MBA degrees at the U. Their platform allows people with no technical knowledge to create, launch and manage websites. They recently added an ecommerce feature and surpassed the 200 website milestone.



MBA graduates Joshua Maag (right) and Emma Frost are behind SquareHook.



Cam Cameron launched his company Just Play Cleats to make quality soccer shoes more affordable.

Just Play Cleats Designs Affordable Soccer Shoes

When Cam Cameron started his MBA, he had no idea he would launch a company. Then he took the Venture Foundations course. What followed was a passionate effort to lower the price of soccer cleats and provide the world with shoes by players for players. "Soccer can change your life for the better, and all players should have the opportunity to experience the purity of the most beautiful and most popular game in the world," Cameron said.



Startup SimPayX won \$5,000 at the U's techTITANS competition.

SimPayX Reinvents Mobile Payments

Student startup SimPayX is developing a mobile payment platform that allows people to search for the best product for their needs based on price, inventory and brand, and they won \$5,000 in the U's techTITANS competition to advance their idea. Based on a patent-pending authorization algorithm, SimPayX reduces the security threat in a mobile payment. The team consists of Rob Brown, Anuj Gupta and Shreyas Kamat. Brown and Gupta are enrolled in the U's masters of science in information systems program.

Cupcake Idea Takes Student from ‘Cupcake Wars’ to Franchise in Mumbai, India.

University of Utah alum Erik Larsen started a cupcake company in the U’s Foundry program and had no idea what would happen next. The idea exploded, taking him to the Food Network’s “Cupcake Wars” and leading to the chance of a lifetime.

When University of Utah student Erik Larsen sent in his promo video for the Food Network’s hit reality show “Cupcake Wars,” he had no way of anticipating that in just a few years he and his family would be opening one of the first cupcake franchises in India.

But now, Erik and his wife Cori are celebrating the grand opening of their first cupcake shop in Mumbai, which took place on Valentine’s Day 2014.

“It’s been a lot of trial and error,” said Erik, a graduate of the U’s department of communication. “We’ve had to face a lot of cultural barriers. For example, in India, no one has ovens; most people cook over an open flame. We are training a guy right now who had literally never seen a spatula or a whisk and who had never seen a cupcake before.”

Erik got his start in the cupcake business in 2010 when he founded Heaven Cupcake with the help of the U’s Foundry program, a 12-

week program provided by the Lassonde Entrepreneur Institute and open to all U students passionate about entrepreneurship. What began as a small shop soon grew into a recognized brand as the Foundry connected Erik with the resources he needed to design a logo, create a website and develop a promo video for “Cupcake Wars.”

As a result, Erik was the first baker from Utah featured on the show, an experience so successful the network kept inviting him and Cori back. After their third appearance on “Cupcake Wars,” Erik and Cori received an interesting offer from executives at an India-based company who had seen their performance.

“About two years ago, cupcakes became very big in India, but no one has started a franchise yet,” Cori said. “And no one (in India) understands cupcakes that well so the company thought, ‘why not fly in an American brand?’” →



Erik (left) and Cori Larsen launched a cupcake company together. Erik is a graduate of the U’s department of communication and participated in the U’s Foundry program.





Top to bottom: A cupcake prepared by Erik and Cori Larsen, and the Larsens at their first store in India.

→ Drawn to Erik's energy and charisma, the executives from Mumbai knew they had found their brand. "Maybe we didn't win 'Cupcake Wars,' but the fact that the company saw Erik on it and really liked his personality — that was it," Cori said.

Erik, Cori and their daughter Lily arrived in India in September 2013, and since that time the family has traveled all over India sampling cupcakes, experimenting with recipes, and acting as the spokespeople for the new brand. While these developments have forced Erik and Cori to put their degrees to the test, the family has enjoyed experiencing the excitement of a new culture.

Thinking back over how far Heaven Cupcake has come and how far they still have to grow, Erik said, "The Foundry was everything to us; we wouldn't have a logo, we wouldn't have a website, we wouldn't have our search engine optimization done without it. I don't know if we could have done it without that community around us."

In the three years since launching, the Foundry has worked with hundreds of entrepreneurs and helped develop dozens of operating companies that have generated millions of dollars in revenue. But the Foundry's impact reaches much further than corporate development by focusing on developing successful entrepreneurs, not just companies.

"The Foundry alumni are building great careers," said Wil-

liam Schulze, a professor at the David Eccles School of Business. "I just got an email from a 20-year-old student who announced that he is retiring. I guess he has enough money now to live on for a while."

Whether it's a large company like Armor Active, which grew to over \$3 million in value in its first year, or a cupcake company based out of Salt Lake City, the Foundry helps entrepreneurs transform their dreams into reality.

While Erik and Cori are thrilled with the success of Heaven Cupcake, they are already making plans to continue creating in the future. Inspired by the elaborate detail of Indian fashions, Erik and Cori are currently building a new clothing company based out of New York.

"We love doing cupcakes, but it's always exciting to have a new challenge — one without an expiration date," Cori said.

Whether living in Mumbai or New York, whether creating cupcakes or clothing, Erik and Cori continue looking forward with optimism, always watching for new markets and new opportunities for innovation.

"You have to keep moving," Cori said. "There will always be moments of complete frustration when you ask yourself 'Why are we doing this? Why are we trying to teach people who have no idea what a whisk is how to bake? This is insane!' But that's what makes it fun, to know that this is kind of crazy and we are going to do it." ■

Students in the Ute Weather program prepare a forecast that thousands depend on.

ATMOSPHERIC SCIENCE

Ute Weather Forecasts for Community

Students are getting a first-hand look at what it takes to predict the weather in the Ute Weather program — and their work touches thousands of people every day. Their forecasts are broadcast by news agencies across the region, their tweets are seen by thousands, and they provide some of the most accurate forecasts for the U area.

“The program is two-thirds weather and one-third teaching experience,” said Adam Abernathy, an atmospheric science undergraduate student.

Abernathy has been working to revamp the Ute Weather program with Kevin Perry, chair of the atmospheric sciences department. They turned the program around to make the forecasts more reliable and the experience more rewarding for students. “If students hadn’t shown initiative, this wouldn’t have happened,” Perry said.

#6

What's the next big thing? Stay ahead of the curve, and look out for storms ahead.

PREDICT THE FUTURE



DesignBuildBLUFF students spend two semesters designing and building a home in southern Utah.

ARCHITECTURE

DesignBuildBLUFF Builds Better Architects

A U program that pairs graduate students in architecture with Navajos that need new homes, DesignBuildBLUFF is doing much more than providing an educational experience. Not only do students design the homes and build them from the ground up in less than a year, they also learn how to adapt to new cultures and really listen to what a client wants. Navajo culture values different things than mainstream America, and students learn how to navigate these preferences. “As architects, designers and planners, we design the world we live in, and I want to be part of that,” said Emily Black, a graduate student in architecture and a DesignBuildBLUFF team member. “I have always thought I want to get involved and make my contribution.”



BUILD SOMETHING

Get some dirt under your fingernails building houses, prototypes or anything else.

Few programs give the same in-depth experience provided by DesignBuildBLUFF.



"THIS IS VERY DIFFERENT THAN JUST HOMEWORK AND ENGINEERING; IT'S ABOUT TRYING NEW THINGS."

— BEAU FRECKLETON, mechanical engineering major / page 28

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"if yo
succ

"I, as a college student,

— MEGAN DOLLE, international relations major and co-founder of a refugee mentor program / page 5

"There will always be moments of complete frustration ... but that's what makes it fun."

— CORI LARSEN, Heaven Cupcake co-founder / page 10

"As architects, designers and planners, we design the world we live in, and I want to be part of that."

— EMILY BLACK, graduate student in architecture / page 14

"The world has and opportunities help, and before significantly and to simply be u

— NATHAN CHEEVER, econom

"Why not live with the hope that today might be the day. Today might be the day the world starts to change."

— AMANDA NEWMAN, modern dance major and founder of Connect2Health / page 5

"MENTORING IS IMPORTANT CREATING AND INNOVATION"

— DEREK JEWELL, biomedical League mentor program / page

"AS A STUDENT WE ARE YOUNG, E

— KENDAHL MELVIN, political

"I WANT TO BUILD SOMETHING
THAT WILL IMPACT THE WORLD."

KARTHIK RAMAN, biology major and founder of Fetch Food / page 7

"You are not afraid to fail and not afraid to
succeed, you never know what might happen."

LYNN UNGER, master of social work graduate / page 30

"I can make a difference."

"There are so many problems
out there where I can
see where they can be
addressed, they need
to be understood."

Engineering major and Innovation Scholar

"I WANT TO KEEP THIS NETWORK OF
PEOPLE FOR THE KIDS."

Engineering major and co-founder of a FIRST LEGO
team / page 27

"... THIS IS THE TIME WHEN
YOU ARE EXCITED AND INVOLVED."

Engineering major / page 27

"(Don't) settle
for something (you)
don't feel 100 percent
passionate about."

— CHAO HUANG, Ph.D. student in bioengineering
/ page 19

#8

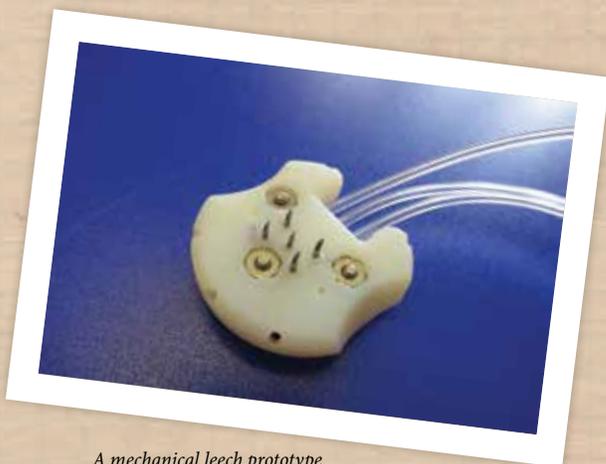
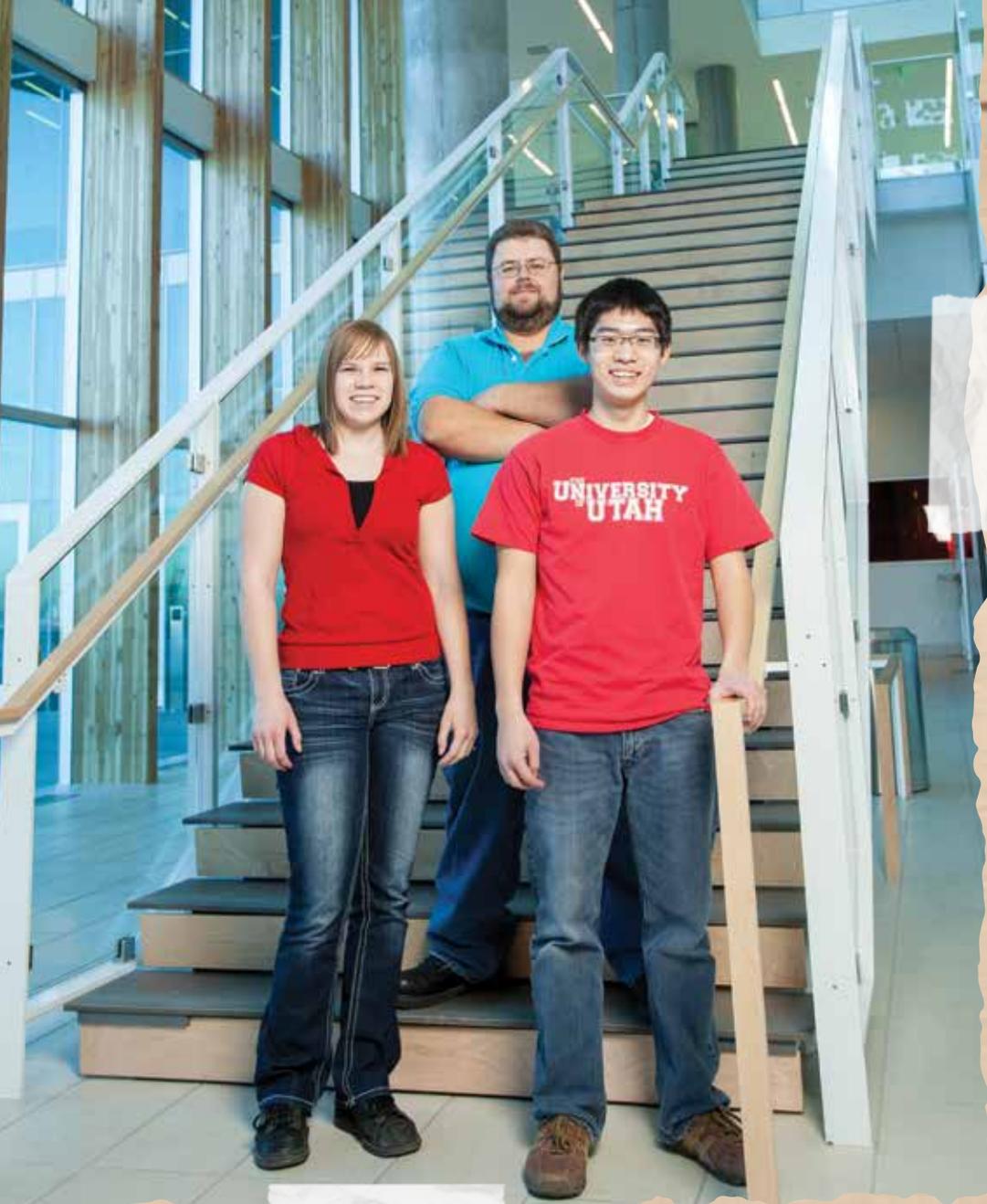
get inspired

What drives you? Find your
love, and go after it.

Engineers Invent Mechanical Leech

Mechanical engineering students Jessica Kuhlman, Scott Ho and Andy Thompson developed a mechanical leech to replace biological ones used in post-surgical tissue reattachment treatment. Addressing biological leech drawbacks, the cost-effective device reliably reduces blood pooling and pressure, precisely injects anti-coagulants into the therapy site, and eliminates the “ick” factor. The mechanical leech was named runner-up in the U’s 2013 Bench-2-Bedside competition. It also placed third among undergraduates at the nationwide 2013 Collegiate Inventors Competition.

Mechanical engineering students invented a product to improve post-surgical treatment.



A mechanical leech prototype.

Put your ideas
to the test,
and create
something new.

INVENT SOMETHING

BIOENGINEERING

Safer Heart Surgery through Better Imaging

Heart surgery is the primary method for correcting congenital heart defects in newborns. A major risk of heart surgery is damage to specialized tissue of the conduction system, which generates and propagates electrical impulses necessary for the heart to pump blood throughout the body. Even through the trained eye of a surgeon, it is impossible to discriminate this specialized tissue from the surrounding heart muscle during surgery as it lies beneath the heart's surface.

“Currently, surgeons rely on guidelines developed from anatomical studies to approximate where it is safe to make an incision or place a suture,” said Chao Huang, a Ph.D. candidate in the department of bioengineering. “Serious complications can occur if this specialized tissue is damaged — usually requiring an artificial pacemaker to be implanted.”

In an effort to improve outcomes in these surgeries, Huang is working to develop a microscopic imaging approach that surgeons can use to discriminate between different types of heart tissue in real-time.

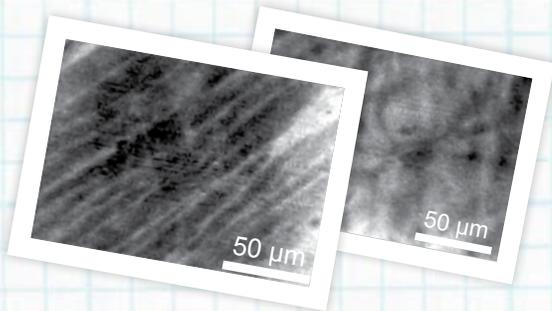
“There were several challenges to this project,” Huang said, “including what features, if any, could be used to discriminate this specialized tissue from other cardiac tissue types, and how to image below the surface of the heart in order to visualize these specialized tissues without disrupting the tissue integrity.” →

An experimental imaging setup designed by bioengineering student Chao Huang.



LOOK CLOSER

Dig a little deeper if you don't see an opportunity at first glance.



Chao Huang is developing an imaging method to differentiate between regular heart tissue (left) and specialized tissue (right).

→ Using an approach based on a recently introduced fiber-optics confocal microscopy system — specialized imaging microprobes and a fluorescent marker of the extracellular space — Huang demonstrated that the specialized tissue of the conduction system could be identified based on its microstructural arrangement. In addition, Huang demonstrated that by configuring the optical properties of the imaging microprobe, images of the specialized tissue could be acquired below the heart surface in a living rat heart.

“We are currently pursuing strategies to further translate our established microscopic imaging approach into the clinical environment,” he said. “In particular, we are exploring FDA-approved fluorescent dyes and development of imaging microprobes specifically for imaging in pediatric hearts.”

By using components that are already FDA-approved, Huang hopes to reduce the number of barriers needed to move the imaging approach into a clinical setting. He believes that the established approach will allow surgeons to reduce the risk of injury to the conduction system during heart surgery and could lead to significant advances in various other surgical disciplines as well.

Huang decided to pursue a Ph.D. in bio-engineering after working in industry as an electrical engineer.

“I finally found my passion in life,” he said. “It took going down some tortuous paths, but now I know that my role in life is to develop life-saving technology. I would advise any student not to settle for something they don’t feel 100 percent passionate about.” ■

SUSTAINABILITY

Bottle of Knowledge Helps U Go Paperless



A group of U students found a way to make freshmen orientation totally paperless; they call it the “Bottle of Knowledge.” Instead of giving students piles of paper, they created a reusable water bottle imprinted with QR codes that link to online materials. The project was led by Samantha Jackson, a health promotion major. The idea came from Ariel Hebert-Voss, a computer science/mathematics major. Their project received a significant boost from the U’s Sustainability Campus Initiative Fund, which awarded them \$28,000 — one of the largest grants it has ever given.

Samatha Jackson is one of the students behind the Bottle of Knowledge.



#12

MAKE A VIDEO GAME



Video Games Are Pouring Out of EAE Program at the U.

The Entertainment Arts and Engineering program at the University of Utah has been receiving national accolades — and for good reason. The students in the program are consistently producing compelling games that are gaining widespread attention and commercial success.

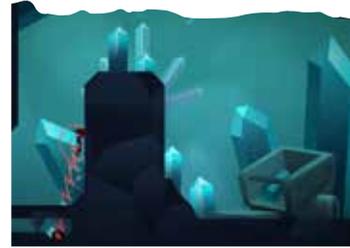


‘Cyber Heist’: A Crime Game with a Twist

While some may dream about hacking into computers to clear their student debts, one group of EAE students is aiming to make that dream possible — in the video-game world, at least. “Cyber Heist” is a two-player game where players take the role of either a hacker or thief and work together to break into a futuristic Department of Education to wipe out all student debt. “We are trying to achieve a couch co-op feel,” said Jake Muehle, a graduate student in the EAE program and one of the game’s lead designers. “The game is designed for the two players to interact, talk to each other and help the other player through the game experience.” The game was named a finalist of the Independent Games Festival Student Showcase — beating out 350 entries from around the world and across all gaming platforms.

In “Cyber Heist,” one player navigates a 3-D world while the other guides them with a 2-D map.

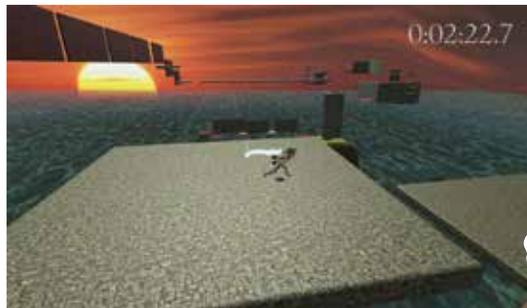




In “Magnetic by Nature,” the player uses magnets to attract or repel from objects.

‘Magnetic by Nature’ Breaks All the Rules

TripleSlash Studios, with their inaugural game “Magnetic By Nature,” is breaking all the rules when it comes to art and physics in video-game design. “The market is saturated by many of the same game concepts,” said Kyle Chittenden, a graduate student in the EAE program and game artist. “As an indie studio, we push innovation to broaden the entire game industry and to produce games that are new and fresh.” In the game, players can propel their automaton through colorful, art-deco-inspired environments using the magnetic fields from different types of magnets to avoid dangers and advance through the levels. Developed by a team of six artists and four programmers, “Magnetic by Nature” is equal parts visual treat and mechanics masterpiece.



“Avatar Trials” is one of the most successful Xbox games ever to come out of the EAE program at the U.

‘Avatar Trials’ Surpasses 60,000 Downloads

In its first year, “Avatar Trials: Ninja Uprising” surpassed 60,000 downloads and 10,000 units sold. The game broke into the top 250 games of all time in the Xbox Indie market — making it one of the most successful Xbox games to ever come out of the EAE program. While these achievements would be impressive for any experienced game designers, the students behind “Avatar Trials” were all undergraduates. “We were all really surprised to see the game do so well,” said Ross Marabella, a senior in the EAE program and team lead for “Avatar Trials.” To be competitive in the industry, Marabella knew it would take more than just great art and programming skills. “I put a lot of work into marketing, social media and search engine optimization to get the word out about the game,” he said.



"Figuratively Foreign" (above) by student Elise Ranzenberger aims to understand German contemporary artists' unique connection to German society while including Ranzenberger's perspective of German identity.

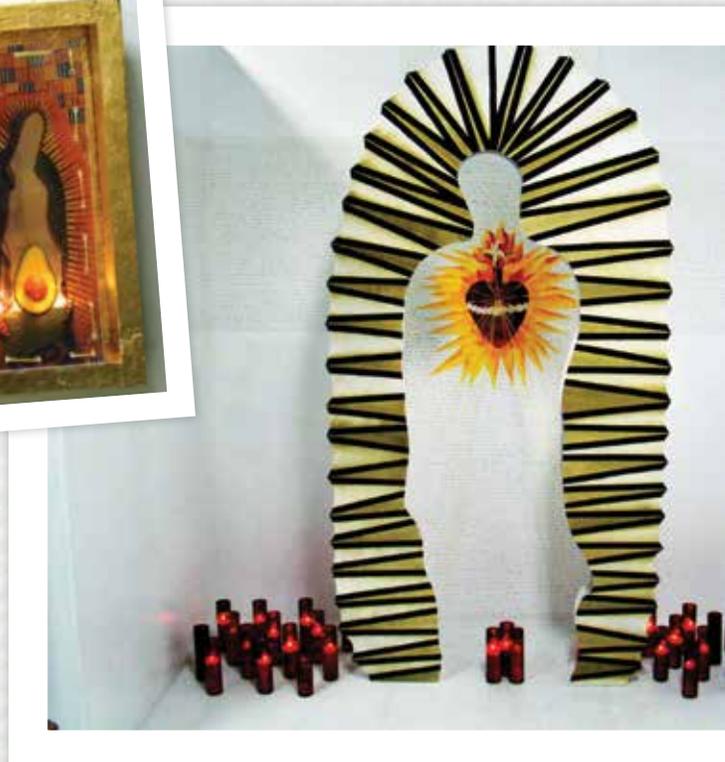
#13

BE AN ARTIST

See things differently. Create something new. Change perceptions. Be a trendsetter.



"Transformed into Omnipresence" (right) created by student Jake McIntire explores the dichotomy and coexistence of absence and presence.



ArtsForce Prepares Artists for Workforce



BLUR LINES

Don't let others define you and tell you what you can and can't do.

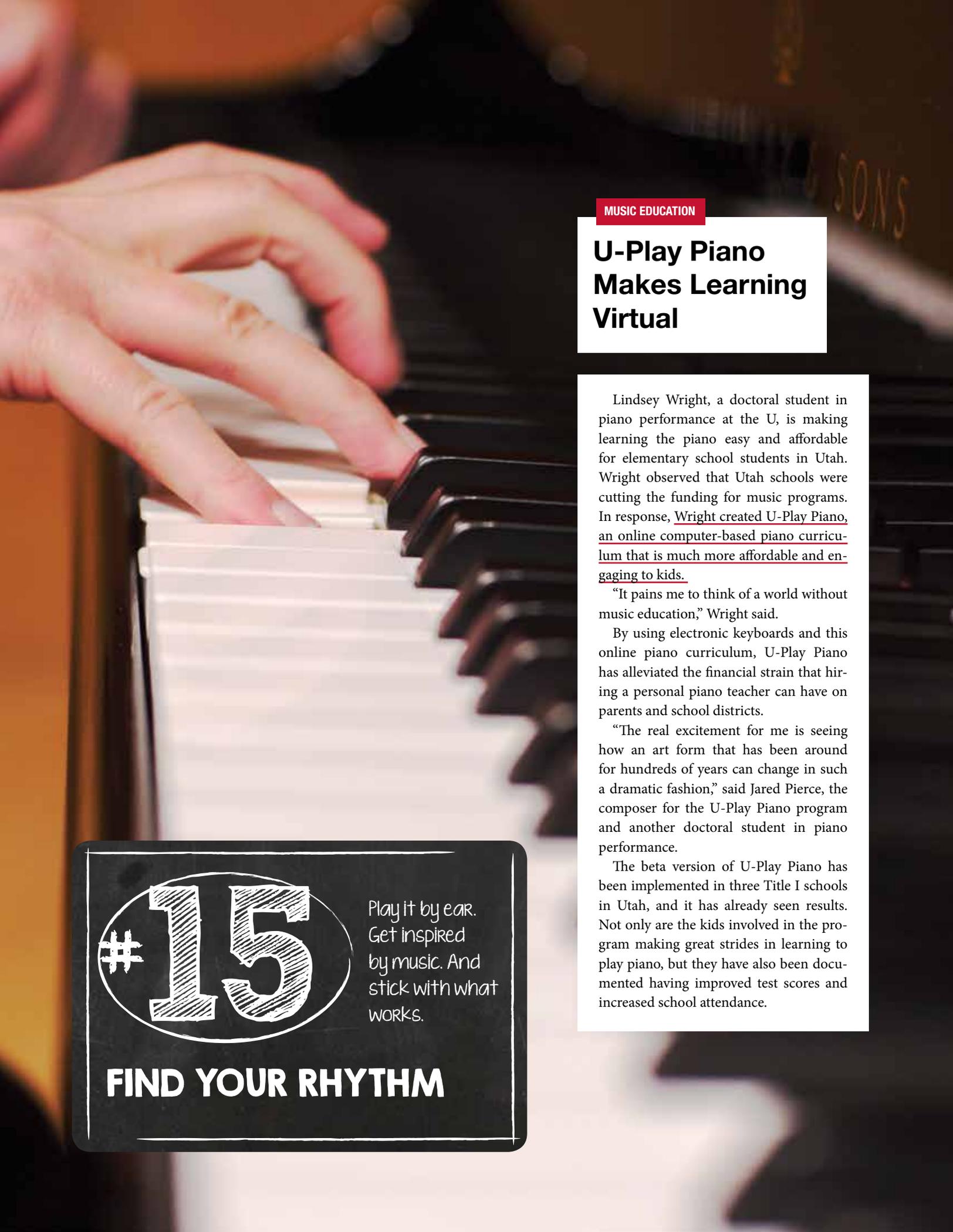
Students in the College of Fine Arts already push the boundaries of what's possible, but they are challenging themselves to do even more through a new program called ArtsForce. This two-day conference organized by and for students was the response to a student survey that showed an overwhelming desire to supplement the education about their art with experiences and information to directly prepare them to enter the workforce.

Through workshops, nationally renowned speakers, panels and networking opportunities, ArtsForce sheds light on the professional skills these students are already developing — transferable skills like creative thinking and problem-solving — and helped them create connections in the community and complete practical tasks like building a portfolio. The first-ever ArtsForce conference was held in November 2013, and the impact on the students was profoundly positive.

“Students who participated in the conference walked away with a better understanding of the value of their arts degrees,” said Trevor Myrick, a double major in art history and mathematics, who helped organize the inaugural event.



Trevor Myrick (center front) helped launch ArtsForce, a conference that prepares arts students to enter the workforce.



MUSIC EDUCATION

U-Play Piano Makes Learning Virtual

Lindsey Wright, a doctoral student in piano performance at the U, is making learning the piano easy and affordable for elementary school students in Utah. Wright observed that Utah schools were cutting the funding for music programs. In response, Wright created U-Play Piano, an online computer-based piano curriculum that is much more affordable and engaging to kids.

“It pains me to think of a world without music education,” Wright said.

By using electronic keyboards and this online piano curriculum, U-Play Piano has alleviated the financial strain that hiring a personal piano teacher can have on parents and school districts.

“The real excitement for me is seeing how an art form that has been around for hundreds of years can change in such a dramatic fashion,” said Jared Pierce, the composer for the U-Play Piano program and another doctoral student in piano performance.

The beta version of U-Play Piano has been implemented in three Title I schools in Utah, and it has already seen results. Not only are the kids involved in the program making great strides in learning to play piano, but they have also been documented having improved test scores and increased school attendance.

#15

Play it by ear.
Get inspired
by music. And
stick with what
WORKS.

FIND YOUR RHYTHM



Courtney Doyle helped start a mentor program for FIRST LEGO League teams in Utah.

Students Launch LEGO Mentor Program

Derek Jewell, a biomedical engineering major at the U, and Courtney Doyle, a Ph.D. student in mechanical engineering, are proving that LEGOs are for people of any age. They joined forces with the Lassonde Entrepreneur Institute, Utah's operational partner for FIRST LEGO League, to start a mentor program. FIRST LEGO League teams consist of kids ages 9-14 who work together for four months to build robots that can maneuver through obstacles during a competition. While all of the teams have the interest and drive, not all have a coach with engineering knowledge. This is where the two Utah students jumped in and created the mentor program, recruiting 14 mentors in their first year. "I feed off the energy of these kids, and they inspire me to be a better engineer," Doyle said.



PLAY WITH LEGOS

Don't take yourself too seriously. Have fun, and let loose. Dust off your LEGOs.



RUN FOR OFFICE

Go the extra mile. You can do something new in any field with hard work and determination.

Helping Women Enter Politics

While some students are struggling to keep up their grades and social life, Kendahl Melvin is a track and field star, full-time student, Associated Students senior class president, and a major advocate for women in politics. A major in political science and international studies, Melvin has seen that while half of the Utah population is women, not enough women serve in state government. After working in the Hinckley Institute for several years and doing an international internship with the European parliament, Melvin created the first university partnership with Real Women Run to encourage more women to enter politics.



"If you are civically engaged as a student, it's likely to become a lifelong habit," said Kendahl Melvin, a student-athlete who is helping women get involved with politics.

Research Projects at the U Have Potential for Global Impact.

Being a top-level research institution, the University of Utah has countless ways for students to get involved with research. Some work on faculty projects; others venture out on their own. Here are some of the students making an impact with their research.

Beau Freckleton developed landing gear that mimics birds.



Perching Helicopters

Small helicopters propelled by four rotors are used to collect data for agriculture and military uses. But they lack the battery power for continuous flight. Beau Freckleton, a student majoring in mechanical engineering, has been working on that problem for almost three years. He is creating a way helicopters can perch like birds, so they can recharge using solar energy and complete data collection in less time. Freckleton used a 3-D printer to create prototypes for the helicopter. He created landing gear that is light enough for the helicopter to carry and sturdy enough to support the weight.

Distraction-Free Driving

Are certain tasks more distracting than others while driving? For three years, James Coleman, a graduate student in psychology, has been working with professor David Strayer to identify types of distracted driving. Measuring physiological and subjective levels, Coleman created a rating scale. He is currently using his results to meet with advocacy groups who have lost family and friends due to distracted driving and hopes to continue promoting distraction-free driving.



Driving simulation technology helps researchers study safety.



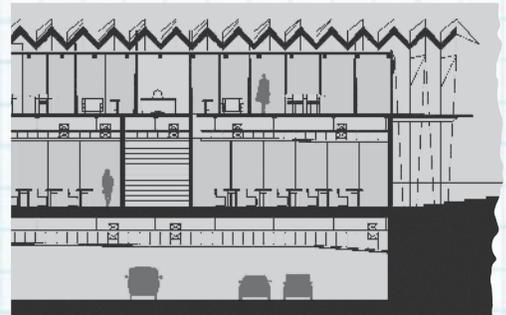
Aude Peden is a post-doctoral fellow who discovered a new way to kill parasites.

Parasite Killer

What began as a basic science research project for Aude Peden evolved to a much more complex study to help people. Peden, a post-doctoral fellow with the department of biology, came to the U to identify new genes that regulate the nervous system using genetic screens and small roundworms as a model system. Peden's project revealed a natural byproduct that kills parasitic worms in sheep. Peden's background is part of what drives her. She grew up in the western African nation of Gabon, where nematode worms affect everything from livestock to people.

Weaving History into Building Design

When a class project asked students to design a library in Arizona, Caitlin Thissen, a recent architecture graduate, wanted to not only design a usable library but one that embraced the community's traditions. Thissen used the traditions of the Hohokam tribe, who settled in northern Arizona, as a precedent for developing a building system and program for the library. She intertwined the history and traditional design into the contemporary design. "It's important to consider materials and their meaning as it evolves over time in relationship to location and their use in design and construction," Thissen said.



A library design by architecture alum Caitlin Thissen.



Ph.D. candidate Anne Schaeffer (left) works on a pressure chamber for measuring multiple properties of materials under extreme conditions, like pressure, volume and temperature.

Testing Materials in Extreme Conditions

When Anne Schaeffer, a Ph.D. candidate in physics, wanted to study the properties of materials, specifically superconductors, under extreme conditions, she realized that she wouldn't know the true effects unless they were tested concurrently. Her solution: create a method herself. With grant support, she created a pressure chamber that tested two different samples of a superconductor simultaneously. Comparing the samples allows scientists to spot the smallest differences among materials. Her new method has inspired her to continue studying the effects on lithium and how they change at low temperatures and high pressure.

#18

RESEARCH WITH PURPOSE

Get into the lab, dive into a heavy research project, and do it for a reason.



#19

GO TO JAIL

Inspiration can strike in the most unlikely places. (No, you should not really go to jail.)

Lynn Unger in the Salt Lake County jail.

CRIMINAL JUSTICE

Social Work Students Take on Criminal Mental Health

According to the U.S. Bureau of Justice Statistics, 64 percent of inmates showed symptoms of a mental health disorder in 2006. Upon release, many of these men and women were left without medication, food, housing and support.

University of Utah master of social work graduates Rebecca Brown and Lynn Unger are using their experience in the U's forensic social work program to provide hope and support for these men and women.

"It is really sad when you see someone who is mentally ill go into a store and take a bag of chips and just wait to get arrested without even opening the bag," said Unger, who is now employed by Salt Lake County. "It's because they know they get medication in jail, they

get three meals a day, and they have a roof over their head."

In August 2012, Brown founded the Alternatives to Incarceration (ATI) Transportation program to combat this cycle of recidivism by linking recently released mentally ill prisoners with the resources they need to begin building a new life.

ATI Transportation provides mentally ill clients with a ride from the jail to mental-health resources — a simple concept that has yielded big results. This past year ATI Transportation provided 232 clients with rides to mental health resources, 89 percent of which attached to services within 30 days.

The program required a considerable amount of vision and dedication on the

part of Brown and Unger — work that included rewriting a judicial order and creating a new position to bridge the gap between legal and mental health services.

"We are able to pick up their medications immediately, get them to the pharmacy on site, and, if they need it, start assisting them with case management or housing," said Brown, program founder and director of Adult Services for Valley Behavioral Health. "It's an immediate link and access to services, which in the past has been something that is difficult and becomes more difficult the longer a client is off their medications and back on the street."



[FILL IN BLANK]

Create your own innovative experience. Here are some U programs to get started.

Did we miss something in the listing below? Contact us at 801-587-3836 or lassonde@utah.edu to be included in the next edition.

PROGRAM DIRECTORY

ARTSBRIDGE: An interdisciplinary arts education outreach program www.artsbridge.utah.edu.

ARTSFORCE: A two-day conference for art students to learn about how to get prepared for professional work www.artsforceutah.com.

BENCH-2-BEDSIDE: A competitive opportunity for medical, engineering and business students to collaborate to develop or improve a medical device cmi.uofuhealthsciences.org.

BIODESIGN: Teams of engineering students work with clinicians to develop prototypes and test medical devices www.biodesign.utah.edu.

BIOINNOVATE: Graduate program providing a comprehensive biomedical, device-design training program www.bioinnovate.utah.edu.

BIOWORLD: A two-semester course enabling students to develop a business plan for a medical-device venture in a developing country www.bioworld.utah.edu.

BUSINESS SCHOLARS: An experiential-learning program for high-achieving students offered by the David Eccles School of Business <http://bit.ly/1eJCjff>.

DESIGNBUILDBLUFF: A year-long program for graduate students in architecture who design and build homes in southern Utah www.designbuildbluff.org.

ENTERTAINMENT ARTS & ENGINEERING: Interdisciplinary program where students design and develop video games www.eae.utah.edu.

ENTREPRENEUR CERTIFICATE: The David Eccles School of Business offers an undergraduate Interdisciplinary Certificate in Entrepreneurship www.business.utah.edu.

ENTREPRENEUR CLUB: A student-run organization that provides programs and networking opportunities for students interested in entrepreneurship www.uofueclub.com.

FOUNDRY UTAH: An experience-based educational community where entrepreneurs can start acting on their business ideas and access resources to help them along the way www.foundry.utah.edu.

GAMES4HEALTH: Develop a health-related video game or app, design the business model and outline the clinical trial strategy, and compete for prize money g4h.business.utah.edu.

GET SEEDED: Pitch your business idea to the student Entrepreneur Club to receive seed funding for your new venture www.uofueclub.com.

GLOBAL HEALTH INITIATIVE: Promotes health and medical development leading to measurable improvements www.globalhealth.utah.edu.

GLOBAL HEALTH SCHOLARS: Students get exposed to a variety of perspectives on global health practices <http://bit.ly/ZptZ6O>.

PROGRAM DIRECTORY (CONT.)

- HINCKLEY INTERNSHIP PROGRAMS:** Internship opportunities are available to students interested in politics www.hinckley.utah.edu.
- HONORS PRAXIS:** Students work together to find original solutions to problems our society faces, while a faculty mentor guides the work of each group www.honors.utah.edu.
- INNOVATION SCHOLAR:** Students learn how to solve problems that inspire them by engaging in interesting classes, volunteering, personal passions and more www.innovation.utah.edu.
- INTERNATIONAL EXCHANGE/STUDY ABROAD:** Students participate in hundreds of programs all over the world based on their interests and career goals www.learningabroad.utah.edu.
- INTERNATIONAL LEADERSHIP ACADEMY:** Students examine global leadership in business, government and non-profit organizations. Community mentors assigned email lehman@poli-sci.utah.edu.
- JAMES LEE SORENSON GLOBAL IMPACT INVESTING CENTER:** Provides in-depth experience tackling global issues by investing into innovative startups dedicated to solving social and environmental problems www.sgicenter.com.
- LASSONDE NEW VENTURE DEVELOPMENT:** Graduate students are paired with a faculty inventor and spend a year preparing a business plan www.lassonde.utah.edu.
- LASSONDE SOCIAL ENTREPRENEUR PROGRAM:** Put your business skills to work solving critical social issues, and travel the world www.lassonde.utah.edu.
- LEGAL SCHOLARS:** Students interested in law school learn about current legal issues and how to prepare for law school <http://bit.ly/W8pCXp>.
- MY UNIVERSITY RESEARCH EXPERIENCE (MURE):** Find research opportunities offered by faculty from different departments across campus mure.utah.edu/opportunities.
- MY U SIGNATURE EXPERIENCE (MUSE):** A database of research, leadership, community engagement, scholarships and internship opportunities across campus www.muse.utah.edu.
- NUTRITION LABORATORIES:** Lab experience in areas including nutrition biochemistry, experimental foods and nutrition physical assessment www.health.utah.edu/nutrition/laboratories.
- OPPORTUNITY QUEST:** A business plan competition for students across the state, addressing the executive summary stage of business development www.ues.utah.edu/oq.
- ROBOUTES:** Students interested in robotics participate in competitions www.robotutes.utah.edu.
- SOERNSON CENTER FOR DISCOVERY AND INNOVATION:** Helps unleash the creative genius within the U and the community to innovate the way we live, work and play <http://bit.ly/1m2mDxQ>.
- SPARK:** An online community all about ideas - inspiring students to collect, sort and finally implement them www.spark.utah.edu.
- SUSTAINABILITY SCHOLARS:** Students work across disciplines to research, imagine, create and implement strategies that will positively affect sustainability practices at the U www.honors.utah.edu.
- SUSTAINABLE CAMPUS INITIATIVE FUND PROGRAM (SCIF):** Innovative and motivated students are awarded grants to team up with a faculty or staff member to bring about sustainable changes to the campus <http://bit.ly/1gCf9QG>.
- TECHTITANS:** Students receive instruction in the idea-to-development process and compete with their peers for the best idea www.ues.utah.edu/techtitans.
- UNDERGRADUATE RESEARCH OPPORTUNITIES PROGRAM (UROP):** Students are paired with faculty members and work closely with them in research experiences www.urop.utah.edu.
- UNIVERSITY VENTURE FUND:** Students work with entrepreneurs and investors to learn about investments and see how successful companies are managed www.uventurefund.com.
- UTAH ENTREPRENEUR CHALLENGE:** One of the largest business plan competitions in the nation. Students across Utah develop full, comprehensive business plans www.ues.utah.edu/uec.
- UTAH FIRST LEGO LEAGUE:** Kids solve real-world challenges by building LEGO-based robots to complete tasks on a thematic playing surface. Many volunteer opportunities available www.utfl.utah.edu.
- UTAH REAL ESTATE CHALLENGE:** Real estate development competition for undergraduate and graduate students throughout Utah <http://bit.ly/1mDzDOi>.
- UTE WEATHER CENTER:** An experiential learning opportunity for students interested in atmospheric sciences www.atmos.utah.edu/ute-weather.

Go Utes!



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