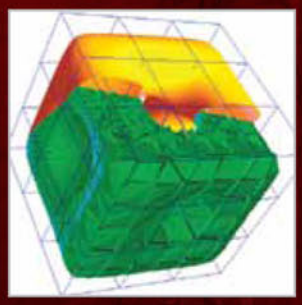
TECHNOLOGY
VENTURE DEVELOPMENT
THE UNIVERSITY OF UTAH

ANNUAL REPORT

2012



TECHNOLOGY VENTURE DEVELOPMENT
THE UNIVERSITY OF UTAH

ANNUAL REPORT CONTENTS

RESEARCH TOUCHES LIVES THROUGH THE COMMERCIALIZATION PROCESS, AND THE U HAS BEEN VERY FORTUNATE TO HAVE ENJOYED MUCH SUCCESS IN THIS AREA."

— David Pershing, University of Utah president

David Pershing

WELCOME

INNOVATION AND IMPACT AT THE U

University of Utah distinguished by applied research and student involvement

The University of Utah is a national leader in research and innovation, and we are very proud of this accomplishment. We have faculty members and students who are advancing our understanding of everything from quantum nanocrystals to modern dance. The impact of this research is immense, but one of the most impressive is how it can help improve people's lives through real-world applications.

Research touches lives through the commercialization process, and the U has been very fortunate to have enjoyed much success in this area. We have developed a culture and environment that supports students and faculty who not only want to invent something new, but who also want to find ways to launch their invention into the marketplace.

You don't need to look far to find positive indications of the U's commercial success. Faculty and researchers have started more than 220 companies since 1970, they disclose roughly 200 new inventions and ideas every year, and they secure dozens of U.S. patents annually. In turn, this activity has helped make Utah one of the leading states in the nation at technological innovation and economic development.

What makes these accomplishments even more impressive is how students are involved every step along the way. This involvement provides our students with in-depth experiences that have a demonstrated impact on our commercialization efforts and give them a head-start in the job market. I believe there are very few universities in the country that provide the same type of opportunities which help make the University of Utah a special place to work and study.

ABOUT THE ANNUAL REPORT

Welcome to the annual report for Technology Venture Development at the University of Utah. We produce this publication to celebrate our partners and highlight our progress during the previous year. Inside are feature articles about leading researchers, students and startups. Also inside are data and tables showing our reach and impact. **Learn more at www.techventures.utah.edu.**

BY THE NUMBERS

$393M

TOTAL RESEARCH FUNDS AWARDED FY 2012

200

FACULTY INVENTORS FY 2012
115 repeat, 85 new inventors

275

INTELLECTUAL PROPERTY DISCLOSURES FY 2012

3,790

STUDENTS INVOLVED IN COMMERCIALIZATION AND INNOVATION FY 2012

80

TECHNOLOGY LICENSES EXECUTED FY 2012

ABOUT TECH VENTURES

Technology Venture Development was created in 2005 to support commercialization across campus. We provide many diverse programs and activities to help strengthen Utah's economy, manage intellectual property on campus, engage our colleagues, and provide entrepreneur and innovation education, while supporting and facilitating industry partnerships and outreach.

The U has spun off more than 140 startups since 2005. While these companies vary in their stages of development, many have already had a positive impact or hold great promise for the future.

Faculty involvement is essential to every stage of commercialization. Without the tremendous faculty at the U, the campus would not have the technologies to start new companies or attract corporate interest. Our role is to support innovative faculty members who develop new products or processes by protecting their inventions, locating corporate partners, finding funding and helping them start a company.

We provide some of the most innovative student programs anywhere. The Pierre Lassonde Entrepreneur Center leads the effort with unique business and entrepreneur programs, including the Utah Entrepreneur Challenge and the Lassonde New Venture Development program.

We are also working to build a broad community of innovators on campus through our Innovation Scholar program. Meanwhile, through our youth outreach program, FIRST LEGO League, we provide the opportunity for children throughout Utah to demonstrate their innovation and problem-solving abilities.

Learn more at www.techventures.utah.edu.

COMMERCIALIZATION SUCCESS. *The U ranks high on several measures in the national AUTM survey. Pictured is the Park Building, the U's administrative headquarters.*

ANNUAL SURVEY

A NATIONAL LEADER

U commercialization efforts ranked among the nation's best

The University of Utah is No. 1 in the nation at starting companies based on university research for the second year in a row, and it is strong on several related measures, according to an annual survey by the Association of University Technology Managers (AUTM). The survey ranks U.S. universities and institutions on commercialization success, which includes startup formation, invention disclosures, patents and technology licenses.

The newest survey measures fiscal year 2010. The U had 18 startups from July 1, 2009 to June 30, 2010, while MIT was second with 17 new companies. Other top schools included Brigham Young University with 13, Columbia and Cornell with 12, and Johns Hopkins and Purdue with 11 each, while Cal Tech, Carnegie Mellon University and the University of Michigan all had 10.

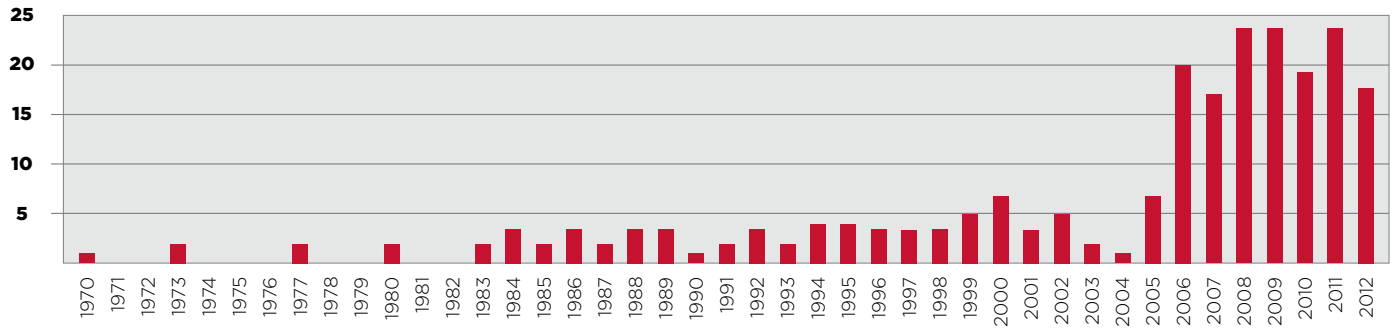
Since the U launched its first startup, TerraTek, in 1970 it has followed up with 220 other startups based on research. Many of these were founded in the past seven years, after the U restructured its commercialization efforts. According to a study by the university's Bureau of Economic and Business Research, U startups directly or indirectly accounted for 16,617 jobs, $777.9 million in personal income and $95.3 million in state tax revenue in fiscal year 2011.

The 2010 AUTM survey reports information collected from 183 institutions across the U.S — 155 universities, 27 hospitals and research institutions, and one third-party management company. Those institutions created 651 startup companies, or an average of four startups per institution.

Beyond startups, the U performed well on other measures in the survey, recording 208 invention disclosures (compared to a national average of 113), 41 U.S. patents (compared to a national average of 24) and 287 active technology licenses (compared to a national average of 210).

Learn more at www.autm.net.

U STARTUPS OVER TIME



FIRST IN UTAH FOR PATENT GENERATION

THE U'S IMPACT ON THE ECONOMY WAS RECOGNIZED AT THE 2012 UTAH GENIUS AWARDS, WHERE IT WON AN AWARD FOR MOST U.S. PATENTS OF ANY UTAH COMPANY (49) AND STEPHEN JACOBSEN, DISTINGUISHED PROFESSOR OF MECHANICAL ENGINEERING, WON THE LIFETIME ACHIEVEMENT AWARD.

The Utah Genius Awards is the state's prime program for recognizing creative people and companies that contribute to Utah's growth by securing patents and trademarks.

While patents offer protection for products and processes, they also encourage investments into, and the development of, new ideas — leading to the creation of new jobs and economic growth.

Most of the patents the U received were for new medical devices and medical processes that improve diagnosing and treating health problems. Investments into these technologies not only create potential to make money, but also to save lives.

Learn more at www.utahgenius.com.

49 U PATENTS ISSUED IN U.S. IN 2011

IN THE NEWS

"The U's tech startups not only create jobs in the Utah economy, but good jobs. For example, the average Utah employee earns about $38,000 per year ... while the average technology venture job produces a $60,000 annual salary. Not only do the jobs pay well, they last."

— The Deseret News

"The success of the (U) in nurturing startups is also beginning to make entrepreneurship one of Utah's key exports as delegations from more pedigreed institutions and state and foreign economic development boards descend on Salt Lake City to suss out the (U's) secret startup sauce."

— Business News Daily

"Salt Lake City is gaining national recognition for its achievements in the tech industry. Forbes has rated Utah's capital city fifth in the country for high-tech growth based on long- and short-term job numbers."

— KCPW

"Relatively low operating costs, a low corporate tax rate, above-average employment, a growing population and a burgeoning tech sector led Forbes to label Utah the 'Best State for Business and Careers' in the magazine's annual 2010 and 2011 surveys."

— Fast Company

"The (U) spun off 18 startup companies between July 2009 and June 2010, ahead of schools such as MIT, Johns Hopkins and Purdue. What's impressive about the (U's) accomplishment is that it outpaced even MIT, doing so with one-third of the budget."

— GeekWire.com

STARTUPS LAUNCHED SINCE 1970

THE U HAS BEEN SUCCESSFUL AT CREATING STARTUP COMPANIES — ESPECIALLY IN RECENT YEARS. BELOW ARE STARTUPS BY FISCAL YEAR, WITH NOTATIONS FOR SUPPORT AND STATUS.

2012

Add-it C
Creative Medical Technologies
DecipherGenX C
Falgatter Technologies
iBiologics
Lazarus Medical C
Lone Star Thiotherapies
MultiFunctional Imaging
Navillum Nanotechnologies
L T C
Pecten Technologies
PRONTO International
Salarius Pharmaceuticals C
Utah Medical Solutions
Vaporsens L U C
Veristride L S
Visus L
Voyant Biotherapeutics

2011

AvanSci Bio V S
Axon Optics T
Beijing Great Sun Biotech
CB Bioenergy G
Cell Reader
CoNextions
Domain Surgical T V M G
e-Sens G
Espira
Elute L T C
1st Carnegie Mellon UEC Top 10, 2nd OQ
Granite Mountain Technologies T C
HOT Water Global L B G
UEC Top 10, 1st OQ 2007
Innoception Technologies
InsuGen C
Knudra C
MacCure
Inoperable
Perfect Vision
Seismic Option Safety (SOS) Systems C B
TransViragen
Telome Health
US Bioremediation C M
Xandem L C G
UEC Top 10, 1st OQ 2010
Xend

2010

7Revolutions B G
Brickell Biotech
Credibility Assessment Technologies (CAT)
L C B G
UEC Top 10
F2 Solutions
Fay Financial Engineering Center (FFEC) V
G6 T
iVeena T C V G
Kayak Biosciences S B G
KickStart
Predictive Medical
RedSpan B G
Inoperable
Scintalla B G
Sfida Biologic B G
Short Solutions L B
1st UEC 2010
Salt Lake Biosciences S
Seasonal Energy L
1st Place OQ 2009, UEC 2009 Top Ten
Solan T G
Veritract L C V B G
UEC Runner-up, 3rd OQ 2009
Versalion Pharmaceuticals

2009

Blackrock Microsystems G
Branching Tree
Headwaters Clean Carbon Services L U B
Joint venture with Headwaters, Inc. in 2009
UEC 2008 Top 10
Inoperable
Energence Partners B
Inoperable
Ergonomic Tool Development B
H20 Tech V B
Inoperable
HiFunda B
Honde (Wuxi project)
Integratech L S B
JSK Therapeutics C S
Keys 2 Safe Driving
Marrek B G
Metallosensors U C V S B
Miracotech
Inoperable
Nanomedic B
Optema S
Inoperable
Purple Energy B
RNA Biosciences
Inoperable
Sci-U
Sera Prognostics C
TheraRenal
TheraTarget U S
Waste Water Compliance Systems C V B

2008

Advanced Signal Detection C T
Inoperable
Akadi, LLC L C B
2008 UEC Top 10
Allegro Diagnostics
Baby Jock L
Inoperable
BioEnergenix
Catheter Connections M B
Celux Technologies
Inoperable
Epitel, Inc. T S
Geo Mind, LLC V
Inoperable
GlycoMira L C V M
HeavyStone Labs T C S
I2S
Nanonc, Inc. T
Inoperable
Nano-Oxides T C V S
PFO Technologies, LLC
Acquired by Coherex
Philotek, LLC T C V
Inoperable
Riggalya
Inoperable
RU Ready L C
2008 UEC Top 10, 2nd OQ
Surfagen, Inc. B
Trapeze Software L B
UEC Top 10
ViroPan L C M
1st UEC 2008
VisTrails, LLC C V S
Wasatch Nanopore Sensors, LLC T C
Inoperable

2007

Angry Duck Productions L B
Merged with Polevault Media
BioFuels Development Corp
Boulder Technology Development Labs
Inoperable
Central Logic
Cerebus Clean Carbon Solutions L
ContraDyn, Inc. C
ImageTeck C
Larada, Inc. L T C S
UEC Top 10
LV Partners L
Merged with Lineagen
Navigen C V S
nFocus T V
Inoperable
Osteoseek, Inc.
PowerMems
Rescue Medical Systems, Inc.
L S B
UEC and OQ Runner-up 2006
SORT/RayScale C V
Acquired by nVidia
Thermimage L C
UEC Top 10 2006
UGEN
Renamed Bioclassifier, LLC

2006

AlloCure
Carbylan Biosurgery L C

Exeven V
Inoperable
Fuels Development Group
Inoperable
Glycosan Biosystems L C V
Acquired by BioTime
Heightened Technologies L
1st OQ 2007
Inoperable
Intan Technologies, LLC
Intellivis
Inoperable
LifeScan
Inoperable
Live Wire Test Laboratories
C S
Neuroadjuvants C V
Respiris L
Merged with Lineagen
SentrX Animal Care L T
Sigma TechnoImaging
Inoperable
Vestan V S
Visual Share, LLC L C S
Wasatch Microfluidics, Inc.
L T V S
1st UEC 2005
Xapio L T V
Inoperable
Zicthus
Inoperable

2005

echo TEACH, Inc. (NAPE)
Lineagen L
Globalmatics, Inc.
Inoperable
Goldfinger
Inoperable
Milcin Therapeutics
N-ERGY, LLC
Inoperable
Sentrx Surgical, Inc. L C V S
Acquired by Carbylan

2004

Coherex

2003

Applied Medical Visualizations
C V S
Q Therapeutics

2002

Amirsys
Hydra Biosciences
Versa Power Systems
Visual Influence L
Acquired by Numira
Wyoming Research Innovations
Inoperable

2001

Sensicore
Tramontane, Inc.
Universe Partners

2000

Aciont C
Allvivo Vascular
Attensity Corporation
Acquired
Salus Therapeutics (Genta)
Inoperable
NuSkin/Pharmanex
ParSiTech
Sonic Innovations

1999

Fiore Automation
MedQuest Products
Acquired by WorldHeart
Mineral Technologies
TheraDoc
ThermaCom

1998

Echelon Biosciences, Inc. C
Acquired by Frontier Scientific
Spectrotek
Zars
Acquired by Nuvo Research

1997

Cyberkinetics
Acquired by Blackrock Microsystems
Manticore Pharmaceuticals
Acquired by Inflabloc
Signature Immunologics
Inoperable

1996

Cimarron Software
Acquired
Rosetta Inpharmatics
Acquired by Merck
Viewpoint Manufacturing

1995

Diacor
ErgoWeb
Inoperable
Handtronix Corporation
Inoperable
Process Instruments

1994

BioCentrx
Inoperable
Cognetix
Inoperable
ENECO, Inc.
Innovative Caregiving Resources

1993

HerediLab
PartNet

1992

Cardiowest Technologies
Inflabloc
Inoperable
Myriad Genetics

1991

Femtoscan
Inoperable
Idaho Technology

1990

MicroMath
Inoperable

1989

MacroMed
Acquired by Protherics
Parvus Corporation
Acquired
Watson Pharmaceuticals

1988

Darbick Instructional Software
Inoperable
J. Bunger & Associates
Tepnel Lifecodes Com.

1987

A.D.A.M.
Inoperable
E&S
Acquired by Rockwell Collins

1986

Anesta
Acquired by Cephalon
DataChem Lab, Inc.
NPS Pharmaceuticals

1985

Rocky Mountain Research
Inoperable
Techniscan Medical Systems

1984

ARUP
EGS
Medtronic Gastro/Uro

1983

Datex-Ohmeda
Sarcos
Acquired by Raytheon

1980

Bunnel
Ceramatec
Acquired by Coors Brewing Company

1977

Iomed
Acquired by Private Group
Postnova Analytics

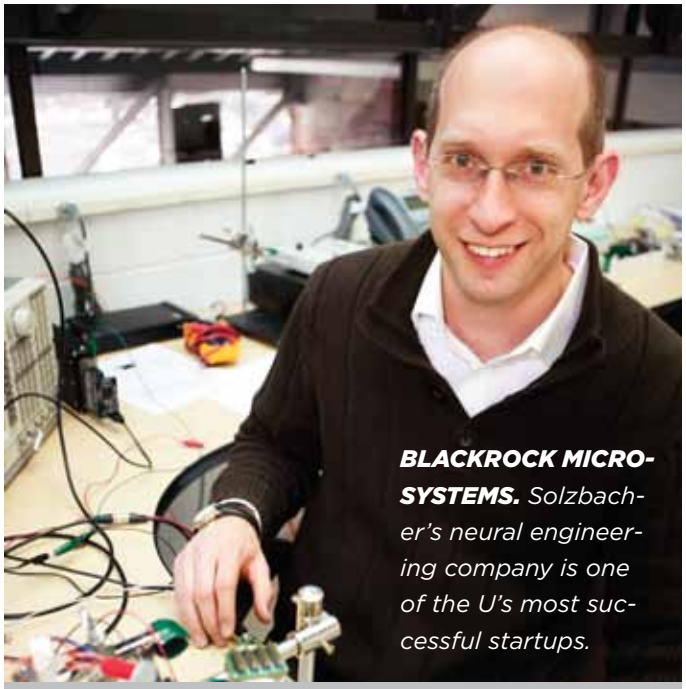
1973

Advanced Composite Materials
Metals Manufacturing

1970

TerraTek
Acquired by Schlumberger

L Lassonde New Venture Development
T Technology Commercialization Project
U USTAR Company
C Technology Commercialization and Innovation Program/Center of Excellence
V Virtual Incubator Project Grant
S SBIR/STTR Grant Support
M Micro Grant
B Venture Bench
G Technology Commercialization Grant



BLACKROCK MICROSYSTEMS. *Solzbacher's neural engineering company is one of the U's most successful startups.*

FLORIAN SOLZBACHER

As founder of Blackrock Microsystems, a company that enables researchers to make advancements in neural engineering and prosthetics, Florian Solzbacher knows firsthand the power of innovation and the worldwide impact it can have.

"We are now in the fortunate position of reaching thousands of labs and clinics worldwide and are enabling advanced research and new clinical approaches in the research and treatment of neurological disorders, prosthetics, etc.," Solzbacher said of his company.

Solzbacher, a professor in the Electrical and Computer Engineering Department, is one recipient of the U's annual Distinguished Innovation and Impact Award (DIIA).

In 2004, Solzbacher began his work at the U with a vision to enable personalized health care and to begin a revolution in how health care and pharmacology research is being conducted. He devoted his efforts to improving Utah Electrode Array technologies, which were invented by Richard Normann and are recognized as the leading approach for selective communication with hundreds of individual neurons in the central and peripheral nervous systems. Through his work, Solzbacher has helped the U acquire over $15 million in research grants and successfully enhanced the electrode arrays — allowing them to become the industry standard and to be used in laboratories all around the world.

Along with his 26 invention disclosures that have led to 20 patents, Solzbacher has published five book chapters and over 190 journal and conference publications while at the U. In addition, his interest in applying his technologies to clinical problems has spurred the creation of two additional companies devoted to finding new approaches to helping patients with nervous system disorders (blindness, deafness, incontinence, Parkinson's disease, chronic pain, depression, epilepsy, etc.).

HONORS & AWARDS

FACULTY INNOVATORS HONORED

Entrepreneurial Faculty earn Distinguished Innovation & Impact Award

The University of Utah has gained a reputation as one of the best places for faculty entrepreneurship. The U recruits researchers from around the world who are interested in translating their research from the laboratory into the commercial sector, and it fosters an environment where faculty entrepreneurs can thrive. The U also recognizes these activities alongside excellence in research and teaching through the new Distinguished Innovation and Impact Award (DIIA).

The DIIA is an annual award presented at graduation. It is now in its second year. Those recognized for 2011-2012 were professors Florian Solzbacher, Stephen Jacobsen and Ellen Bromberg (see related profiles for more information). Each of them embody the U's entrepreneurial spirit and the drive to invent new products and services that benefit others.

Those who earn the DIIA are first nominated by a colleague in the fall. Organizers then collect letters of recommendation and other detailed information for the selection process. When those materials are ready, the selection committee chooses the winners based on the novelty of their innovations as well as the depth and breadth of their impact on the public.

Learn more at bit.ly/ICAckg.

JOIN THE ENTREPRENEURIAL SCHOLARS

Faculty interested in innovation and entrepreneurship have access to one of the largest faculty organizations at the U — the Entrepreneurial Faculty Scholars (EFS). Open to faculty from every college and discipline at the U, EFS members meet regularly to network and learn how to protect, fund and commercialize their research ideas. **Learn more at www.techventures.utah.edu/efs.**

SUPER HUMAN. *Stephen Jacobsen is the mastermind behind the development of waving fountains, artificial limbs and robots that make imagination come to life.*

STEPHEN JACOBSEN

Before Stephen Jacobsen, a distinguished professor in the Department of Mechanical Engineering and president of the Sarcos team, there were no waving fountains at the Bellagio in Las Vegas, no believable robots at rides in Disneyland and Universal Studios, and no "Iron Man" movie.

The leader behind the robots that make imagination come to life, Jacobsen can claim over 200 patents. Furthermore, Jacobsen and his team's inventions extend well beyond the entertainment industry. From the bioengineering of artificial limbs and organs to strategic defense, Jacobsen has proven himself to be a prolific engineer, inventor and innovator.

Jacobsen, who earned one of the U's annual Distinguished Innovation and Impact Awards, is well accustomed to receiving honors in recognition of his innovative work. Recently, he was presented with a Most Prolific Inventor Award by the U's Technology Commercialization Office. He was also the recipient of the Utah Genius Lifetime Achievement Award.

When not inventing, Jacobsen is commercializing. He founded the Center for Engineering Design at the U, along with multiple companies — Motion Control, Iomed, Sarcos (now Raytheon-Sarcos), Micro-Drugs, I-Port, Micro Ject, Precision Vascular, Intelligent Microinfusion, Sarcos Microsystems, and Sterling Research — all of which employ over 200 Utahns.

ELLEN BROMBERG

Dancing on a stage of her own design, Ellen Bromberg has redefined what it means to make an impact on the world. As one recipient of the U's annual Distinguished Innovation and Impact Awards (DIIA), Bromberg has demonstrated the importance of fine arts as a career and proven that modern dance, and the way it is experienced, can change lives.

"As someone who has been working in the arts for many years and in many different contexts, I have been privileged to both witness and experience how transformative aesthetic experiences can be. Their impact can change lives, deepen understanding, challenge perceptions and assumptions, and illuminate our humanity," Bromberg said.

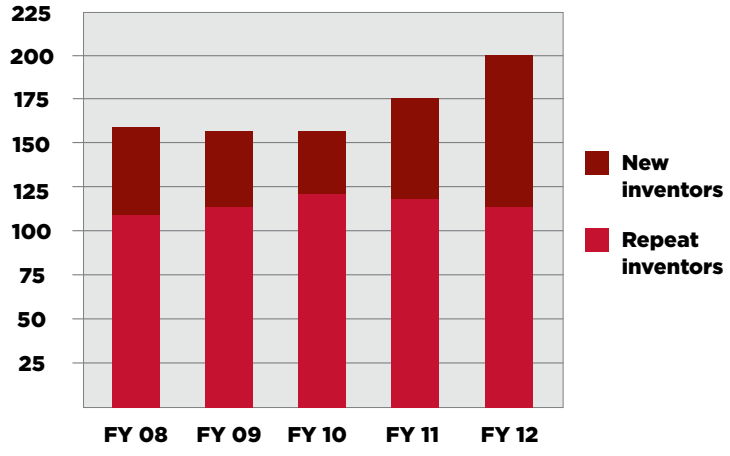
The DIIA Bromberg received is one of her more recent honors on a growing list of accomplishments. As inventor of a multimedia performance laboratory, Bromberg has created a space where faculty and students can use their creativity and unique resources to research and produce meaningful visual experiences for people watching dance on a screen or on multiple screens integrated into live performance. Bromberg received a Guggenheim Fellowship Award in 2006 for her exceptional capacity for productive scholarship and exceptional creative ability in the arts.

ON AND OFF THE SCREEN. *Bromberg's multimedia performance laboratory and unique explorations of dance have earned her international recognition.*

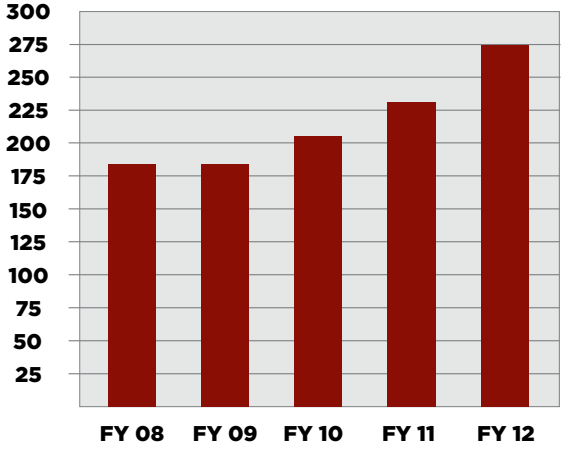
Outside the U, Bromberg is internationally renowned for her unique explorations of dance and is seen as a leader in screendance and other forms of dance on screen. Her work has also been nationally broadcast on PBS and shown around the globe.

INVENTORS & DISCLOSURES

New and repeat inventors



Intellectual property disclosures



U DEPARTMENTS SERVED FY 2012

Department	Faculty Outreach	CSR[1]	Invention Disclosures [2]	MTAs/CDAs [3]	Educational Program Engagement
School of Business			4	6	×
College of Engineering	×		1	6	
Bioengineering	×	×	30	17	×
Chemical Engineering	×	×	16	3	×
Civil and Environmental Engineering		×	4	6	×
School of Computing	×	×	3	27	×
Electrical and Computer Engineering	×	×	23	16	×
Material Science and Engineering	×	×	11	7	×
Mechanical Engineering	×	×	13	30	×
College of Fine Arts	×		2		×
College of Humanities	×				
College of Law	×		1		×
College of Mines and Earth Science	×				
Atmospheric Sciences		×	2	6	×
Geology and Geophysics	×	×			
Metallurgical Engineering	×	×	10	25	
Meteorology					
Mining Engineering	×	×			
College of Science	×				
Biology	×	×	12	2	
Chemistry	×	×	8	12	×
Mathematics			4	2	
Physics	×	×	3	1	
College of Social and Behavioral Science			3	1	
College of Architecture and Planning	×	×			
College of Education	×				
College of Social Work					
Scientific Computing and Imaging Institute	×	×	13	6	×
Nano Institute	×	×			
Marriott Library	×				
Sr. VP Health Sciences	×				
Anesthesiology	×	×	6	15	×
ARUP	×	×	8	3	×
Biochemistry	×	×	3	1	
Biomedical Informatics	×	×	4		
CVRTI	×		1		×
College of Health	×	×	2	1	×
College of Nursing	×	×	2		
College of Pharmacy	×	×	28	21	×
Dermatology	×	×	4		
Family and Preventive Medicine					
Huntsman Cancer Institute	×	×	5	18	×
Human Genetics	×	×	8	262	×
Internal Medicine	×	×	34	45	×
Molecular Medicine	×		5		
Moran Eye Center	×	×			
Neurobiology and Anatomy	×		4	2	×
Neurology	×		2	5	×
Neurosurgery	×	×		2	×
Obstetrics and Gynecology	×	×	4		
Oncological Sciences	×	×	2	1	
Pathology	×	×	14	24	
Pediatrics	×	×	15	30	×
Psychiatry	×	×	5	1	×
Physical Medicine and Rehabilitation		×	1		
Physiology	×		3		
Radiation Oncology	×				
Radiology	×	×	13	6	×
Orthopedic Surgery	×	×	6	1	×
Ophthalmology	×	×	8	12	×
School of Medicine	×	×	11	5	
Surgery	×	×	28	23	
VP Research	×			3	
VP Admin	×				
Chief Information Office					
VP Technology Venture Development	×		1		×

NOTES:

1. CSR is an abbreviation for commercial sponsored research.
2. One disclosure counted for each department. When multiple departments are involved in a disclosure, the count is included for each department.
3. MTA is an abbreviation for material transfer agreement. CDA is an abbreviation for confidentiality disclosure agreement.

DEPARTMENTS SERVED: 94%

FACULTY ON COMMERCIALIZATION

"One important measure of our research impact is through the research papers we publish. Another important measure of our research impact is when our ideas and research are used in commercial applications."

— Chris Johnson, Scientific Computing and Imaging Institute

"Taking our research from discovery through commercialization allows us to actually apply our research advances to improve the common good."

— John Langell, School of Medicine

"For me the greatest accomplishment is seeing an idea through from initial conception to actual implementation and use. It is quite a journey and requires a broad range of skills and interaction with a diverse set of experts."

— Jim Agutter, College of Architecture + Planning

"Creating a product with the potential to help people is both exciting and satisfying, particularly when the process also involves graduate and undergraduate students."

— Dale Clayton, College of Science

"Commercialization provides me with a sense of joy when I see the network of connections that are formed between ideas, people, materials, machines and markets."

— Bob Hitchcock, College of Engineering

COMPANY FEATURE

STARTUP FIGHTS CANCER WITH BETTER TESTING

AvanSci Bio microdissection device aids testing by recovering genetic samples from microscope slides

A new device designed to more effectively produce DNA samples for genetic testing from slide-mounted tissue samples is better equipped than most models on the market to help in the diagnosis and treatment of cancer. Its inventors say the microdissection device is an effective and reasonably priced method for removing tissue samples from microscope slides. The samples are used for genetic testing, so precision is essential. The impact could be substantial since genetic testing is becoming more popular in the fight against cancer, and the demand for efficient dissection tools is growing.

A Salt Lake City startup company, AvanSci Bio recently started selling the new device, called the MESO-1. The company was formed in 2011 and has attracted significant funding — including a $50,000 grant from the U, a $40,000 grant from the Utah Governor's Office of Economic Development, more than $500,000 from private investors, and most recently, two grants for $213,000 and $149,000 from the federal Small Business Innovation Research (SBIR) program.

THE MESO-1 DEVICE PROVIDES MUCH GREATER ACCURACY THAN USING A SCALPEL

"Their device addresses a need in clinical laboratories for a slide microdissection system that is semi-automated, precise and convenient to use for the pathologist," said Beth Drees, a manager at the U's Technology Commercialization Office, which administers the U's intellectual property and assisted AvanSci Bio through the commercialization process. "A growing number of molecular tests require that specific cells of interest, such as tumor cells, be dissected out from slide-mounted tissue samples."

The MESO-1 consists of three basic parts: an instrument that resembles a small milling machine equipped with a joystick and digital microscope for controlling the milling process; a specialized consumable mill bit called the xScisor; and computer software for annotating images and pinpointing a tissue section to be collected. The xScisor is one of the most unique components of the device and mills the tissue from the slide surface while simultaneously dispensing and aspirating fluid to recover the displaced tissue fragments. The tissue fragments are then recovered for further testing.

IMPROVED GENETIC TESTING. *Pictured are (left to right) Katherine Geiersbach, Mark Herrmann, Nils Adey and Rob Parry.*

One major user group targeted are laboratories performing genetic testing to detect mutations in cancer. The industry standard is to use a scalpel to scrape part of a tumor off a slide. This method is inexpensive and works for many samples, but it falls short when precision is required. A laser method also exists to collect precise samples, but those instruments can cost up to $500,000.

MESO-1 falls in between these two competing methods by providing a more accurate sample than scraping slides by hand, while being much less expensive than laser methods. AvanSci Bio is selling its device for a base price of $20,000. The name for MESO-1 suggests the middle ground it fills in the marketplace — "meso" means middle.

Co-inventor Katherine Geiersbach, M.D., assistant professor in the U's Department of Pathology, first identified the need for the device while working in molecular oncology at ARUP, the U's national reference laboratory that performs laboratory testing for University Health Care and for other hospital systems across the country. She was frustrated by the lack of a method that was more precise than hand-scraping, while more convenient than the laser method.

"In the clinical testing arena, we frequently need greater accuracy than we can achieve with a scalpel, but LCM (laser capture microdissection) is not a practical solution for most labs," said Geiersbach.

Learn more at www.avanscibio.com.

STUDENT STARTUP

NAVILLUM GOES TO WASHINGTON

M.B.A. students and researchers win People's Choice Award in National Clean Energy Business Plan Competition

SMALL SIZE, BIG IMPACT. *Quantum dots give off different colors of light depending on their size. Pictured are quantum dots in a liquid solution under a florescent light.*

One year ago, Ryan Tucker, an M.B.A. student at the David Eccles School of Business, had never heard of quantum dots. But he quickly mastered the topic and helped U startup Navillum earn the People's Choice Award at the White House during the finals for the National Clean Energy Business Plan Competition.

"The People's Choice Award represents all the local support we had in Utah, from our alumni, students and the entire community," Tucker said. "The win also reflects peoples' interest in nanocrystal technology and the benefits it will provide in electronic displays and solar energy."

Tucker collaborated with fellow M.B.A. students Chris Lewis and Ameya Chaudhari and the three U researchers behind Navillum. They won the People's Choice Award by capturing the most votes during several weeks of online voting. It was one of just three awards presented at the White House.

U TEAM WON $100K AT REGIONAL EVENT AND ATTENDED FINAL AWARD CEREMONY AT WHITE HOUSE

Navillum has a unique process for more efficiently producing semiconductor nanocrystals, such as quantum dots. Nanocrystals give off different colors of light depending on their size, and they have many applications — from improved energy-efficiency in computer displays and lighting to doubling the efficiency of solar panels.

Jacqueline Siy-Ronquillo, a U chemist and post-doctoral fellow, invented Navillum's nanocrystal production process as part of her Ph.D. dissertation under Dr. Michael Bartl (associate professor) in the Department of Chemistry. Other members of the scientific team include Nikko Ronquillo (M.D/Ph.D. student).

The team advanced to the national finals after winning first place and $100,000 in the regional CU Cleantech New Venture Challenge at the University of Colorado in Boulder. In the national finals, Tucker, Lewis and Chaudhari presented Navillum's business plan and competed against teams from MIT, Northwestern, Stanford, Columbia and Central Florida. The six finalists advanced from an initial pool of about 300 teams from across the country.

THE NATION'S CAPITAL. *Picture are (left to right) Ryan Tucker, Chris Lewis, Ameya Chaudhari, Taylor Randall, Troy D'Ambrosio and Gibson Peters.*

During the finals, the teams spent two days in Washington, D.C., pitching their business plans to politicians, venture capitalists and judges. Highlights included one-on-one discussions with U.S. Secretary of Energy Steven Chu and Acting Secretary of Commerce Rebecca Blank, and a keynote address by White House Chief Technology Officer Todd Park.

"The competition was very educational for us," said Nikko Ronquillo, who co-founded the company with Jacqueline Siy-Ronquillo. "We came in as a very early startup company, and we expected to be up against very good competition. This experience was invaluable as a future entrepreneur."

The U students and researchers came together through the Lassonde New Venture Development Center, which is managed by the David Eccles School of Business and operated in partnership with Tech Ventures. The center pairs faculty inventors with graduate students, who spend an academic year writing business plans for the inventors.

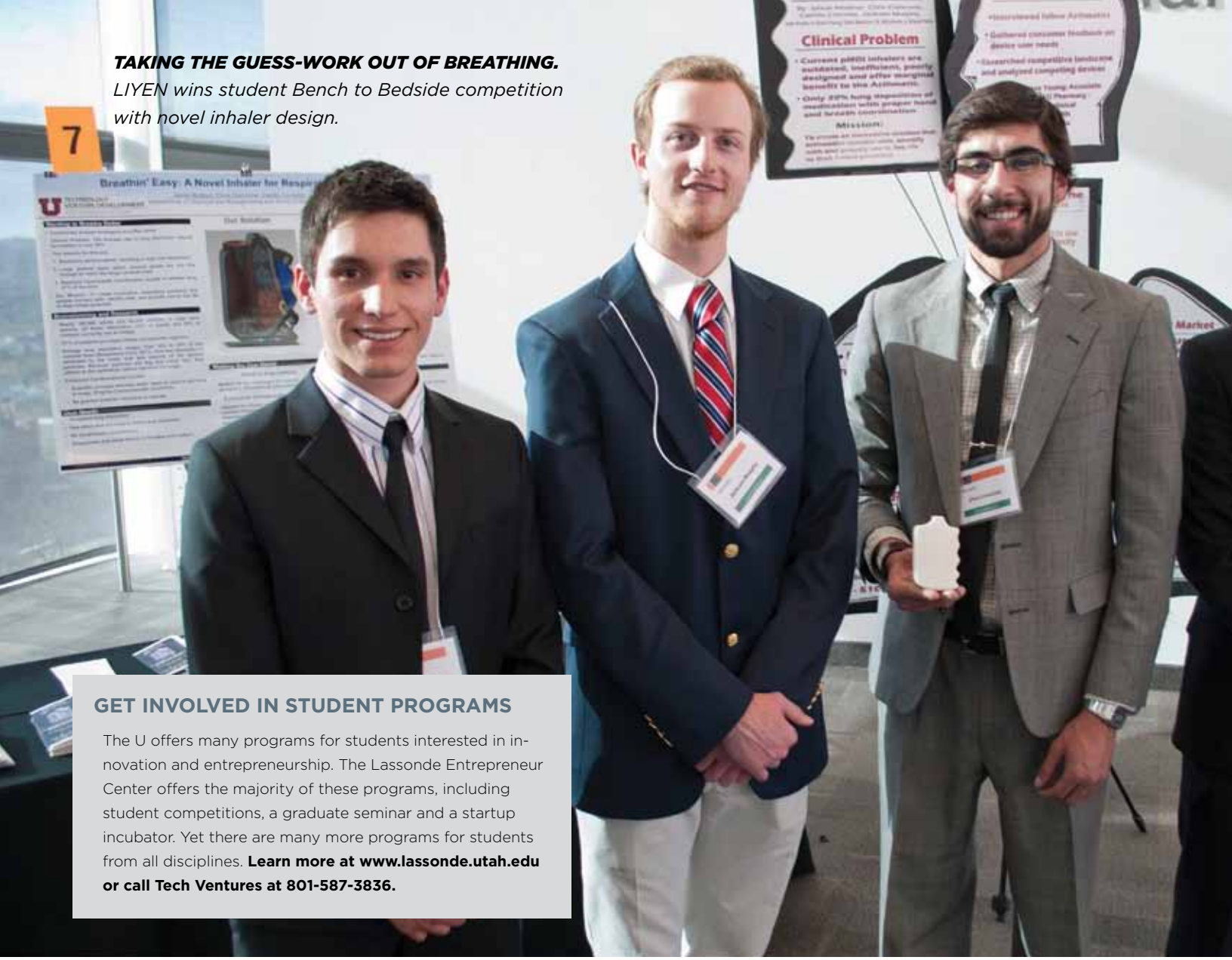
Learn more at www.navillum.com or www.lassonde.utah.edu.

WHAT'S A QUANTUM DOT?

Quantum dots, a type of semiconductor nanocrystal that emit photons when excited, were first discovered in the 1980s. The color of light they emit depends on the dot's size. Small dots produce light toward the blue side of the spectrum; large dots produce light toward the red side. They are so tiny that about four million of them would fit across the diameter of a penny. A gram can cost $2,500 to $10,000.

Navillum co-founders Nikko Ronquillo, left, and Jacqueline Siy-Ronquillo.

TAKING THE GUESS-WORK OUT OF BREATHING.
LIYEN wins student Bench to Bedside competition with novel inhaler design.



GET INVOLVED IN STUDENT PROGRAMS

The U offers many programs for students interested in innovation and entrepreneurship. The Lassonde Entrepreneur Center offers the majority of these programs, including student competitions, a graduate seminar and a startup incubator. Yet there are many more programs for students from all disciplines. **Learn more at www.lassonde.utah.edu or call Tech Ventures at 801-587-3836.**

BENCH TO BEDSIDE TEAM DESIGNS NEXT-GENERATION INHALER

ASTHMATICS CAN NOW BREATHE A LITTLE EASIER THANKS TO A NOVEL INHALER DEVELOPED BY A TEAM OF STUDENTS FROM THE U AND WESTMINSTER COLLEGE FOR BENCH TO BEDSIDE, A STUDENT MEDICAL DEVICE COMPETITION AT THE U.

"I entered the Bench to Bedside competition to make a positive difference in the world," said U chemical engineering student Camilo Corredor. "Our device has the potential to affect millions of people in the United States alone, not only in terms of saving money, but also by destigmatizing inhalers and asthma in general."

Chris Ciancone, a marketing student at Westminster, along with his team of U engineering students, won the grand prize of $15,000 at the competition with his inhaler, LIYEN (acronym for Last Inhaler You'll Ever Need). In addition to winning the grand prize, the team also walked away with the $5,000 prize for best business plan.

Ciancone, one of the over 200,000 Utahns who suffer from respiratory diseases such as asthma, said the idea to create the device came to him while he was spending time in the hospital recovering from surgery.

"I was staring at my inhaler when the vision struck," he said. "I thought that there was a tremendous opportunity to improve inhalers and really revolutionize the industry, as well as help

empower millions of people like myself to live life unrestrained from their respiratory problems."

Ciancone said the average rate of lung deposition of medicine offered by available inhalers is only 20 percent if used with the proper hand-breath coordination technique. His device has the potential to deliver 70-90 percent of albuterol medication to the lungs while significantly reducing the need for hand-breath coordination, thus preventing the drug from being wasted.

The LIYEN inhaler also exhibits a modern design that challenges the perception of inhalers as boring and ineffective.

Learn more at www.techventures.utah.edu/b2b.

STUDENT INVOLVEMENT

	FY 2011	FY2012
Entrepreneurial & innovation programs		
Student competitions	1,644	2,075
Education programs	173	185
Youth outreach	600	1,500
Commercialization intern program	29	30
Total students	**2,446**	**3,790**

NEW BIOINNOVATE PROGRAM GRADUATES FIRST CLASS

Imagine being able to turn an idea for a new medical device into a testable prototype complete with a business plan and a master's degree. A new program, bioInnovate, is allowing students to do just that.

BioInnovate was created by Robert Hitchcock, of the Department of Bioengineering and John Langell, of the School of Medicine. It is a fully-accredited master of bioengineering degree that provides a comprehensive biomedical device design and entrepreneurship training program through the use of multidisciplinary, hands-on teaching methods. Students are trained in clinical problem identification, medical device innovation and commercial translation.

Eight students graduated from bioInnovate in May, 2012 as part of the program's first graduating class. The inaugural class consisted of two teams of students working on different medical device concepts.

"The importance of the first graduating class of the program cannot be overstated," Langell said. "It was a culmination of two years of collaborative effort aimed at producing future innovators and entrepreneurs who will shape and improve health-care delivery with new medical devices."

As part of the program, students immerse themselves in clinical environments, observe procedures and the use of medical devices, and interact with patients and clinicians to uncover unmet clinical needs. Students then translate those unmet needs into medical device concepts.

BioInnovate students are trained in clinical problem identification and medical device innovation.

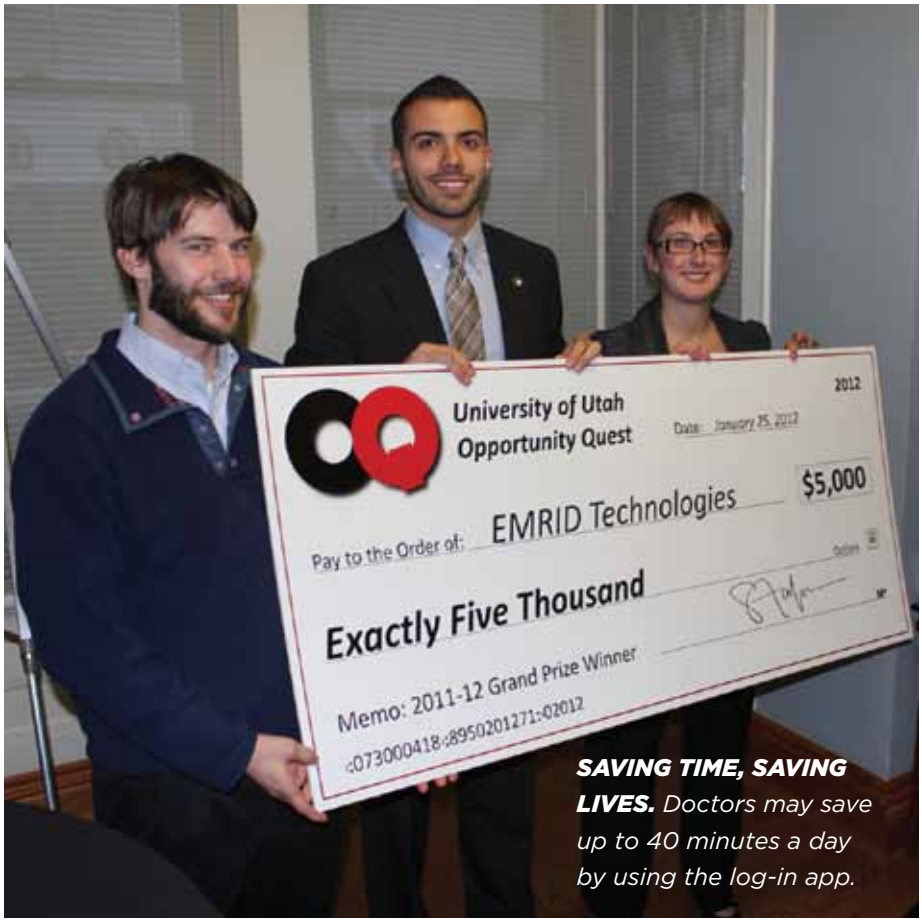
"Students are taught how to refine their device concepts for commercial potential," Hitchcock said. "Once final concepts have been generated, student teams will further develop these ideas into testable prototypes and develop business plans while operating under the regulatory framework of the FDA."

"Watching the transformation of these individuals into a synergistic, integrated and interdisciplinary team of professionals has greatly impressed me," said Langell. "Over the course of their fellowship year, their efforts and achievements have far surpassed our expectations."

Learn more at www.bioinnovate.utah.edu.

EMRID WINS OQ WITH VIRTUAL ID BADGE

DOCTORS ARE NOW ABLE TO ACCESS HOSPITAL SYSTEMS MORE QUICKLY, CONVENIENTLY AND SECURELY THAN EVER BEFORE THANKS TO A STUDENT ENTREPRENEURIAL TEAM AT THE U.



SAVING TIME, SAVING LIVES. *Doctors may save up to 40 minutes a day by using the log-in app.*

Winners of the U's Opportunity Quest (OQ), the EMRID Technologies team, comprised of students Austin Aerts, Emily Theisen and David Kent, bested 23 other entries to claim the top prize of $5,000. OQ provides student entrepreneurs a competition where they can learn the process of starting a business while being mentored by professionals and competing for a share of startup cash.

"The product is basically an authentication protocol used with a cell phone app," said Austin Aerts, EMRID CFO. "Employees constantly use personal mobile devices for professional activities, yet sensitive information must continue to be protected by company and governmental standards. EMRID offers a simple — yet elegant — solution to this by turning mobile devices into virtual ID badges. In doing so, they don't need to enter a password that can be hacked, and the device can facilitate professional use of personal devices while working within the current IT and security systems."

While the system allows doctors to access records more securely, it also aims to improve accessibility.

"Before, doctors were wasting up to 40 minutes a day logging into and out of the system. Now, doctors can log into the app with just one touch," Aerts said.

Learn more at www.ues.utah.edu/oq.

LIGADON HONORED FOR TENDON REPAIR DEVICE

Ligadon could revolutionize the way doctors repair ligament or tendon tears.

For most, a torn ligament or tendon is a painful nuisance. For Dolly Holt and the Ligadon team, it was the inspiration behind the invention of an award-winning medical device.

The winner of techTITANS Idea Challenge and a top competitor at the Utah Entrepreneur Challenge, Holt came up with the idea for the device after overhearing an orthopedic surgeon talk about the recurring ligament tearing problems his patients were experiencing. Her invention provides a more effective, safer way for doctors to repair ligament or tendon tears. While current suturing methods enable further tears by creating high stress points, pressure on a ligament is distributed equally when Holt's technology is implemented.

"Imagine crushing a raw egg," she said. "It's easy to do when you grasp the egg with just two fingers, but if you take it in your fist and squeeze, the egg will not break — this is because the force has been dispersed evenly throughout. My device acts in a similar way while preventing further tearing and aiding in the healing process."

Learn more at www.ues.utah.edu/techtitans or www.ues.utah.edu/uec.

SCIENCE! TECHNOLOGY! ROBOTS! *Children from across Utah learn about technology and innovation by building LEGO robots.*

FIRST LEGO LEAGUE GROWING IN UTAH

THE UNIVERSITY OF UTAH AND TECH VENTURES BELIEVE INNOVATION AND THE PURSUIT OF NEW IDEAS IS THE CORNERSTONE OF UTAH'S ECONOMIC FUTURE, AND THEY ARE PROUD TO BRING THE FIRST LEGO LEAGUE (FLL) PROGRAM TO KIDS ACROSS UTAH.

In just a few years, Utah FIRST LEGO League has grown from one championship tournament at the U to 14 qualifying events along with the campus championship. The exponential growth of FLL now includes over 2,000 elementary and middle school-aged children across Utah.

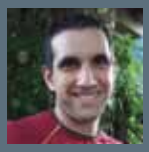
FLL combines teamwork and technology as 9-14-year-olds compete in annual tournaments to solve real-world problems and discover new skills and interests. Teams can also compete for over $250,000 in services and support to bring their innovative ideas to market.

A global robotics and innovation program, FLL allows students to solve real-world challenges by building LEGO-based robots to complete tasks on a thematic playing surface using LEGO MINDSTORMS technology and by researching and presenting solutions related to an annual theme. FLL teams, guided by their imaginations and adult coaches, explore exciting career possibilities and, through the process, learn to make positive contributions to society.

Learn more at www.utfll.utah.edu.

STUDENTS ON INNOVATION SCHOLAR

Innovation Scholar is a new undergraduate recognition program. It allows students to merge coursework and extracurricular activities into a plan to make a difference in the world. Through the program, students create a personal road map and select big questions to tackle. **Learn more at www.innovation.utah.edu.**



"The Innovation Scholar experience is like a springboard into the world of opportunities here at the U. It is a unique course that has allowed me to network and meet with other passionate and innovative students."

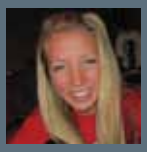
— Brandon Bacon

"We have been challenged to engage ourselves in internships and other programs offered at the University of Utah, as well as in our community. Because of this, I have been able to become involved in a study abroad program as well as an internship."

— Jessica Anderson Lee

"The Innovation Scholar program has been an impeccable process. Through the class, which encourages creativity and sharing of examples and ideas, I have learned a great deal about the processes needed for an idea or concept to flourish."

— Alex Carr



"My experience with Innovation Scholar so far has basically been awesome as it has provided a segue for me to connect my education with my personal goals and desires. The program makes me believe I can change the world, and I know I will."

— Samantha Anderson

"I believe that the process we have undertaken in Innovation Scholar — identification of problems on campus, in the community and around the world coupled with our passion for these problems — is an incredibly invigorating process."

— Andrew Pagels

RESEARCH

BUILDING BETTER PROSTHETICS

U and VA researchers partner with DJO Global to develop prosthetic implant

Thousands of veterans returning to the U.S. suffer with limb amputations, and standard prosthetics are not an option for many of them. Skin issues or short remaining-limb length cause many to forgo the typical socket-type attachment systems.

A team of researchers and surgeons from the University of Utah and the George E. Wahlen Department of Veterans Affairs (VA) Medical Center in Salt Lake City hope to provide an alternative solution via osseointegrated direct skeletal attachment of prosthetic limbs for these veterans and the many others with a similar condition. For the last six years, researchers have been developing a device that can be implanted into a person's residual bone, passing through the skin, so they can securely attach a prosthetic limb without the need for a socket.

RESEARCHERS START FEASIBILITY STUDY TO PROVE METHOD

"We are trying desperately to provide relief to the many veterans who have lost a limb," said Roy Bloebaum, a professor of orthopaedics at the U and director of the VA Bone and Joint Research Lab. "Many of these people are very young and have many years to live."

Nothing like it has been done at a U.S. hospital, and the procedure has only been attempted an estimated 250 times worldwide in Europe and Australia, with mixed results.

Bloebaum is working with two other U professors: Kent Bachus, an engineer and a professor of orthopaedics and director of the Orthopaedic Research Lab at the university, and Peter Beck, an orthopaedic surgeon and adjunct professor of orthopaedics.

Their research recently hit two milestones. One was a partnership with DJO Surgical, a global developer, manufacturer and distributor of medical devices, which has licensed the implant technology and is assisting with the remaining research and development. The other milestone is being accepted into a new Food and Drug Administration program that allows them to design a human early feasibility study. DJO Surgical applied for the FDA study and is responsible for managing it.

The early feasibility study will last up to three years. During that time, the clinical research team will implant their device into 10 patients. A unique element will be the ability to develop and refine their device between operations, which should accelerate the refinement process by compressing the development cycle.

Researchers studying these implants have faced three fundamental problems — getting the bone to grow into the device, preventing infection and determining how to address the skin interface.

Researchers believe they have already addressed most of these problems, as the solutions lie in the design of their device and the materials used. Specifically, the titanium device is integral to its success because it is coated with a porous titanium material called P2 (P squared), which is a proprietary coating owned by DJO. Skin and bone grow into the material, forming a secure bond.

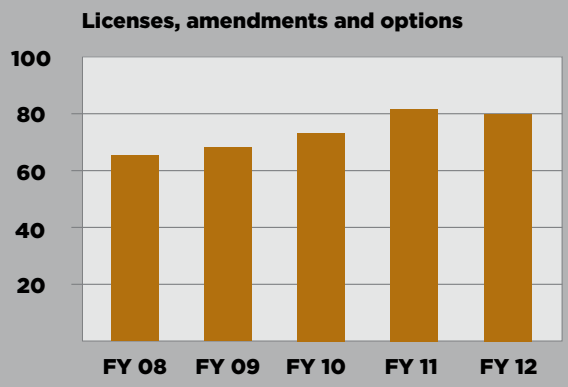
Bloebaum, Bachus and Beck still have a long way to go before U.S. hospitals will be offering their device. However, they are working to secure $5 million in grants and partnerships like the one with DJO.

"With the combination of our proprietary titanium P2 porous coating and Dr. Bloebaum's unique approach for percutaneous osseointegrated prosthesis, we believe that we have developed a winning solution that will have a monumental impact on the lives of amputees," said Bryan Monroe, DJO's senior vice president and general manager of DJO Surgical.

Learn more at www.bjrl.utah.edu or www.djoglobal.com.

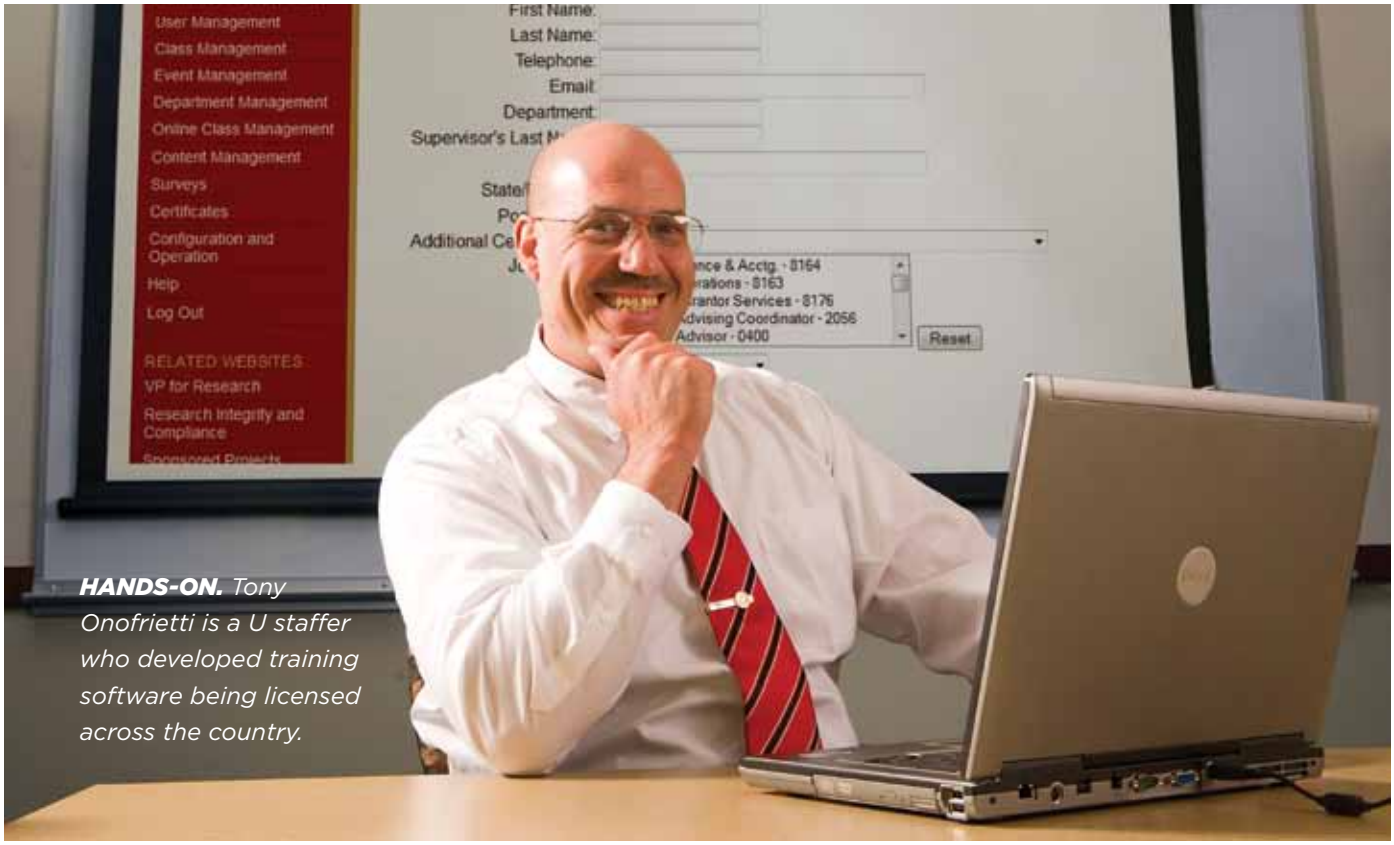
RELIEF FOR VETERANS. *Researchers (left to right) Peter Beck, Roy Bloebaum and Kent Bachus are developing an implantable prosthetic device.*

LICENSES AND PARTNERSHIPS



Industry partnerships are critical to commercialization at the University of Utah. The university works with companies on sponsored research projects, licenses technologies to companies and collaborates in many other ways.

	FY 2011	FY2012
Licenses, outreach and agreements		
Executed licensing agreements	81	80
Industry contacts & business relationships	262	260
Commercial sponsored research agreements	74	90



HANDS-ON. *Tony Onofrietti is a U staffer who developed training software being licensed across the country.*

U PARTNERS TO SELL TRAINING SOFTWARE

TONY ONOFRIETTI, THE U'S DIRECTOR OF RESEARCH EDUCATION, STARTED LOOKING FOR CUSTOM SOFTWARE IN 2004. HE WANTED SOMETHING TO HELP TRACK THE DOZENS OF TRAINING CLASSES FOR HUNDREDS OF RESEARCHERS AND THEIR STAFF MEMBERS WHO TAKE THEM. WHEN HIS SEARCH CAME UP EMPTY, HE DECIDED TO TAKE MATTERS INTO HIS OWN HANDS.

"I was looking for off-the-shelf software to do course registration and database management," he said. "But I could not find anything that met our needs, so I recruited a programmer and started developing the software myself."

Eight years and several versions later, Onofrietti has a custom software package called RosterTech. It is used across the U and has a growing presence around the country. Driving the growth is a new partnership with MAXIMUS, a company based in Reston, Va., that helps higher education institutions with grant and contract award management and budgeting, in addition to supporting federal, state and local governments in meeting client service needs.

MAXIMUS is marketing Onofrietti's software to universities, and it has already sold a significant license to the University of Pittsburgh. MAXIMUS is targeting the research education divisions of universities first, but the software can be customized for any type of training, continuing education or distance-learning. Research education includes training personnel how to manage federal grants and comply with federal compliance requirements.

"The agreement with MAXIMUS is an exciting development for Tony and RosterTech," said Eric Paulsen, a business and technology development manager with the U's Technology Commercialization Office. Paulsen works with inventors like Onofrietti to develop and license technology. "We are hopeful this agreement will help us license this software to many more institutions."

RosterTech is a web-based platform with many features and applications. Basic capabilities include recording student enrollment, classes and certification, and it includes pre-outlined courses for research education. But the software can be customized to meet almost any need.

"This is something that institutions can own, manage, develop and expand so they can reach their population without sending them to conferences and meetings," said Kris Rhodes, director of the higher education practice at MAXIMUS.

Learn more at www.rostertech.com or www.maximus.com.

OUTREACH PROGRAMS AT THE U

TECHNOLOGY VENTURE DEVELOPMENT WELCOMES PARTNERSHIPS WITH INDIVIDUALS AND ORGANIZATIONS. THE U PROVIDES MANY PROGRAMS AND SERVICES TO PROMOTE THESE RELATIONSHIPS. ALL OF THE FOLLOWING ARE MANAGED BY THE TECHNOLOGY COMMERCIALIZATION OFFICE (TCO).

COMMERCIAL SPONSORED RESEARCH

The U offers commercial sponsored research opportunities, allowing companies to form partnerships with faculty members in their field of interest. Partnerships take many shapes and forms. Companies often approach universities when they want an answer to a fundamental research question relevant to their business.

Call TCO for details at 801-581-7792.

ENERGY COMMERCIALIZATION CENTER

The Energy Commercialization Center's mission is to drive energy technologies through its partner network to the next stage of validation, whether it is rapid prototyping, pilot development or commercial scale deployment.

www.ecc.utah.edu

COMMERCIALIZATION INTERCHANGE

The Commercialization Interchange is "A Roundtable to Improve Execution in Technology Commercialization." Attendees come from institutions across the country, and they meet to discuss the biggest challenges facing technology managers today. The format is a hands-on forum, where everyone has the opportunity to drive discussion.

www.techventures.utah.edu/roundtable

INNOVATORS SHOWCASE

The University Innovators Showcase is a regular meeting between university technology managers and potential investors and business partners. The format mirrors a speed-dating event — technology managers make a 90-second pitch to a table of investors, and when a buzzer rings, they move to the next table. Leading universities from across Utah participate in this unique event.

Call TCO for details at 801-581-7792.

TCO ACCELERATOR

The TCO Accelerator is a rapid prototyping facility focused on accelerating product development and market launch for early-stage medical and life science companies and technologies. This unique facility provides the infrastructure, resources and services for start-ups and existing companies looking to relocate.

www.techventures.utah.edu/accelerator

COLLABORATION. *The U invites companies and individuals to partner on commercial projects.*

SOFTWARE DEVELOPMENT CENTER

The U, in conjunction with the Scientific Computing and Imaging Institute and TCO, created the Software Development Center (SDC) in 2009. The SDC, a joint effort across campus, was established to find and develop promising U software projects, and to disseminate them to the public from one centralized source.

www.sdcenter.utah.edu

ENTREPRENEUR IN RESIDENCE

The Entrepreneur in Residence program pairs entrepreneurs with faculty inventors. It is managed by experienced entrepreneurs who facilitate the process. Much of the work involves private consultations with entrepreneurs who want to find a new business opportunity in a particular niche or industry.

Call TCO for details at 801-581-7792.

TECH TUESDAY

Tech Tuesday is a regular networking event hosted by TCO for faculty inventors, entrepreneurs and industry leaders. Attendance for this exclusive event is by invitation only.

Call TCO for details at 801-581-7792.

PARTNER WITH THE U

The U provides many partnership opportunities for individuals and companies. Many of them are offered by the Technology Commercialization Office (TCO), which manages the U's intellectual property. Opportunities include networking, incubator space, software development and sponsored research. **Get started by calling the TCO at 801-581-7792.**

THE UNIVERSITY OF UTAH'S

STARTUP COMPANIES

SINCE THE ESTABLISHMENT OF TECHNOLOGY VENTURE DEVELOPMENT

in 2005, over 140 companies have been launched from university technologies, and the U has launched more than 220 since 1970. These diverse companies range from the fine arts to pharmaceutical chemistry. The following companies are some of the newest created at the U:

ADD-IT

INTERACTIVE EDUCATIONAL AND SUPPORT TOOLS FOR CHILDREN WITH ADHD

Founded: FY 2012
Originating department: Nursing
Industry: Health care
Inventor: Jodi Groot

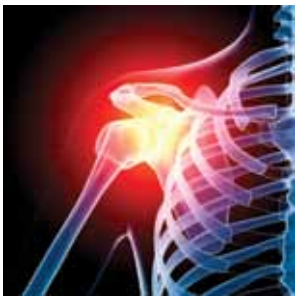
Add-It is developing interactive educational and support tools and devices for children with ADHD. Add-It's software will be available in several modules, from a simple parent alert when assignments are turned in, to the full student application with remote control, allowing the Add-It-enabled device to turn off other electronic devices.

DECIPHERGENX

DEVELOPING MRNA GENE EXPRESSION PROFILES

Founded: FY 2012
Originating department: Anesthesiology
Industry: Health care
Inventors: Alan and Kathy Light

DecipherGenX is creating mRNA gene expression profiles to develop the first objective tests to diagnose and discriminate between the following conditions: chronic fatigue syndrome (CFS), fibromyalgia (FM) and major depressive disorder (MDD). These biomarker-based tests will allow definitive diagnosis of patients, influence therapy and allow monitoring of therapeutic effectiveness.



ELUTE, INC.

DEVELOPING ANTIMICROBIAL BIOMATERIALS IMPLANT PRODUCTS FOR ORTHOPEDIC USE

Founded: FY 2011
Originating department: Pharmaceutics and Pharmaceutical Chemistry
Industry: Biomedical devices
Inventor: David Grainger

Elute, Inc. is developing drug-releasing polymer-coated bone grafts used during orthopedic surgeries. Its initial ElutiBone graft addresses surgical infections and promotes bone healing through local, sustained, controlled release of antibiotics.

IBIOLOGICS

HIGH QUALITY BIOLOGICAL PRODUCTS FOR RESEARCH APPLICATIONS

Founded: FY 2012
Originating department: Surgery
Industry: Biotechnology, pharmacology
Inventor: Amit Patel

iBiologics provides high-quality research-grade products for the biotechnology, pharmacology and academic communities.

DOMAIN SURGICAL

ADVANCED THERMAL SURGICAL TECHNOLOGY FOR CUTTING AND COAGULATING TISSUE

Founded: FY 2011
Originating department: University of Utah's Technology Commercialization Office
Industry: Medical devices
Website: www.domainsurgical.com

Domain Surgical develops advanced thermal surgical technology. Its FMwand (Ferromagnetic Surgical System) is a surgical device that is based on ferromagnetic heating technology. The FMwand simultaneously cuts and coagulates soft tissue while minimizing collateral tissue damage, without passing electrical current into the patient.

INSUGEN

CURING TYPE I DIABETES THROUGH CELL THERAPY

Founded: FY 2011
Originating department: Internal Medicine, Nephrology, School of Medicine
Industry: Biotechnology, pharmaceutical
Inventor: Christof Westenfelder

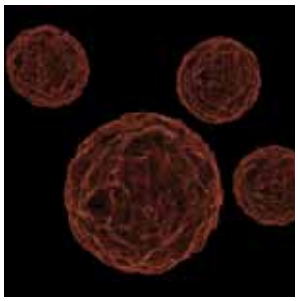
InsuGen's primary goal is to develop its proprietary, adult stem-cell-based therapy for the cure of insulin-dependent diabetes. InsuGen's technology is designed to permanently correct insulin deficiency in patients with type I and potentially late-stage type II diabetes (DM1,DM2), and in diabetic companion animals.

LAZARUS MEDICAL TECHNOLOGIES (LMT)

DEVELOPING MOVING CHEST TUBES

Founded: FY 2012
Originating department: Surgery
Industry: Biomedical devices
Inventor: Harrison Lazarus

LMT specializes in developing a moving chest tube that will traverse the thoracic cavity to improve complete evacuation of unwanted fluid from pleural space. It is expected that the chest tube will have a wide range of movement compared to the existing fixed tubes.



LONE STAR THIOTHERAPIES

DEVELOPING TREATMENTS FOR HUMAN HEPATOBILIARY DISEASES

Founded: FY 2012
Originating department: Huntsman Cancer Institute
Industry: Health care
Inventor: Paul Shami

LoneStar Thiotherapies is commercializing dithiocarbamate/metal complexes as treatment for human hepatobiliary diseases. Thiocarbamates and metals accumulate in the liver, naturally producing therapeutic drug concentration in the hepatic compartment.

MULTI-FUNCTIONAL IMAGING (MFI)

ADVANCED IMAGING SOLUTIONS

Founded: FY 2012
Originating department: Utah Center for Advanced Imaging Research (UCAIR), Department of Radiology
Industry: Medical imaging
Inventor: Dan Kadrmas
Websites: www.mfimage.com

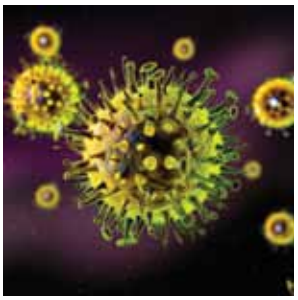
MFI provides technologies for advanced medical imaging applications, offering solutions for obtaining and quantifying multiple imaging results in a single scan.

FALLGATTER TECHNOLOGIES

PHOTOGRAPHING SMALL, FAST-MOVING, FALLING OBJECTS

Founded: FY 2012
Originating department: Atmospheric Sciences
Industry: Meteorological instrumentation
Inventors: Cale Fallgatter and Tim Garrett
Website: www.inscc.utah.edu/~tgarrett/Snowflakes/Snowflakes.html

Fallgatter Technologies was created to sell the first instrument for taking high-resolution, multi-angle photographs of snowflakes in free fall and simultaneously measure their fall speed. This capability has been needed to improve radar detection of precipitation and to enable more accurate forecasting of cold weather.



PECTEN TECHNOLOGIES

DETECTING MATERIALS NOT VISIBLE TO THE HUMAN EYE

Founded: FY 2012
Originating department: Surgery
Industry: Research tools
Inventors: David Bull and Joyce Ogburn

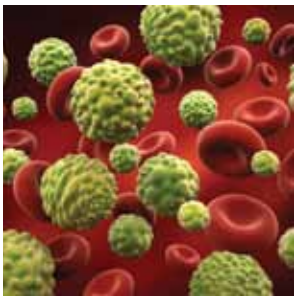
Pecten is developing new technologies and techniques to detect information present in biologic and non-biologic material that is not visible to the human eye.

PRONTO INTERNATIONAL

OBSTETRIC AND NEONATAL EMERGENCY SIMULATION

Founded: FY 2012
Originating department: College of Nursing
Industry: Health care
Inventor: Susanna Cohen, Dilys Walker and Jenifer Fahey
Website: www.prontointernational.org

PRONTO International is an obstetric and neonatal emergency training program that leads medical care teams through a series of skills stations, team-building activities and low-tech, high-fidelity simulations.



SALARIUS PHARMACEUTICALS

NOVEL EPIGENETIC CANCER THERAPY

Founded: FY 2012
Originating department: Center for Investigational Therapeutics, Huntsman Cancer Institute
Industry: Pharmaceuticals
Inventors: Sunil Sharma and David Bearss

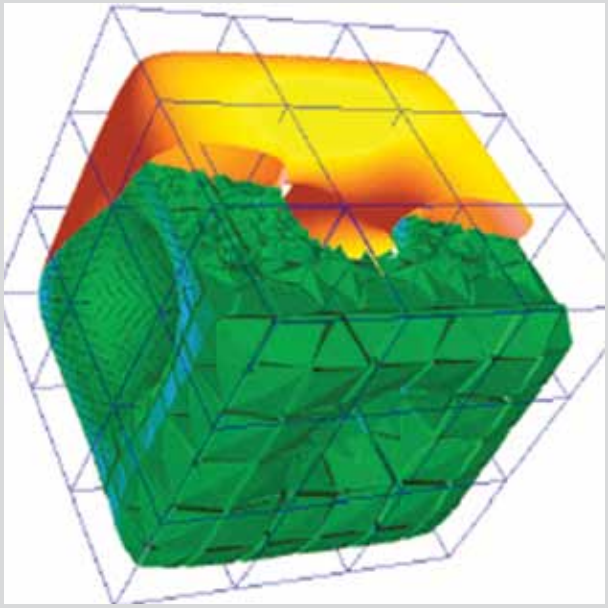
Salarius Pharmaceuticals is developing the leading lysine specific histone demethylase 1 inhibitor (LSD1). This compound has potential in hormonal tumors, acute myeloid leukemia (AML) and certain undifferentiated sarcomas, where it may be effective in stem-like cancers.

SEISMIC OPTION SAFETY (SOS) SYSTEMS

LOCATING TRAPPED MINERS USING LOW-COST EQUIPMENT

Founded: FY 2011
Originating department: Geophysics and Mining Engineering
Industry: Mining technology and services
Inventors: Gerard Schuster and Kim McCarter

SOS Systems has developed "Trapped Miner Technology" that can be used to locate miners that have been trapped in a collapse. The technology has the ability to function in worst-case scenario situations.



VISUS

STORING, PROCESSING AND DELIVERING HIGH-RESOLUTION IMAGES

Founded: FY 2012
Originating department: Scientific Computing and Imaging Institute
Industry: Imaging
Inventor: Valerio Pascucci

Visus technologies enable scalable storage, processing and delivery of high-resolution images. These technologies have the ability to be scalable across a wide range of computing resources, and performance degrades very gracefully on low-power/low-performance devices. Application areas include digital photography, interactive entertainment, intelligence and remote medicine.

TELOME HEALTH, INC.

MEASURING TELOMERE LENGTHS FOR RESEARCH PROJECTS AND SOON FOR CONSUMERS

Founded: FY 2011
Originating department: Human Genetics
Industry: Biotechnology
Inventor: Richard Cawthon
Website: www.telomehealth.com

Telome Health, Inc. is a biotechnology company committed to a deeper understanding of telomere science and how it might promote human health, assess disease risk and predict drug response.

UTAH MEDICAL SOLUTIONS

TECHNOLOGIES FOR IMPROVING HEALTH-CARE MANAGEMENT

Founded: FY 2012
Originating department: Comprehensive Arrhythmia Research and Management Center (CARMA)
Industry: Health care
Inventor: Nassir Marrouche
Website: www.utahmedicalsolutions.com

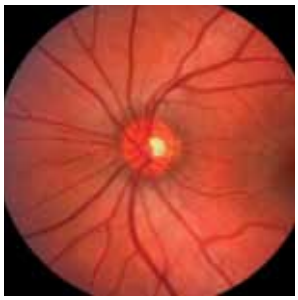
Utah Medical Solutions (UMS) systems deliver disease-specific information allowing clinicians to interface with an electronic patient record and allowing patients to interface and track real-time symptoms and response to treatments.

VERISTRIDE

AFFORDABLE AND PERSONAL REHAB DEVICES

Founded: FY 2012
Originating department: Mechanical Engineering
Industry: Rehabilitation
Inventors: Stacy Bamberg with Dante Bertelli, Joseph Webster, Randy Carson and Mark Fehlberg

Veristride's initial product includes instrumentation worn on the shoes and a phone application for user feedback. The phone app collects data wirelessly from insole system and provides feedback corresponding to the symmetry of gait. The user can set the target symmetry and allowed range.



VOYANT BIO-THERAPEUTICS

BIOLOGY AND GENETICS OF AGE-RELATED MACULAR DEGENERATION (AMD)

Founded: FY 2012
Originating department: John A Moran Eye Center
Industry: Ophthalmology
Inventors: Gregory Hageman

Voyant Biotherapeutics was founded to commercially develop diagnostics and therapeutics in the treatment of AMD.

CONTACT US

TECHNOLOGY VENTURE DEVELOPMENT AND RELATED DEPARTMENTS PROVIDE A WEALTH OF PROGRAMS AND SERVICES, AND WE ARE CONSTANTLY LOOKING FOR NEW PARTNERS OF ALL BACKGROUNDS AND INTERESTS. BROWSE OUR PROGRAMS AND SERVICES BELOW, AND CONTACT US FOR MORE INFORMATION.

TECHNOLOGY VENTURE DEVELOPMENT

The University of Utah created the Office of Technology Venture Development (also known as "Tech Ventures") in 2005 to oversee and coordinate all commercialization activities on campus. These efforts benefit the state and nation by driving economic activity.

- Community partnerships
- Strategic initiatives
- Faculty outreach
- Entrepreneurial Faculty Scholars
- Commercialization Advisory Board
- Utah FIRST LEGO League
- Innovation Scholar program
- Commercialization roundtable
- Student internships

The University of Utah
105 Fort Douglas Blvd #604
SLC, UT 84113
801-587-3836 (phone)
801-587-5848 (fax)
www.techventures.utah.edu

TECHNOLOGY COMMERCIALIZATION OFFICE (TCO)

The TCO manages all the intellectual property for the University of Utah, from invention disclosures to technology licensing. The department also provides many services for startup companies, partners and students. TCO strives to build partnerships, drive value and be a regional commercialization hub.

- Intellectual property protection
- Technology licensing
- Industry partnerships
- Commercial sponsored research
- Faculty startup support
- Funding opportunities
- Grant writing and assistance
- TCO Accelerator
- Software Development Center
- Energy Commercialization Center
- Entrepreneur in Residence program
- Gateway Crimson Innovation Fund
- Student internships

615 Arapeen #310
SLC, UT 84108
801-581-7792 (phone)
801-581-7538 (fax)
www.tco.utah.edu

PIERRE LASSONDE ENTREPRENEUR CENTER

The Lassonde Center is home base for student entrepreneurial activities at the University of Utah and provides statewide competitions, an innovative graduate program and scholarship opportunities.

- New Venture Development Center
- techTITANS
- Opportunity Quest
- Utah Entrepreneur Challenge
- Student Entrepreneur Conference
- Student startup support

The University of Utah
105 Fort Douglas Blvd #604
SLC, UT 84113
801-585-3844 (phone)
801-587-5848 (fax)
www.lassonde.utah.edu

TECHNOLOGY
VENTURE DEVELOPMENT
THE UNIVERSITY OF UTAH

Technology Venture Development
www.techventures.utah.edu
801-587-3836

Technology Commercialization Office
www.tco.utah.edu
801-581-7792

Pierre Lassonde Entrepreneur Center
www.lassonde.utah.edu
801-585-3702

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