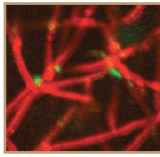


Culture-Free Method for Diagnosing Infections



page 2

Intern Interview Rachel Timmins



page 9

STC Board of Directors Mr. Robert H. Nath



page 10

BUILDING A RAINFOREST IN THE DESERT

www.stc.unm.edu

Volume XXXIII - Spring 2017



Lisa Kuuttila
CEO & Chief Economic Development Officer, STC.UNM

President's Corner

Partnership Benefiting UNM Students

Welcome back to UNM faculty and students from a well-deserved winter break. As this STC spring newsletter finds its way to you, STC and UNM's Innovation Academy are gearing up for a semester of events and continuing development of new programs for students.

The partnership between STC and the Innovation Academy, UNM's entrepreneurial program for students, has never been stronger. Conceived by the UNM Economic Development Council and launched in 2015 by UNM with support from STC, the Academy offers classes and training to students who want to develop entrepreneurial skills.

Currently, nearly 450 students participate in the Academy program and 2,900 students are enrolled in Academy-affiliate courses for the spring semester. The enrollment goal during the 2015 and 2016 school year exceeded goals by more than 2,990 percent. More than 50 percent of participants are female students and students of color and more than 65 percent are first-generation college students. Students in the program represent 39 college majors.

Robert DeCampo, Executive Director of the Innovation Academy, has joined STC as a quarter-time staff member so that the two partners can work more efficiently on the many events and new programs being provided for students. STC and the Innovation Academy have hosted several Rainforest Student Pitch Competitions, which have raised \$35,000 in prize money and produced three student start-ups that have received venture funding and have launched. The next pitch competition will be held on April 24.

Our internship fairs, co-hosted in the afternoon at STC's Cecchi VentureLab (CVL), are a chance for students to come mix, mingle, and eat cookies with start-up and entrepreneur-friendly local companies interested in hiring interns. The fair held in the fall drew 100 students and 16 companies. The latest internship fair was held on January 24. STC's New Ventures Café is an office-hours program open to UNM faculty, staff, and students who want free confidential advice and mentoring on a new idea or business. Attendees are able to network with experienced entrepreneurs from the New Mexico Angels and SCORE. Café hours are held on the last Friday of every month in the morning at the CVL. The latest New Venture Café was held on January 27.

January 27 also saw the launch of a new program called the Entrepreneurial Leadership Program. The course offers deep training for entrepreneurs who want to develop the functional, managerial, and leadership skills that differentiate the good from the great entrepreneur. Dr. DeCampo will teach this morning course at STC.

See the "On the Horizon" events section on the back of this newsletter for more details.

STC and the Innovation Academy are developing other programs as well, including a student CEO search program that will look for students who want to create start-ups around STC technologies and a student inventors club for student inventor support and networking. We have also submitted two grant proposals for new programs. One, submitted to the McCune Foundation, would fund the Lobo Games Lab, an accelerator for student mobile and video

(continues on page 7)

STC.UNM
SUPPORTING TECHNOLOGY TRANSFER AND
CATALYZING ECONOMIC DEVELOPMENT AT
THE UNIVERSITY OF NEW MEXICO

In This Issue

Technology Highlightspg 2

New Opportunitiespg 3

What's Newpg 4

Issued Patentspg 6

People @ STCpg 10

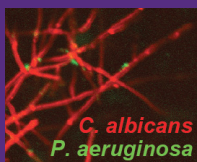
On the Horizonpg 12

Culture-Free Method for Diagnosing Infections

A new technology developed at the University of New Mexico provides a method for diagnosing gram negative/gram positive bacterial and fungal infections, type and stage of infection, and whether microbial biofilms are involved in the origin of the infection. The technology was developed by Assistant Professor Aaron Neumann from the Department of Pathology and Research Assistant Professor Linnea Ista from the Department of Chemical & Biological Engineering.

Many bacteria and fungi form microbial biofilms on the surface of wound infections and contaminated medical devices. Microbial biofilms are organized communities of bacteria and fungi that adhere to living and non-living surfaces and can be more resistant to antibiotics.

Rapid identification of the pathogen type is the key to choosing the most effective treatment, particularly in clinical settings where infections can develop quickly among certain populations, such as cancer patients whose immune systems have been weakened by chemotherapy. Seventy percent of these patients require treatment for infections caused by *P. aeruginosa*, *S. aureus*, and *C. albicans* with significant increase in mortality rates with each hour of delay. Current microbiological tests require a cultured specimen from the patient that can



take 24-48 hours or more to incubate for detection and identification, a delay that puts the patient at greater risk of dying from the infection.

The UNM technology is a fast, culture-free method for diagnosing and typing bacteria and fungi using quorum-sensing molecules (QSM). The QSM's are secreted by bacteria and fungi as biomarkers of infection to identify gram positive and gram negative bacteria and fungi within a couple of hours rather than days for appropriate treatment with antibiotics and fungicides. Additionally, bacteria use QSMs to coordinate certain behaviors such as biofilm formation, virulence and antibiotic resistance based on the density of the bacterial population. The process identifies the stage of infection and whether microbial biofilms are present.

The technology is a valuable addition to culture-based testing, can be used with a variety of specimens such as sputum, blood, cerebrospinal fluid, and urine, and tuned to identify a wide range of pathogens by altering mass spectrometer parameters and co-solvents to improve separation. Ideal applications include hospitals and clinics. ^

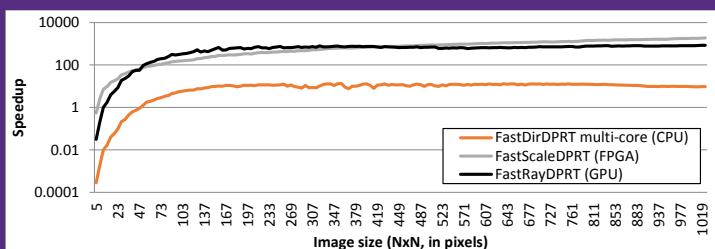
Department of Pathology – UNM
Aaron Kurt Neumann, Ph.D.

Department of Chemical & Biological Engineering – UNM
Linnea Ista, Ph.D.

Reference Number:
2016-047

Parallel Algorithms Improve Speed for Real-Time Image and Video Processing

Graphical processing units (GPUs) are specialized electronic circuits designed to rapidly process images for display and analysis. They are commonly used in embedded systems, mobile phones, personal computers, game consoles, and cloud computing applications. They are very efficient at manipulating computer graphics and images because of their parallel structure and are therefore, along with multi-core CPUs, particularly efficient at performing the complex computations required for real-time image processing applications. However, new approaches to designing GPU and CPU algorithms are needed to make effective use of the many processing cores that are available in modern CPUs and GPUs.



On an 8-core CPU (Intel Xeon), with support for two threads per core, FastDirDPRT and FastDirInvDPRT achieve a speedup of approximately 10x (up to 12.83x) over the single-core CPU implementation. On a 2048-core GPU (GTX 980), FastRayDPRT and FastRayInvDPRT achieve speedups in the range of 526 (for 127x127) to 873 (for 1021x1021), which approximate ideal speedups of what can be achieved. The DPRT can be computed exactly and in real-time (30 frames per second) for 151 x 151 images using a single-core implementation of the FastDirDPRT, for 353 x 353 images using the FastDirDPRT on a multi-core CPU, and for 1471 x 1471 images using FastRayDPRT on the GPU.

Researchers at the University of New Mexico have developed parallel algorithms for CPUs and GPUs that process images much faster than what can be achieved with standard programs running on a single core. The algorithms compute the forward and inverse Discrete Periodic Radon Transform (DPRT) in parallel using all available cores rather than sequentially as current algorithms do, minimizing bottlenecks through the effective use of local GPU memory and logical CPU cores.

The technologies were developed by Professor Marios Pattichis from UNM's Department of Electrical & Computer Engineering, Assistant Professor Daniel Llamocca from Oakland University's Department of Electrical & Computer Engineering, and Assistant Professor Cesar Carranza from Pontificia Universidad Catolica del Peru.

DPRTs are used for many image processing applications such as reconstructing objects in computed tomography, radar imaging, magnetic resonance imaging, and computing 2D convolutions. The UNM technology can handle images at very high speeds, eliminating the need for expensive, specialized hardware. The technology is not tied to any particular hardware and can be used with any existing GPU or multi-core CPU. ^

Department of Computer Science – UNM
Marios Pattichis, Ph.D.

Pontificia Universidad Católica del Perú
Cesar Carranza, Ph.D.

Department of Electrical & Computer Engineering – Oakland University
Daniel Llamocca, Ph.D.

Reference Numbers:
2016-048, 2016-049

STC has filed patent applications on these exciting new technologies and is currently examining commercialization options. If you are interested in information about these or other technologies, please contact Arlene Mirabal at amirabal@stc.unm.edu or 505-272-7886.

Start-Up Armonica Technologies Developing Innovative DNA Nanopore Sequencing Technology



A young company developing technology created at the University of New Mexico is on a mission to disrupt the landscape of DNA sequencing.

Armonica Technologies, LLC, is developing a DNA sequencing platform that will sequence a complete human genome in minutes. The company's goal is to make the technology the gold standard for DNA sequencing for precision medicine research applications. Armonica has optioned a portfolio of patented and patent pending technologies from STC.UNM.

The technology is called optical nanopore sequencing and uses nanochannels to deliver single DNA molecules through nanopores. The nanopores slow down DNA translocation enough to produce massively parallel, single-base resolution using optical techniques.

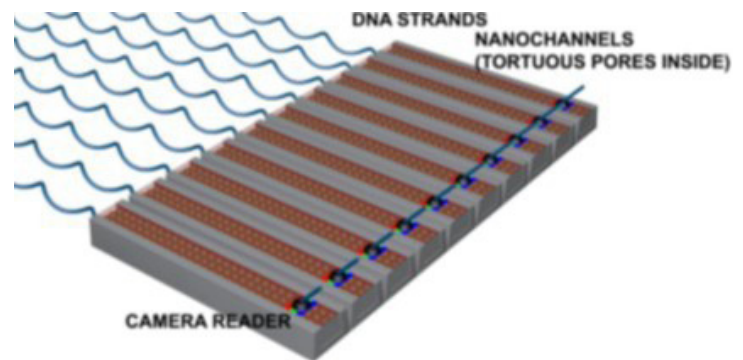
Nanopores are very small holes with an internal diameter of 1 nanometer (one billionth of a meter). Proteins can act as biological nanopores or they can be created by etching holes in silicon or graphene. Nanopore sequencing works in this way: When a nanopore is immersed in conducting fluid, voltage can be applied to produce an electric current. The current is sensitive to the size and shape of the nanopore so that if a DNA strand passes through or near the nanopore, the amount of current changes. The change in the current as the DNA molecule passes through the nanopore represents a reading of the DNA sequence.

"There is an unmet need in the fast-growing DNA sequencing market," says Armonica President & CEO Scott Goldman. "Today's standard genome sequencing approach requires extensive library preparation and creates a massive computational and bioinformatics problem related to reassembling the data set. Armonica will resolve these problems by introducing a sequencing instrument that will not require library preparation and will generate reads of up to 50,000 bases, combined with a parallelism of 1 million. This approach will net 50 billion bases—more than sufficient to sequence the entire human genome in minutes."

The innovative nanopore technology was developed by Distinguished Professor Emeritus Steve Brueck, Research Assistant Professor Yuliya Kuznetsova, and Postdoctoral Fellow Alexander Neumann from UNM's Center for High Technology Materials and Professor Jeremy Edwards from the Department of Chemistry & Chemical Biology in collaboration with Redondo Optics CEO Edgar Mendoza.

Dr. Brueck explained the technology's innovations. "Nanopore sequencing analyzes long DNA strings, with long reads that provide more accurate identification of genome variations. It is an approach, therefore, that leads to a more thorough, faster, and accurate genomic analysis, allowing researchers to substantially improve the ability to make new discoveries. One of the challenges of nanopore sequencing is to improve the resolution to be able to

detect single nucleotides (bases). We believe our nanochannel technology will disrupt the industry because it produces very long reads for higher accuracy, very high parallelism using optical techniques, and high throughput rates for greater processing speed. It will be an affordable tool for researchers."



STC CEO Lisa Kuuttilla added: "This technology portfolio represents a leap in genomic sequencing technology that could be a huge benefit for the DNA sequencing industry, which is experiencing explosive growth. The company's research and development are currently being done at UNM's Center for High Technology Materials (CHTM), a research center with a global reputation for inventing disruptive nanoscale technologies and providing outstanding scientific expertise and technical support. We are very excited about the technology's potential and believe in the company's vision."

The inventors have successfully demonstrated the viability of the technology and have received a National Institutes of Health Small Business Innovation Research (SBIR) grant to advance development of sequencing instruments for genomic, research, and medical facilities. ▲

UNM Innovator Receives the Presidential Award of Distinction

The University of New Mexico Office of the President announced that Distinguished Professor and STC Innovation Fellow Dr. Larry A. Sklar has received the 2016 Presidential Award of Distinction.

The award, established by UNM President Robert Frank in 2013, honors and recognizes outstanding career achievement, scholarly excellence, leadership in a profession, noteworthy public service and humanitarian endeavors by individuals within and outside the UNM community. Dr. Sklar received the award at the UNM Undergraduate Commencement Ceremony on December 16 at WisePies Arena.

Dr. Sklar is a distinguished and Regents' professor in the Department of Pathology at UNM's Health Sciences Center and is the director of UNM's Center for Molecular Discovery. He is a prolific inventor, having disclosed 61 inventions, received 36 U.S. issued patents, and has many pending patents while at the University of New Mexico in the areas of signal transduction, cell adhesion, leukocyte biology and high-throughput flow-cytometry technologies for molecular assembly and drug discovery. His technologies have generated to date 16 option and license agreements with four start-up companies and other pharma and biotechnology companies.

His high-throughput flow-cytometry technologies, called the HyperCyt® System, formed the basis of STC start-up IntelliCyt Corporation, a company Dr. Sklar co-founded to develop the technology. The sample-handling technology allows flow cytometers to screen tissue samples 30-40 times faster with greater accuracy and cost efficiency than standard cytometers without the HyperCyt® System.

In July, the company was sold to international pharma company Sartorius AG for \$90 million, representing the largest acquisition to date of a local start-up company spun out of UNM technology. The company will continue to operate independently at its Albuquerque-based facility as IntelliCyt, A Sartorius Company.

In his letter of support for Dr. Sklar's nomination, Dr. Richard Larson, executive vice chancellor for the UNM Health Sciences Center state:



Larry A. Sklar, Ph.D.

"The research performed at the Center for Molecular Discovery and under the direction of Dr. Sklar has had tremendous impact in the world of small molecule and drug discovery. He has created dozens of patents related to flow cytometry, which eventually evolved into a highly-complex, small molecule screening platform that is able to process more than 60,000 compounds per day. Many of these newly-identified molecules or repurposed drug candidates are being studied in animal and human models to determine if they may be used in the treatment of disease."

Speaking on behalf of the STC Board, who nominated Dr. Sklar, Chair Sandra Begay stated: "I want to praise the vision and persistence of Dr. Sklar who continues to expand the vision of drug discovery to save lives. I cannot think of a worthier candidate to receive the UNM Presidential Award of Distinction." ▲

UNM Inventor Elected National Academy of Inventors Fellow



Gabriel P. López Ph.D.

Dr. Gabriel P. López, vice president for research and professor of chemical and biological engineering at the University of New Mexico, has been named a 2016 Fellow of the National Academy of Inventors (NAI). The NAI announced today that it has chosen a cohort of 175 inventors from around the world for election as 2016 NAI Fellows.

Election to NAI Fellow status is a high professional distinction accorded to academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society.

With the election of the 2016 class there are now 757 NAI Fellows, representing 229 research universities and governmental and non-profit research institutes. The 2016 Fellows are named inventors on 5,437 issued U.S. patents, bringing the collective patents held by all NAI Fellows to more than 26,000.

Included among all NAI Fellows are more than 94 presidents and senior leaders of research universities and non-profit research institutes; 376 members of the three branches of the National Academy of Sciences; 28 inductees of the National Inventors Hall of Fame; 45 recipients of the U.S. National Medal of Technology and Innovation and U.S. National Medal of Science; 28 Nobel Laureates; 215 AAAS Fellows; 132 IEEE Fellows; and 116 Fellows of the American Academy of Arts & Sciences, among other awards and distinctions.

Dr. López was nominated by the STC Board of Directors for the national honor. On behalf of the STC Board, Chair Sandra Begay stated:

"Dr. López's research discoveries, outstanding inventions, and program leadership are all the more remarkable considering the many hats an academic researcher, inventor and administrator must wear. We are excited at the possibilities to come for UNM's research mission, its faculty and its students as he leads our efforts to achieve even greater levels of outstanding research and innovation. STC is very fortunate to work with such a remarkable inventor and honored that Dr. López has been chosen as a 2016 NAI Fellow."

Dr. López's advances in micro/nanomaterials and devices have led to innovations in biointerface engineering, biosensing for diagnostics and drug discovery, flow cytometry, bioseparations, drug delivery and antimicrobial coatings to disinfect medical devices, naval equipment and filtration systems. López holds 42 patents for his work at UNM, Harvard, and the University of Washington.

The 2016 Fellows will be inducted on April 6, 2017, as part of the Sixth Annual Conference of the National Academy of Inventors at the John F. Kennedy Presidential Library & Museum in Boston. U.S. Commissioner for Patents, Andrew H. Hirshfeld will provide the keynote address for the induction ceremony. ▲

See also the NAI press release at: http://www.prnewswire.com/news-releases/national-academy-of-inventors-announces-2016-fellows-300377099.html?tc=eml_cleartime

INNOVATE NEW MEXICO®

Discover *The State of Innovation*

Innovate New Mexico® Technology Showcase Highlights

Sandia Resort & Casino Golf Club was the site of the second statewide technology showcase held on October 11 and hosted by Innovate New Mexico®, the statewide collaborative technology-transfer program for New Mexico's research universities (UNM, NM State, NM Tech) and national labs (Sandia, Los Alamos, and Air Force Research Labs). The panoramic views of the majestic Sandia Mountains were matched by an impressive display of innovative technology presentations and homegrown start-up companies.

Approximately 250 registered attendees comprised of national companies and investors and local entrepreneurs, investors, and business professionals listened to technology pitches from faculty and lab inventors and connected with start-up companies and inventors for possible business opportunities during several networking sessions and an end-of-event reception.

The Innovate New Mexico® program, established in 2015, is essentially a network among the leading research institutions in the state that provides easy access for entrepreneurs, investors, and companies to New Mexico's research and technology opportunities, start-up companies, and economic development resources. The technology showcases, presented in the fall and spring, are but one example of what the budding program plans to offer to fulfill its vision to make New Mexico "The State of Innovation" by 2020.

Deputy Cabinet Secretary Barbara Brazil again gave welcome remarks from the New Mexico Economic Development Department.

"Innovate New Mexico highlights a unique ecosystem of innovation that creates diversity, which leads to a more robust economy. Innovation is stifled when we stay in silos but flourishes when we collaborate. We are reading in the media on a daily basis about how the New Mexico innovation economy continues to grow, helped this year by the New Mexico Technology Research Collaborative's grants to six start-up companies with follow-on investment, the JTIP job training program, and the new \$40 million Catalyst Fund that will soon be investing in New Mexico-based start-ups."

The technology showcase portion of the event consisted of 12 short presentations by inventors of technologies from UNM, NM State, NM Tech, and the Sandia, Los Alamos, and Air Force Research labs. A panel of "friendly sharks" comprised of local entrepreneurs and investors provided helpful feedback. Innovate New Mexico wishes to thank Lucrece Borrego (Senior Financial Analyst, Camino Real Capital Partners LLC), Charles Call (CEO, ActiveClean by Clean Spot), John Chavez (President, New Mexico Angels), Wayne Laslie (President & CEO, Zocere, Inc.), Mathis Shinnick (CEO, Allied Photon), and Loraine Upham (Executive Director, ABQid). Go to www.innovatenuewmexico.com/technologies/ to view the technology summaries.

During lunch, attendees were treated to a panel discussion on start-ups in New

Mexico. The panel of five New Mexico start-up CEOs discussed the challenges and advantages for start-ups in New Mexico and individual future plans for their companies. Jennifer Sinsabaugh, Center Director of the New Mexico Manufacturing Extension Partnership, moderated the discussion.



Dr. Cook Wesley from NM Tech presenting Santoro Block: The Next Generation of Green Products

Panel participants included Christopher Acton, VP for Operations and Services, RiskSense; R. Terry Dunlay, Founder, President & CEO, Intellicyt (A Sartorius Company); Hunter McDaniel, Founder & CEO, UbiQD, LLC; Murat Okandan, CEO & CTO, mPower Technology, Inc.; and Lucas Smith, Founder & CEO, EcoSeal. The companies represented all stages of growth from regulatory and product beta testing to strategic and customer partnership formation, to national and international sales expansion and acquisition.

Big challenges for start-ups in New Mexico continue to be available seed-stage funding and a trained technical work force. Big advantages, however, include business friendly programs such as tax credits, JTIP job training, LEDA, NMSBA, grants provided by the state, and the proximity to and close affiliation with the technology-transfer programs at the state's research institutions. The panelists praised the state's efforts to nurture the start-up ecosystem.

Several other start-up CEO's were on hand to showcase their companies and network with attendees, including New Mexico Start-Up Factory, Cylenta, Active Clean, Zocere, Inc., Biophagy, Enthentica, BioSafe, Avisa, UbiQD, EquiSeq, MEP, OptiPulse, and ElectroSeq.

The day ended with closing remarks by Carlos Gutierrez and Larry Alei. Mr. Gutierrez is a strategic alliances/innovation ecosystem specialist in the U.S. Department of Commerce's Minority Business Development Agency (MBDA). The MBDA is the only federal agency established solely to create jobs through the growth and global competitiveness of minority-owned businesses in the United States. MBDA coordinates and leverages public and private sector resources to provide access to capital, contracts and markets. Mr. Alei is a board member-at-large on the New Mexico Technology Research Collaborative.

Issued Patents (July 1, 2016 – December 31, 2016)

<p>System and Methods of Photon-Based Radiotherapy and Radiosurgery Delivery</p> <p>U.S. Patent No. 9,387,348 issued July 12, 2016 Inventors: Shuang Luan, Lijun Ma, Zhe Chen</p>	<p>Compounds for Use in Diagnosing and Treating Melanoma, Including Metastatic Melanoma and Methods Related to Same</p> <p>U.S. Patent No. 9,393,330 issued July 19, 2016 Inventors: Yubin Miao, Haixun Guo</p>
<p>Carbendazim-Based Catalytic Materials</p> <p>U.S. Patent No. 9,425,464 issued August 23, 2016 Inventors: Alexey Serov, Plamen Atanassov</p>	<p>Material Classification Fused with Spatio-Spectral Edge Detection in Spectral Imagery CHTM</p> <p>U.S. Patent No. 9,430,842 issued August 30, 2016 Inventors: Majeed Hayat, Sanjay Krishna, Sebastian Eugenio Godoy</p>
<p>Method and Apparatus for Fabrication of Controlled Chirp Gratings CHTM</p> <p>U.S. Patent No. 9,431,789 issued August 30, 2016 Inventors: Steven R. J. Brueck, Xiang He, Steve Benoit</p>	<p>Detection, Prevention, and Treatment of Anthrax and Other Infectious Diseases</p> <p>U.S. Patent No. 9,435,804 issued September 6, 2016 Inventors: Thomas Kozel, William Murphy, Suzanne Brandt, Bruce Blazar, Julie Lovchik, Peter Thorkildson, Ann Percival, Rick Lyons</p>
<p>iAnt Swarm Robotic Platform and Evolutionary Algorithms</p> <p>U.S. Patent No. 9,446,512 issued September 20, 2016 Inventors: Melanie Moses, Joshua Hecker, Kenneth Letendre, Karl Stolleis</p>	<p>System and Methods for Video Image Processing</p> <p>U.S. Patent No. 9,451,161 issued September 20, 2016 Inventors: Timothy Perez, Marios Pattichis, Yuebing Jiang</p>
<p>Methods of Using Isotopically Labelled Isoniazid for the Diagnosis of Mycobacterial Infections</p> <p>U.S. Patent No. 9,453,253 issued September 27, 2016 Inventors: Graham Timmins, Seong Choi, Zachary Sharp, Viorel Atudorei, Mamoudou Maiga, William Bishai</p>	<p>Cubic Phase, Nitrogen-Based Compound Semiconductor Films CHTM</p> <p>U.S. Patent No. 9,461,112 issued October 4, 2016 Inventors: Steven R. J. Brueck, Seung-Chang Lee</p>
<p>Radiolabeled Alpha-Melanocyte Stimulating Hormone Hybrid Peptide for Melanoma Targeting</p> <p>U.S. Patent No. 9,463,255 issued October 11, 2016 Inventor: Yubin Miao</p>	<p>Surface Plasma Wave Coupled Detectors CHTM</p> <p>U.S. Patent No. 9,466,739 issued October 11, 2016 Inventors: Steven R. J. Brueck, Seung-Chang Lee, Sanjay Krishna</p>
<p>Method and System for Feature Extraction and Decision Making from Series of Images CHTM</p> <p>U.S. Patent No. 9,471,974 issued October 18, 2016 Inventors: Sanjay Krishna, Sanchita Krishna, Majeed Hayat, Pradeep Sen, Maziar Yaesoubi, Sebastian Godoy, Ajit Barve</p>	<p>Signal Propagation Biomolecules, Devices and Methods</p> <p>U.S. Patent No. 9,476,090 issued October 25, 2016 Inventors: Carl Brown III, Steven Graves, Darko Stefanovic, Matthew Lakin</p>
<p>Protocells and Their Use for Targeted Delivery of Multicomponent Cargos to Cancer Cells</p> <p>U.S. Patent No. 9,480,653 issued November 1, 2016 Inventors: C. Jeffrey Brinker, Carlee Ashley, Xingmao Jiang, Juewen Liu, David Peabody, Walker Wharton, Eric Carnes, Bryce Chackerian, Cheryl Willman</p>	<p>WGM-Based Molecular Sensors CHTM</p> <p>U.S. Patent No. 9,482,608 issued November 1, 2016 Inventors: Ravinder Jain, Mani Hossein-Zadeh</p>
<p>Biomimetic Membranes and Methods of Making Biomimetic Membranes</p> <p>U.S. Patent No. 9,486,742 issued November 8, 2016 Inventors: Susan Rempe, C. Jeffrey Brinker, David Michael Rogers, Ying-Bing Jiang, Shaorong Yang</p>	<p>Dry Powder Inhaler with Flutter Dispersion Member</p> <p>U.S. Patent No. 9,492,625 issued November 15, 2016 Inventors: Hugh Smyth, Parthiban Selvam, Charles Truman</p>
<p>Compounds with Reduced Ring Size for Use in Diagnosing and Treating Melanoma, Including Metastatic Melanoma and Methods Related to Same</p> <p>U.S. Patent No. 9,493,537 issued November 15, 2016 Inventors: Yubin Miao, Haixun Guo</p>	<p>Cathode Catalysts for Fuel Cell Application Derived from Polymer Precursors</p> <p>U.S. Patent No. 9,502,719 issued November 22, 2016 Inventors: Alexey Serov, Barr Halevi, Michael Robson, Wendy Patterson, Kateryna Artyushkova, Plamen Atanassov</p>
<p>Immunogenic Respiratory Syncytial Virus Glycoprotein-Containing VLPs and Related Compositions, Constructs, and Therapeutic Methods</p> <p>U.S. Patent No. 9,511,135 issued December 6, 2016 Inventors: Bryce Chackerian, David Peabody</p>	<p>Cathode Catalysts for Fuel Cells</p> <p>U.S. Patent No. 9,515,323 issued December 6, 2016 Inventors: Alexey Serov, Barr Halevi, Kateryna Artyushkova, Plamen Atanassov</p>
<p>Low-Profile, High Tension Mesh Plate for Subcutaneous Fracture Fixation</p> <p>U.S. Patent No. 9,517,097 issued December 13, 2016 Inventors: Leroy Rise, Christina Salas, Aaron Dickens, Mahmoud Taha</p>	<p>Semi-Quantitative Lateral Flow Assays</p> <p>U.S. Patent No. 9,518,985 issued December 13, 2016 Inventor: Scott Sibbett</p>
<p>Growth of Cubic Crystalline Phase Structure on Silicon Substrates and Devices Comprising the Cubic Crystalline Phase Structure CHTM</p> <p>U.S. Patent No. 9,520,472 issued December 13, 2016 Inventors: Steven R. J. Brueck, Seung-Chang Lee, Christian Wetzel, Theeradetch Detchprohm, Christoph Stark</p>	<p>Spatio-Temporal Tunable Pixels ROIC for Multi-Spectral Imagers</p> <p>U.S. Patent No. 9,521,346 issued December 13, 2016 Inventors: Glauco Rogerio Cugler-Fiorante, Payman Zarkesh-Ha, Sanjay Krishna</p>
<p>Structure, Synthesis, and Applications for Poly (Phenylene) Ethynylenes (PPEs)</p> <p>U.S. Patent No. 9,527,806 issued December 27, 2016 Inventors: David Whitten, Kirk Schanze, Anand Parthasarathy, Eunkyung Ji, Motokatsu Ogawa, Thomas Corbitt, Dimitri Dascier, Ying Wang, Linnea Ista, Eric Hill</p>	<p>Methods to Introduce Sub-Micrometer, Symmetry-Breaking Surface Corrugation to Silicon Substrates to Increase Light Trapping CHTM</p> <p>U.S. Patent No. 9,530,906 issued December 27, 2016 Inventors: Sang Eon Han, Brittany Hoard, Sang M. Han, Swapnadip Ghosh</p>

game development. Another proposal was submitted, in partnership with local accelerator Creative Startups, to the Mayor's Prize competition for entrepreneurship. I am happy to report that the partners have won a \$50,000 Mayor's Prize award to create a boot-camp-style program for entrepreneurial students majoring in creative disciplines, such as fine arts, music, architecture, design, film, animation, and media, who want to start businesses.

Right now, the heart of the innovation district envisioned by Innovate ABQ is taking shape in downtown Albuquerque. As you may know, construction of the Lobo Rainforest Building is underway and by August STC and the Innovation Academy will be moving to new offices on the ground floor of the new building. The space is designed to increase collaborations for university inventors and entrepreneurs from around the state, with an important focus on UNM student inventors and entrepreneurs. Students will have more opportunities to collaborate with other inventors, entrepreneurs, and investors to commercialize their technologies and creative ideas.

STC and the Innovation Academy are also collaborating more with the Air Force Research Lab. The Lab will have designated technology-transfer offices at the Lobo Rainforest Building to take advantage of research collaborations and start-up company formation.

Students will have the opportunity to take classes, participate in events and live in apartments located on floors 2-6. STC's incubator, the Cecchi VentureLab, will have space to support research- and student-related start-ups. The new building will also have a Nusenda Credit Union office, café, and event space for technology showcases, seminars, internship fairs, and pitch competitions.

These co-locations and activities provide networking opportunities for students to connect with innovators and new companies. Student inventors and entrepreneurs will be a key ingredient in the special recipe that makes innovation districts work.

Lisa Kuuttila

Lisa Kuuttila
CEO & Chief Economic Development Officer
STC.UNM
kuuttila@stc.unm.edu

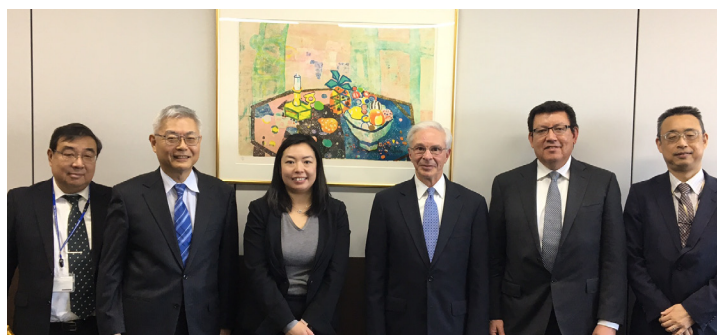
STC Undertakes Busy Fall Schedule of Activities in Japan

STC's international economic development activities were robust during the fall semester. University Ventures & International Engagements Manager Eri Hoshi presented to several Japanese universities, research organizations and government agencies interested in university technology transfer and commercialization and in developing innovation ecosystems. Audiences for the presentations and lectures included large groups of faculty, graduate students and undergraduates at the Research Administrator Annual Conference, the University of Tokyo Technology Licensing Organization (TLO), Kumamoto University, Shinshu University, the Society for Management of Intellectual Property, Osaka University, and Osaka Prefecture University.

She also attended several conferences including the Innovation for Cool Earth Forum, the Japan Agency for Medical Research and Development, Bio Japan, JST Fairs, and the OPU Silicon Valley live stream.

In December, Eri arranged meetings with several companies and agencies for Vice President for Research Gabriel López and SOE Dean Joseph Cecchi. Drs. López and Cecchi met with the Shimizu Corporation to discuss a joint research-collaboration project and the status of the smart grid project in New Mexico, and with Toyo Corporation to discuss investing in a joint research project and start-up companies. They also met with the Mitsubishi Research Institute on industry research collaboration and the organization's collaboration on the smart grid project. Other meetings included visits with Chairman Furukawa from the New Energy and Industrial Technology Development Organization (NEDO) to discuss the smart grid project and a southwest clean energy institute, and a visit with Vice Minister Maekawa from the Ministry of Education, Culture,

Sports, Science and Technology of Japan (MEXT) to discuss collaborating with Japanese industries and universities.



Left to right: Dr. Morozumi(NEDO), Chairman Furukawa(NEDO), Eri Hoshi, Dr. Joseph Cecchi, Dr. Gabriel P. López, Dr. Watanabe(NEDO)

Within the past six months, several agreements have been signed or are in progress with four Japanese universities:

- A general cooperation agreement between Mukogawa Women's University and UNM
- An MOU agreement between Kumamoto University and UNM (in progress)
- A patent brokerage agreement between Chiba University and STC for four solar technologies and three medical device technologies
- A patent brokerage agreement between Shinshu University and STC for life science technologies (in progress) ^

Rainforest Student Pitch Competition Draws Large Crowd for UNM Student Innovations

Six UNM student teams pitching ideas for innovative products and technologies were lucky winners at the UNM Rainforest Student Pitch Competition. Held at Bow & Arrow Brewing Co. on November 7, the event drew a large audience that packed the brew pub. The enthusiastic crowd listened to 90-second pitches from 10 team and individual student presenters and voted using a mobile app for the top five entries. Two teams tied in the vote count, leading to the awarding of a sixth winner.



Left to right, back row: Joseph Mulcahy, Taci Derden, Robert Malakhov, Patrick Johnson, Evan Deery, Bryce Keefer, Matt Drum, Trace Rucarean, Kyle Guin; front row: Ryan Mulcahy, Maria Oroyan, Katherine Brunner, Molly Schmeltzer

The event, the fourth student pitch competition at UNM, is co-hosted by STC and the Innovation Academy. The partners raised \$6,000 in sponsorships and donations, which were used as \$1,000 prizes awarded to each of the six winning ideas/technologies. See the following ten presenters and six winners.

Presenters:

- Joseph Mulcahy & Ryan Mulcahy (Anderson, undergraduates) – WhereU@ App, allows users to find friends, family and businesses in crowded or expansive places with beacons of light
- Matt Drum (Mechanical Engineering, undergraduate) – company developing new products for aging population
- Robert Malakhov (Nanoscience & Microsystems Engineering, graduate) – a method for regenerating cartilage in people with cartilage damage and disease - *winner*
- Taci Derden (Anderson, undergraduate) – Oz of Pr, a care package to prevent airborne illnesses when traveling on planes
- Patrick Johnson (Nanoscience, graduate) – yeast management and production company for breweries
- Maria Oroyan (Chemical & Biological Engineering, undergraduate) – Armis, jewelry with an easy-to-access defensive device when faced by an attack - *winner*
- Evan Deery and Bryce Keefer (Anderson, undergraduates) – company using virtual video format technology to create virtual reality real estate tours - *winner*
- Katherine Brunner and Molly Schmeltzer (Pre-Anderson, undergraduates) – animal-friendly cosmetic subscription service - *winner*
- Kyle Guin (Anderson, undergraduate) – Pencil-In, a new way to enter data into your mobile device calendar - *winner*
- Trace Rucarean (Liberal Arts, undergraduate) – \$ave \$quad, a social budgeting app - *winner*

STC and the Innovation Academy wish to thank sponsors Jaynes, Signet, Goodman Realty, Creative Start-ups, STC.UNM and Bow & Arrow (donated space) who helped make the evening such a success for the student entrepreneurs and inventors.

The next Rainforest Student Pitch Competition will be held on April 24, 2017. For more information, go to <https://stc.unm.edu/epc/>. ^

STC New Ventures Café Hosts Three Office Hours for Students



New Ventures Café, STC's free office-hours program for UNM faculty, staff, students, and CVL tenants, hosted three Friday morning sessions on September 30 and October 28, 2016 and January 27, 2017. The sessions were held in the CVL in partnership with SCORE and the New Mexico Angels, two organizations of successful business professionals, entrepreneurs, and investors who volunteer their time to help others become successful entrepreneurs. The mentorship program allows participants to test a business concept, build a business development roadmap, start, grow, and exit a business, learn the business of running a business, and expand business networking opportunities in one-on-one confidential discussions. A light

breakfast was provided for participants. See the "On the Horizon" events section for the next New Ventures Café. ^

Score: <https://albuquerque.score.org/>
New Mexico Angels: <http://www.nmangels.com/>



OPU Students Take Part in STC Internship Academy

Students and faculty from Osaka Prefecture University (OPU) visited STC during September as participants in STC's professional internship program.

The six students and one faculty member learned about STC's technology-transfer and commercialization program, how to develop an entrepreneurial mindset, and what it would take to spin out a new company from their research. Activities included training with STC staff, meetings with inventors, entrepreneurs, and investors, visits to UNM facilities and community entrepreneurial events, and participation in a pitch competition.

The visiting group included Yoshihiko Susuki, Assistant Professor in the OPU School of Engineering; Ayako Yano, School of Engineering, material science; Tomoya Nakamura, School of Engineering, physics; Yoshikazu Tanaka, School

of Engineering, applied physics; Yusaku Nishiuchi, School of Engineering, IT; Hiroyuki Hagiwara, School of Engineering, mechanical engineering (Osaka City University); and Naoya Takahashi, School of Engineering, mechanical engineering. [^](#)



OPU students visit Pajarito Powder

STC and Innovation Academy Offering New Program for Entrepreneurs

On January 27, STC and the Innovation Academy launched a new program for entrepreneurs. The Entrepreneurial Leadership Program (ELP) provides deep training to develop the managerial and leadership skills that make a good entrepreneur into a great entrepreneur.

The half-day session, held at STC, was presented by Dr. Robert DelCampo, Executive Director of the UNM Innovation Academy, Professor of Organizational Studies, and holder of the Rutledge Endowed Professorship in Management at the Anderson School of Management. Dr. DelCampo, whose teaching expertise is in organizational behavior and human resource management, has

had extensive experience in developing other creative programs, such as an innovative MBA curriculum at UNM and a very successful Hispanic Leadership Development Program in collaboration with the Albuquerque Hispano Chamber of Commerce.

Covered topics, included leadership theory (current trends and the state of the science); leading for change; creativity in leadership; assessing leadership strengths and weaknesses; developing a roadmap for continued development; and developing a support system with cohorts. [^](#)

student intern interview

Rachel Timmins, a December graduate of UNM's Anderson School of Management and former STC Intellectual Property (IP) Assistant, will be taking some solid communication, research, and computer skills with her as she meets her next opportunity.

STC hired Rachel as an STC innovation intern in 2015 and moved her into the IP assistant position shortly thereafter. Born in England, she moved to Albuquerque at the age of eight when her father, UNM Associate Professor Graham Timmins, joined the College of Pharmacy faculty. Dr. Timmins is a prolific UNM inventor and received the 2013 STC.UNM Innovation Fellow Award.

In 2012, she graduated from La Cueva High School and decided on UNM and a business degree for her postsecondary education. "UNM is affordable and the accounting professors (accounting is my concentration) have been very good. The business curriculum teaches many soft (interpersonal) skills and provides valuable career advising. Political science is my minor and I have really enjoyed these courses as well."

Since the age of fifteen, however, attending law school has been her goal. "I'm not sure what kind of law interests me. I've thought about the business, human rights and international law areas as possibilities. I found a constitutional law

class I took in my last semester fascinating."

Rachel learned about IP law from her Dad, which is what led her to STC. "Working at STC allowed me to see firsthand how the IP process works. It takes a crazy amount of work, time, and money to patent technologies. I also got a broad overview of the marketing process and gained some understanding of the technologies themselves." Rachel worked with the STC IP Coordinator in maintaining the IP files in STC's Sophia database. Her responsibilities included communicating with UNM inventors on office actions, doing reference searches, updating Sophia records and working with the Disclosures & Agreements Coordinator on newly disclosed technologies and invention reporting to iEdison.

Rachel's next goal is to take six months off to study for the LSAT. "I really want to be prepared and do well on the test. I'm hoping to attract some scholarship money for law school."

We wish her the best! [^](#)

Rachel Timmins
Innovation Intern





A Closer Look

Robert H. Nath

Member, Board of Directors, STC.UNM

Co-Founder and Chairman, Quasar International, Inc., Retired



mission to nurture innovation and catalyze economic development.

His professional career has included a remarkable array of professional accomplishments. He has worked for global giants in the construction and oil industries, served in the Department of Commerce under the Carter and Reagan administrations, and is an inventor, entrepreneur and investor in the world of technology start-ups. As an active STC board member who attends many STC events, Mr. Nath also shares his expertise as a member of the STC Co-Investment Committee and the STC Innovation Fellow Selection Committee.

After receiving his B.S. in mechanical engineering in 1959 from the University of Minnesota, Mr. Nath began a nearly 20-year career with Caterpillar Inc., working in new product development, international marketing management, sales management and corporate acquisitions. During his tenure, Caterpillar Inc. was recognized as one of the top three U.S. exporters. Today, Caterpillar Inc. is a \$47 billion company with 97,000 employees worldwide. He also served as Vice President of photovoltaic and other new technologies at Atlantic Richfield Company (ARCO).

Between his stints at Caterpillar and ARCO, Mr. Nath served as Deputy Assistant Secretary of Commerce in the Carter and Reagan administrations. In the latter, under Secretary of Commerce Malcolm Baldrige, he served as acting Assistant Secretary for International Trade Development. His responsibilities included expanding trade in eastern Europe, maintaining trade relations with the Soviet Union, and facilitating the development of U.S. trade with China. Malcolm Baldrige, instrumental in carrying out Administration trade policy in opening foreign markets for U.S. companies, was also a proponent of quality management. He drafted an early version of the Quality Improvement Act of 1987, which was renamed the Malcolm Baldrige National Quality Award by Congress. The award is the highest level of national recognition for performance excellence that a U.S. organization can receive.

As inventor, entrepreneur and investor, Mr. Nath's accomplishments are no less impressive. He was the Founder, Chairman and technology inventor of Cycleclean, Inc., a venture-financed company focused on recycling asphalt pavement material with minimal pollution. Mr. Nath holds six patents in the area of recyclable asphalt pavement material that are the basis for Cycleclean, Inc. The proprietary technology, which combines warm air and microwave heating, was used in Cycleclean plants in the U.S. and The Netherlands and produced over two million tons (~\$40 million) of hot asphalt paving material using over 90% recycled pavement.

In 1992, Mr. Nath co-founded Quasar International, Inc., a company based in Albuquerque that developed and manufactured resonance-based nondestructive test systems. The company's product is based on a resonant vibration frequency measurement technique developed at Los Alamos National Laboratory. Mr. Nath was responsible for commercializing the systems for use in factories and his co-founding partner was responsible for developing the electronics and advanced mathematical analysis techniques underlying the systems.

The mathematical analysis techniques were used to spin off from Quasar a biotech company, based in Albuquerque and Vista, California, called Exagen Diagnostics, Inc. Exagen develops and manufactures genomic marker and drug monitoring diagnostic tests for autoimmune diseases such as lupus and rheumatoid arthritis. Another spin-off, Albuquerque-based Vibrant Corporation, has advanced and improved the original Quasar-developed technology and is making advances in applying the technology to aero applications worldwide. Vibrant is currently expanding into other industrial segments in the U.S. and overseas.

In 2007, Magnaflux, a division of Illinois Tool Works, a \$16 billion company operating in 52 countries that develops engineered products and specialty systems, acquired Quasar.

As a serial entrepreneur and investor, Mr. Nath has extensive business expertise in evaluating technologies suitable for commercialization and investment. He has personally co-funded and developed several technologies, commercialized some, raised funds for venture start-ups, and successfully sold one of his own companies. Mr. Nath retired from Magnaflux in January 2012 but remains active in other technology development areas.

STC's Co-Investment Fund Committee provides early stage funding for UNM start-ups. As a member of the committee who understands what it takes to grow a company and transform a technology into a product, what is the most important thing first-time entrepreneurs looking for funding need to know?

The longer the founders can use their own time and money to advance the development of their invention the greater chance they have of understanding and demonstrating its potential and thus, maximizing their retained ownership share in their new company.

You are an experienced entrepreneur and investor. What has changed over the years for entrepreneurs and investors?

The fundamental factors remain the same. New ventures are a high-risk, gut-wrenching, anxiety-producing activity for the founders and the investors. Only the thrill of achievement and winning makes it worthwhile. ▲

Jovan R. Heusser

STC Director of Commercialization



Meet Jovan Heusser, the director of commercialization at STC.UNM. She joined STC as a commercialization specialist in March 2006 after completing an internship with the organization as an undergraduate student. With bachelor's degrees in biology and communications from UNM, she continued her education, while working full-time at STC, and received her MBA with a concentration in entrepreneurial finance from UNM's Anderson School of Management.

Her interest in university technology transfer grew out of an interest in stem cell research and her mission to find regenerative treatments for people living with paralysis. Her sister, a Paralympian gold medal winner and paraplegic, was her inspiration. "As an undergraduate biology student, I worked in a neuroscience lab at UNM. After a time, I realized I was more business-transaction oriented. It takes a long time to get drugs to market and I could see the value and need to work on the business side of that process. My PI actually suggested that I look into technology transfer. It was a natural fit."

Jovan manages inventions from all UNM departments, including the UNM Health Sciences Center, the School of Engineering, and the UNM Cancer Center. That is about 775 open and active UNM technologies and more than 500 of them available for licensing right now. Jovan is responsible for invention disclosures, intellectual property, licensing and commercialization for UNM inventions and works closely with the STC innovation staff and outside patent attorneys to assist her in this role. She supervises the intellectual property coordinator, the innovation specialists in engineering and computer science, the disclosure and agreements coordinator, and the marketing operations coordinator.

"The biggest part of my job is closing deals, which means we've spun out a new company from UNM technology and/or licensed it to established companies," she explains. "I really enjoy the variety of tasks involved in negotiating the agreements. I do a lot of orchestrating to make that happen."

Her nickname at STC is the closer for her success in closing deals (54 license/option agreements last year), but she's also the conductor too, the orchestrating hub that information passes through to her innovation staff who perform critical parts of the technology transfer and commercialization process. Every part of the process—from disclosing the invention, to protecting it with patents, to negotiating and crafting licensing agreements—

has to be done right for the deal to go forward.

Her kind of work takes tremendous multitasking skills and attention to detail because the process is complex. Evaluating the patentability of the newly disclosed invention and deciding to file a patent begins the journey of ultimately transferring the technology to the marketplace. At the same time, the invention is also being evaluated and marketed for licensing, start-up and funding opportunities.

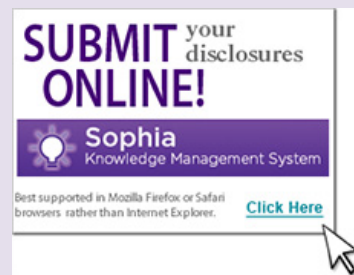
Jovan is also a natural teacher when it comes to training her team but she sees it as a co-learning experience. "Really, you know, we learn together because in technology transfer every situation is intricate and different in some way."

Jovan remains passionate about her job. "There are so many great technologies at UNM and our job is to find and create the companies that can develop them for public benefit and economic growth. I feel personally invested in the start-ups we create and admire the CEO's, investors and inventors who invest their money, time, and creativity in developing some amazing inventions. I am cheering so hard for their success!"

"The most important advice I can give to UNM inventors, especially new inventors, is to save your intellectual property (IP) rights by working with STC to file a patent application first before sharing anything about your invention with the public. If you lose your IP rights by not protecting them, your technology might never get to market." ^

To learn more about technology-transfer through the STC outreach program for faculty and students, contact Jovan Heusser at jheusser@stc.unm.edu.

Visit the STC website for more information on when to disclose and the commercialization process at <https://stc.unm.edu/inventors/>.



On the Horizon

Always see the latest events by visiting:
www.stc.unm.edu/events

NEW VENTURES CAFÉ—FEBRUARY 24 (9:00am-12:00pm)

SCORE mentors and New Mexico Angels members will be available for one-on-one, confidential discussions and mentoring to inventors, students, and start-up companies. Coffee and light breakfast provided. Subsequent café hours occur the last Friday of each month. To register, visit: <https://NewVenturesCafe.eventbrite.com>.

2017 INNOVATION AWARDS DINNER—APRIL 4 (5:00pm-7:30pm)

You are invited to celebrate with us as we recognize University of New Mexico faculty, staff, and students who have received issued patents and registered copyrights/trademarks from February 23, 2016 through February 28, 2017. Hors d'oeuvres & plated dinner will be served. For full details and to RSVP, visit <https://InnovationAwards2017.eventbrite.com>.

THE ROLE OF PATENTS IN REPURPOSING AND RESCUING OF OLD DRUGS—APRIL 13 (12:00pm-1:00pm)

Sponsored by STC and The Center for Innovation in Health and Education. Kenneth A. Weber, PhD, JD, Partner at Kilpatrick Townsend, gives a 40 minute presentation that defines the role that patents play in protecting drug inventions. For location and to register, visit: <https://stc.unm.edu/event/the-role-of-patents-in-repurposing-and-rescuing-of-old-drugs/>.

INNOVATE NEW MEXICO® TECHNOLOGY SHOWCASE —APRIL 18 (8:00am-4:00pm)

This statewide, special collaborative event will highlight research and technology opportunities, start-up companies, and economic development resources from the leading research institutions in the state of New Mexico. To register and make hotel reservations, visit www.innovateNewMexico.eventbrite.com.

RAINFOREST STUDENT PITCH COMPETITION —APRIL 24 (5:30pm-7:30pm)

STC.UNM and the UNM Innovation Academy invite you to this community initiative where aspiring student entrepreneurs will present their innovative ideas in 60-90 second presentations. Visit www.RainforestPitch.eventbrite.com for more information.

STC and Innovation Academy Internship Fair Continues to Draw Students

STC and the Innovation Academy co-hosted two internship fairs on August 30, 2016 and January 24, 2017 in the STC Cecchi VentureLab (CVL) at STC. The semester events are an opportunity for UNM students to mix and mingle with start-up and entrepreneur-friendly companies who are looking to hire interns. Start-ups from the CVL,

the ABQid and SFid incubators and other companies were present to chat with students, receive resumes, and enjoy refreshments. The August fair drew more than 100 students and 16 companies. Innovation Academy students can earn credit for attending the internships. ▲

STC Staff Update

Recent personnel changes at STC reflect the organization's commitment to its core values of adaptability and balance. By embracing change and supporting individual growth, we believe we are more effective in our work and increase everyone's sense of well-being. Effective March 1, University Ventures & Engagements Manager Cara Michaliszyn will be moving to a half-time position at STC. Accounting Coordinator Laura Meurer will take on duties as the University Ventures & Engagements Specialist. Cara will manage the Co-Investment Fund, social media, the STC website, and IT matters and Laura will manage the EDF, EDC, and other economic development events. STC intern Savannah Romero will assume Laura's duties as the Accounting Coordinator.

Building a Rainforest in the Desert is a publication of STC.UNM, produced bi-annually at the beginning of the fall and spring semesters for the UNM and business communities.

Editor: Denise Bissell (dbissell@stc.unm.edu)

Designer: Arlene Mirabal (amirabal@stc.unm.edu)

Staff Directory

Lisa Kuuttala
CEO & Chief Economic Development Officer
kuuttala@stc.unm.edu • 505-272-7905

Denise Bissell
Executive Assistant & Communications Specialist
dbissell@stc.unm.edu • 505-272-7310

Melissa Castillo
Innovation Assistant
mcastillo@stc.unm.edu • 505-277-0608

Matthew Davis
Intellectual Property Coordinator
mdavis@stc.unm.edu • 505-272-7890

Alicia Earl
Disclosures & Agreements Coordinator
aearyl@stc.unm.edu • 505-272-8774

Preston Hendrix
Controller
phendrix@stc.unm.edu • 505-272-7909

Joan Heusser
Director of Commercialization
jheusser@stc.unm.edu • 505-272-7908

Eri Hoshi
University Ventures & International Engagements Manager
ehoshi@stc.unm.edu • +81-80-4028-9203

Laura Meurer
University Ventures & Engagements Specialist
lmeurer@stc.unm.edu • 505-272-7900

Cara Michaliszyn
University Ventures & Engagements Manager
cmichaliszyn@stc.unm.edu • 505-750-7592

Arlene Mirabal
Marketing Operations Coordinator
amirabal@stc.unm.edu • 505-272-7886

Amber Ortega
Office Administrator
aortega@stc.unm.edu • 505-272-7900

Savanah Romero
Accounting Coordinator
sromero@stc.unm.edu • 505-272-7250

Briana Wobbe
Innovation Specialist
bwobbe@stc.unm.edu • 505-272-7912

Office: 505-272-7900

Fax: 505-272-7300

Web: www.stc.unm.edu

Board of Directors

Ms. Sandra Begay
Chair

Ms. Elizabeth (Lisa) J. Kuuttala
CEO & Chief Economic Development Officer

Ms. Terri L. Cole
Vice Chair

Dr. Joseph L. Cecchi
Vice Chair

Dr. John H. Stichman
Secretary and Treasurer

Dr. Chaouki T. Abdallah

Dr. Thomas Clifford

Dr. James D. Cramer

Dr. Robert H. Fisher

Mr. J.E. (Gene) Gallegos

Ms. Maria Griego-Raby

Mr. David W. Harris

Mr. James H. Koch

Dr. Richard S. Larson

Mr. Terry Laudick

Dr. Gabriel P. López

Dr. Gregg L. Mayer

Ms. Cindy McGill

Mr. Robert H. Nath

Dr. Eric R. Prossnitz

Dr. Alton D. Romig, Jr.

Dr. Paul B. Roth

Ms. Kimberly C. Sawyer

Dr. John C. Stormont

Mr. Pedro F. Suarez

Mr. Gary Tonjes

Mr. Charles I. Wellborn

Dr. Craig G. White