Greetings to the UNM community. As the UNM spring semester moves forward, so do two new partnerships at STC.

The Air Force Research Laboratory (AFRL) is the Air Force’s science and technology arm, headquartered at Edwards AFB in California with several national and international labs, each specializing in developing technologies for different industry sectors. AFRL-NM specializes in technologies for space vehicles and directed energy (i.e., lasers, situational awareness and high-power electromagnetics). AFRL – NM’s Technology Engagement Office focuses on transferring AFRL technologies into the commercial market and identifying opportunities for collaboration.

Under the leadership of Matt Fetrow, Director of AFRL-NM’s Technology Engagement Office, the organization moved to the Lobo Rainforest Building in August to facilitate closer ties to the business community for commercialization opportunities and to collaborate more closely with STC. An important part of the move coincided with a new partnership agreement that has STC training engagement office staff and AFRL scientists and engineers in technology commercialization. STC staff are busy providing best-practice training in how to protect and manage intellectual property, how to market and license technologies, how to pitch to investors and companies, and how to spin out startup companies. Alongside the training, STC is also directly marketing AFRL technologies and reaching out to investors and entrepreneurs for licensing and startup opportunities. AFRL research and collaboration on solar cells with UNM Professor Sang M. Han recently led to new IP and a new startup company, Osazda Energy, LLC. The company is commercializing a new composite material for solar cells.

The new NSF-funded I-Corps (Innovation Corps) program at the LRB is a partnership between STC and the Innovation Academy. A cohort of 10 commercialization teams recently completed the program’s 10-week entrepreneurial training during the fall semester. Fifty percent of the teams are moving forward with a startup company. STC/IA staff are gearing up for another 10 teams for the spring semester. Each team consists of a UNM faculty member, student, and business mentor who are developing UNM STEM-related technologies.

Participants took part in nine classroom sessions and complete out-of-class assignments. Between classroom sessions, teams conducted entrepreneurial fieldwork and reported on their progress. Key (continues on page 7)
Currently, railroads carry 40% of U.S. freight tonnage. Infrastructure systems are aging, and demands are increasing. Maintaining adequate track capacity to address expanding passenger and freight needs is one of the largest challenges in creating a competitive rail network. The demand for U.S. freight railroads will double over the next 20 years and the existing network will exceed its capacity by 2035. The U.S. has nearly 100,000 railroad bridges with more than half over 100 years old. Since resources are limited, railroads are interested in using new technologies that can collect information about their infrastructure to make regular, cost-effective and accurate decisions about maintenance, repair and replacement (MRR).

Displacement of railroad bridges under service loads is an important parameter in evaluating bridge condition and performance. However, measuring bridge responses in the field is often expensive and labor intensive, sometimes even not possible due the difficulty of being near the bridge when the train is crossing. The high-cost and unreliable nature of visual inspections is not effective for monitoring the dynamic behaviors of a railroad bridge in the presence of train loadings. Other inspection approaches often use wired sensing to collect sensor measurements. Storing the data costs about $5,000 (USD) per sensing channel and can require high labor costs as well. Efficient Wireless Intelligent Sensors (LEWIS) could be the answer to meeting future demand for freight railroad MRR that provides low-cost, accurate, efficient, and safe traffic operations.

Assistant Professor Fernando Moreu and Postdoctoral Fellow Ali Ozdagli from the Department of Civil Engineering have developed cost wireless sensing platform technology to compute the dynamic transverse displacements of railroad bridges under dynamic loads in real time. This sensing platform is an open-source electric ecosystem and combines inexpensive microcontrollers, wireless transmission modules and accelerometers to measure bridge vibrations that compare favorably to commercial accelerometers but are sixty times cheaper. The technology also could be used for other critical infrastructures, such as highway bridges, wind turbines, transmission towers, oil and natural gas pipeline networks, and civil structures during earthquakes and other natural disasters. The inventors taught high school students how to build the technology last summer and are teaching UNM undergraduate and graduate students enrolled in the department’s structural dynamics course this semester. In February, they taught a class on how to build the technology at the International Modal Analysis Conference (IMAC) to a group of twelve professionals from around the world.

Assistant Professor Fernando Moreu and Professor Mahmoud Taha from the Department of Civil Engineering have developed a system for assessing and monitoring the condition of railroad bridges using Unmanned Aerial Vehicles (UAVs) and lasers. The automated system allows inspectors to collect real-time structural displacement from remote and inaccessible locations. This innovative approach is being developed to integrate both bridge performance (displacement) and bridge condition (inspection) remotely in areas where the bridges are not easily accessible. The inventors developed the system at UNM last year, and tested it at the Albuquerque Balloon Fiesta [https://youtu.be/VHEt2gI9WwC]. The technology also could be used to provide warnings to emergency management services and to identify and prioritize potential weak links in the critical rail infrastructure network for MMR. Additional support from their funding agency includes the implementation during real train crossings over railroad bridges in the field.

Dr. Moreu will be presenting the UAV laser technology at the upcoming Innovate New Mexico Technology Showcase on May 1. See event details at innovate-new-mexico.eventbrite.com.
Nanotechnology Stimulates Immune System to Kill Cancer Cells

INVENTORS:
Rita Serda, PhD, Research Assistant Professor
Department of Chemical & Biological Engineering
The University of New Mexico

Ismail Meraz, PhD, Senior Research Scientist
MD Anderson Cancer Center

The goal of cancer immunotherapy is to boost or restore immune function for effective recognition of antigens associated with aberrant cells. The range of immunotherapy approaches is broad and includes antibody therapy; cytokine delivery to stimulate a passive immune response; ex vivo stimulation of autologous (one’s own) immune cells that are subsequently administered to the patient; the use of toxic chemotherapy adjuvants (enhancers) for stimulating an immune response; and formulations with antigens combined with alum, emulsions, liposomes, immune stimulating complexes, or polymeric nanoparticles.

Nanotechnology, the science of using and creating naturally occurring and engineered particles one billionth of a meter in size, have numerous applications in many fields today, but its application in the field of medicine could be the key to curing cancers at the genetic level. Within the last decade, the tiny structures have shown their promise as nanocarriers of drugs that are able to precisely target specific diseased cells and avoid damage to healthy cells.

The commonly used vaccine adjuvant alum, thought to function as a depot for sustained antigen release, induces cytotoxic effects leading to the release of uric acid and recruitment of immune cells to the site of injection. Alum favors T helper 2 (Th2) immune responses, which induce B cells to produce neutralizing antibodies. However, effective cancer immunotherapies require Th1 responses to support cell-mediated immunity leading to clonal expansion of cancer-specific effector T cells. Similar to alum, cationic liposomes have inherent cytotoxicity, inducing cell death and stimulating immune cell infiltration to the site of injection or accumulation. However, in contrast to alum, cationic liposomes support Th1 immune responses.

One advantage of liposomes is the ability to incorporate MPL into the lipid bilayer, providing surface presentation of the ligand for engagement and activation of receptors present on the surface of antigen presenting cells. Previous research has shown that MPL-liposomes suppress tumor growth in a 4T1 immune competent murine model of breast cancer, unlike an equivalent dose of free MPL. The cytotoxic nature of the cationic nanoparticles liberates endogenous tumor antigens that create an array of epitopes for immune recognition, supporting the production of cancer-specific cytotoxic T cells.

Research Assistant Professor Rita Serda from the Department of Chemical & Biological Engineering and Senior Research Scientist Ismail Meraz from the MD Anderson Cancer Center have created nanoparticle vaccine formulations that overcome current vaccine limitations by developing compositions comprising positively-charged, cytotoxic nanoparticles loaded with immune modulators that support anti-cancer therapeutics. The technology induces cancer cell death following direct injection of cationic liposomes to populations of cancer cells and stimulates enhanced activation of dendritic cells and cancer-specific immune responses, which further increases cancer cell death. This technology represents an important advance in the area of cancer immunotherapeutics through elicitation of Th1 immune responses.

Background image depicts cancer cells (white) being attacked by two T cells (red)

Two immune cells present in a mouse lymph node
Enthentica, Inc. Developing Technologies That Offer State-of-the-Art Cybersecurity

Local startup Enthentica, Inc. (enthentica.com), is taking a new approach to developing cybersecurity technology that meets the challenges of the Internet of Things (IoTs), where more and more devices are connected to each other. The proliferation of Internet-connected (and cloud-connected) physical devices such as smart phones, vehicles, home automation, security systems and anything else embedded with electronics, software, and sensors, exposes what were once secure environments to new dangers. These devices are often poorly protected and may be hacked by undetected adversaries who pose as authorized members of the network in order to insert malicious software and steal information.

The company has taken an exclusive license with STC.UNM (STC), UNM’s technology-transfer and economic-development office, for a hardware encryption technology created at UNM by Professor Jim Plusquellec and his team in the Department of Electrical & Computer Engineering. Dr. Plusquellec, an expert in the development of hardware-embedded security technologies, is also the chief technology officer at Enthentica.

“We are highly encouraged by all the recent interest in Enthentica’s PUF technology, particularly from government agencies and contractors who now realize what we’ve known all along, that our technology is vastly superior to anything that currently exists in the marketplace,” he stated.

The inventors have created the next-generation physically unclonable functions (PUF) technology for field programmable gate arrays (FPGA). Called the HELP (Hardware-Embedded deLay) PUF, the technology is based upon measuring path delay variations in silicon chips to create unique, stable, and random bit strings (a sequence of binary digits, or bits) of any length.

FPGAs are the integrated circuits on silicon chips that are configurable by a customer for a specific task after the chip has been manufactured. PUFs are the security functions that can be embedded directly into manufactured FPGAs by the user or in legacy systems as a firmware update. They serve as digital fingerprints and are based on unique, natural, physical variations in manufactured silicon chips, making it possible to differentiate one chip from another. The HELP PUF is foundational in establishing the Root of Trust based on unique chip identifiers, or keys, to support authentication and encryption functions essential in preventing hackers from tampering with the hardware.

Formed in 2016 by the New Mexico Angels (NMA), Enthentica is funded by NMA’s Start-Up Factory Fund and local angel investors. The Fund focuses on bringing technologies developed at the state’s research universities and federal labs to market. Enthentica has market-ready product and has been building interest in the technology at trade shows and Innovate New Mexico tech showcases. CEO Charles Mendez, an experienced entrepreneur who is also the long-time CEO of two other private companies, leads Enthentica.

“No one day passes,” he said, “without reading of another breach of a once trusted environment using highly sophisticated attack mechanisms that are challenging the very limits of current security systems. Leaders in security at the federal level have now placed securing hardware in microelectronics a top priority and Enthentica, with cutting-edge technology developed by Dr. Plusquellec, is uniquely positioned to capitalize on these developing opportunities. Our company serves as a model for real public-private innovative collaboration through the work of STC and the private investment community in New Mexico to drive entrepreneurial job growth.”

The HELP PUF technology has several advantages over current approaches. The key is not burned into the FPGA and is not stored in Non Volatile Memory (NVM), making it impossible to steal or clone, and ensuring that each device can be traced from supply chain to installation. It also consumes less power, can generate an unlimited number of bitstrings, is resilient against model-building attacks, and is small enough to be easily integrated into products. The HELP PUF technology is, as the company tagline says, “security at the core.”

HELP PUF has wide and potentially unlimited applications to provide a single solution not only for the IoT consumer market but for the IIoT (Industrial Internet of Things) market as well, in areas such as aerospace, defense, automotive, critical infrastructures, data centers, communications, medical healthcare, and radio frequency tags and readers.

“Development of next generation hardware security technologies are needed now more than ever in the connected world we live in,” stated STC CEO Lisa Kuuttila. “We believe that Enthentica is developing a disruptive technology that is answering that need and are excited that the company is providing product and continuing to innovate.”

Charles E. Mendez, Jr. 
Chief Executive Officer, Board Member

James Plusquellec 
Chief Technical Officer
One of the busiest student entrepreneurs at UNM lives, learns, and works at the Lobo Rainforest Building. Already the founder and CEO of two startup companies—Pencil-In and Shutter Bombs—you can often find Kyle Guin working in his office or chatting with other entrepreneurs at STC’s business incubator, the Cecchi VentureLab. Or, he may be on his way down the hallway to a class at the Innovation Academy, then over to classes on main campus, then home to his apartment upstairs at the Lobo Rainforest Building for food, study and sleep.

A homegrown entrepreneur from Aztec, New Mexico, Kyle is a junior in UNM’s Liberal Arts & Integrative Studies program, pursuing a Bachelor’s of Liberal Arts degree. The multidisciplinary major allows students to design their own degree plan from courses across the campus and apply what they’re learning in fieldwork. His focus areas are marketing, computer science, and entrepreneurship.

“Somehow I went from selling candy bars out of a backpack in middle school to owning a tech company at the age of 20. My life has been a crazy journey, but I have now landed in Albuquerque, New Mexico, where I am attending the University of New Mexico and studying marketing, entrepreneurship, innovation, computer science, and everything in between. I am a firm believer that the best way to learn something is just go out and do it; that’s why I founded my tech company Pencil-In in October of 2016 and in less than a year we launched our first product in September of 2017. In our first couple of weeks, we fought our way to #38 on the top paid app in the business category. We aren’t a perfect company but we are learning and growing everyday as I do as a person.”

Kyle has pitched Pencil-In (pencil-in.com) at two STC/Innovation Academy Rainforest Pitch Competitions and won $1,000 in prize money that has helped him to continue to develop the software. Pencil-In is a mobile app that takes a photo of printed schedules and events and instantly adds them to your phone calendar. Pencil-In is available on Apple’s App Store. Recently, he won $1,000 in prize money for his second startup, Shutter Bombs, at the December Rainforest Pitch Competition. Shutter Bombs is a supplier of colored smoke bombs for photographers and videographers (shutterbombs.com).

The I-Corps program at the Rainforest Building has proven to be another opportunity for entrepreneurial training. In October, Kyle and Pencil-In were one of 10 UNM projects chosen to participate in the inaugural fall semester cohort. The 10-week course provides funding, experienced mentors, and collaboration to first-time student and faculty entrepreneurs.

Kyle has been featured in several local news stories but most recently was part of a PBS documentary on New Mexico’s young entrepreneurs. You can find his interview on the PBS News Hour site at https://www.pbs.org/newshour/show/new-mexico-invests-in-young-entrepreneurs-to-kickstart-its-sluggish-economy.

In September, Kyle became the Lobo Rainforest Student Ambassador for the Innovation Academy and STC. His job is the help the two organizations to build a brand for the Lobo Rainforest Building and its programs, and to spread the word among UNM students that living, learning and working at the LRB could be the unique experience they are looking for.

If you would like to find out more about the Lobo Rainforest Building, contact Kyle at Kyle@pencil-in.com. And visit the LRB website at loborainforest.com.
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fieldwork included customer research and interviews to help commercialization teams understand the needs of their targeted industries in order to focus their technologies on market demand. Each team receives up to $3,000 to support these early-stage entrepreneurial activities that also included attending additional programs and creating prototypes.

Teams also had access to resources and co-working space at the STC Cecchi VentureLab (located at the Lobo Rainforest Building), had access to experienced STC entrepreneurial mentors and had opportunities to network and collaborate with other researchers and entrepreneurs.

The teams worked on the following student and faculty inventions:

- an app to instantly turn photos of things like course schedules and events into files for programs on mobile devices
- an artificial intelligence platform that recognizes feelings and emotions in language
- a novel shower chair for people with disabilities or injuries
- an inflating and deflating bed pad to relieve pain in pressure points
- an insulin delivery system for painless drug injection
- a feeding tube insertion device to avoid patient injury
- a remote-sensing system for continuous rail road and bridge inspection
- an autonomous drone for insecticide application in remote areas
- a new method to bind bamboo in building construction
- software to improve video streaming quality

The program, funded at $443,631 for five years by the NSF, encourages even greater collaboration between academia and industry and provides highly effective training for students and faculty inventors to really understand innovation and entrepreneurship so they can move their technologies toward new company formation, licensing, strategic partnerships, and bigger private and public funding opportunities.

**STC and UNM Innovation Academy Awarded NSF I-Corps Site Grant**

STC.UNM (STC), UNM’s technology transfer and economic development arm, and the Innovation Academy (iA), UNM’s innovative program for entrepreneurial students, announced that they have been awarded a National Science Foundation (NSF) I-Corps Sites grant for $443,631. The five-year grant will fund new programs and expand existing ones developed by the two organizations.

The NSF awarded the grant under its Innovation Corps - National Innovation Networks Sites Program, created to build a sustainable ecosystem that successfully commercializes innovations from NSF-funded research through new company formation and entrepreneurial training for scientists and engineers. In 2011, the NSF launched a very successful pilot program and developed a curriculum based on the lean start-up theory that is the origin of the I-Corp program.

Co-PIs on the grant, iA Executive Director Rob DelCampo and STC CEO Lisa Kuuttila are thrilled to have received the award for their proposal, entitled “University of New Mexico Lobo Rainforest I-Corps Site.”

“UNM is poised to greatly expand entrepreneurial training through this award,” said Dr. DelCampo. “It’s going to encourage even greater collaboration between academia and industry and provide highly effective training for students and faculty to really understand innovation and entrepreneurship.”

Added Lisa Kuuttila, “We are a first-time (type I) awardee of an I-Corps grant. The grant could not have come at a better time for STC and the iA as we co-locate at the Lobo Rainforest Building at Innovate ABQ. We will be able to provide seed funding and resources for more university inventors to move their technologies toward new company formation, licensing, strategic partnerships, and bigger private and public funding.”

The grant partners will form a management team to oversee the project’s day-to-day operations, fiscal management, and team development.

The core of the STC-iA Rainforest I-Corps program will focus on recruiting individual commercialization teams comprised of a PI (faculty, postdoc, or student), an entrepreneur, and a mentor, who will be seed funded and supported to develop an idea, project, or research in a STEM (science, technology, engineering, mathematics) area supported by the NSF. Student and postdoc PIs will work with a designated academic lead. The program will focus also on recruiting a mix of faculty, undergraduate and graduate students, postdocs, and women in STEM and other underrepresented minorities for the program.

Request for proposals will be issued twice each year for selection of 10 teams from each cohort for a total of 20 team proposals in the first year. The number of teams chosen will increase incrementally each year over the five-year program period. A committee of UNM, STC, and business community members will evaluate the proposals for the winning applications.
Innovate New Mexico, a network of leading technology-transfer organizations, held its fourth event showcasing innovative technologies from the state’s research universities and national labs.

The October 17 gathering at the Sandia Golf Club in Albuquerque featured 12 technology pitches by inventors from the University of New Mexico, New Mexico State University, New Mexico Tech, Sandia National Labs, Los Alamos National Lab, and the Air Force Research Lab to a crowd of 150 investors, entrepreneurs, industry reps, staff members from all four of the New Mexico congressional offices, and local business members.

The day’s events included welcoming remarks from Matthew Geisel, cabinet secretary of the NM Economic Development Department, and keynote remarks from Louis Berneman, founding partner of Osage University Partners. Osage invests exclusively in university and research institution technologies, and has $315 million under management with 93 member institutions. The venture capital firm has formed three funds, invests across all stages of technology development and focuses on launching high-quality startups by identifying high-quality management teams.

The showcase also included exhibit space for 17 New Mexico startup companies and business organizations.

Presenters and exhibitors had ample networking sessions to talk with company technology scouts for possible business opportunities.

University and lab inventors pitched the following technologies to the crowd and panel of local sharks who asked market and commercialization questions and offered feedback:

- Optical Rubidium Atomic Frequency Standard, Kyle Martin (AFRL)
- Flow Cytometry: New Time-Dependent Technologies, Jessica P. Houston, PhD (NMSU)
- A Solution for Drug Resistant Skin Infections and Wounds, Danielle Turner, PhD and Snezna Rogelj, PhD (NM Tech)
- Optimized Surface Dimpling for Commercial Vehicles, Aircraft, and Energy Applications, Sal Rodriguez, PhD (Sandia Labs)
- Transgenic Approaches to Improving Crop Plants—Increasing Biomass and Yields, Champa Gopalan, PhD (NMSU)
- Crack-Tolerant Advanced Metallization for PV, Sang Han, PhD (UNM)
- Compact Environmental Anomaly Sensor, Lt. David Stiles (AFRL)
- Internet for Everyone Using Air-Buoyant Vessels, Miles Beaux, PhD (Los Alamos)
- High Sensitivity Bearing Tester, Brendan L. Nation (Sandia Labs)

To read the technology summaries go to the Innovate New Mexico website: innovateNewMexico.com

The lunch time session, moderated by Jackie Kerby Moore, executive director of the Sandia Science & Technology Park, featured a panel of New Mexico startup CEOs who discussed their experiences growing their companies in New Mexico. Panel speakers were Eric Branson, VP & CTO for Advanced Manufactured Power Solutions, LLC; Derek Doyle, chief engineer & co-founder of Defend Six Corporation; Michael Perrine, director of business development at Agilvax; and Barr Zulevi, CTO & president of Pajarito Powder.

The showcase ended with closing remarks from Jennifer Sinsabaugh, director of the New Mexico Manufacturing Extension Partnership (MEP).

Innovate New Mexico would like to thank event sponsors: Pharmaceutical Research and Manufacturers of America (PhRMA), platinum level; Air Force Research Lab, Los Alamos National Lab, MEP, gold level; Sandia National Labs, silver level; and NM Economic Development Department, bronze level.

A special thanks goes to the lunch panel of startup executives mentioned above and the following shark panelists: Mathis Shinnick, CEO, OptiPulse; Wayne Leslie, former president and CEO and current board member, Zocere; Dorian Rader, vice president, New Mexico Angels; Charles Call, CEO, CleanSpot; Charles Mendez, CEO, Ententhica and InnoBright; and Kyle Guin, founder & CEO, Pencil-In.
Five Students Win at Rainforest Student Pitch Competition

STC.UNM and the UNM Innovation Academy co-hosted their sixth Rainforest Student Pitch Competition on November 13, at Bow & Arrow Brewing Co. The event drew a large crowd from the community who heard pitches for ideas, technologies, and companies from ten finalists. The 90-second presentations were the culmination of a vetting process that included an initial submission of a video pitch to a panel of judges who selected finalists for the final round at Bow & Arrow.

Below are the finalists and five winners:

- **Darnell Cuylear** – Hydrogels for drug delivery to improve patient experience
- **Tye Martin** – An adaptive shower chair for post-surgery, elderly, and wheelchair users
- **Anna Kuuttilla/Alex Roerick** – Novel career assessment designed specifically for college students
- **Daniela Fry** – Hand dipped treats like strawberries, marshmallows, pretzels, Oreo’s, rice Krispy treats and many more into various colored chocolates
- **Chrysm Watson Ross** – Empathic AI (Artificial Intelligence)
- **Tracy Mallette** – A fibrActive is a new app that detects atrial fibrillation from bluetooth heart rate monitors in order to help avert strokes
- **Kyle Guin** – Shutter Bombs – smoke bombs for photography and videography use
- **Joshua Romero/Noah Brooks/Mason Martinez** – Digital marketing firm focused on engaging millennials
- **Ben Matheson** – A floor mat that uses “smart” fabric technologies which is capable of detecting the early-stages of skin breakdown among people with diabetes
- **Erik Strobert** – A company that will produce synthetic THC to improve profits in the sale of legal marijuana products

*winners of $1,000 prizes

STC and the Innovation Academy wish to thank the sponsors of this event: Bow & Arrow Brewing Co. (donated space), Nusenda Credit Union, UNM School of Engineering, Dekker/Perich/Sabatini, Jaynes Corporation and SIGNET.

The next Rainforest Pitch Competition will be held on April 16, 2018. See stc.unm.edu/epc for details.

University of New Mexico Inventors Elected Fellows of the National Academy of Inventors

Drs. Cheryl L. Willman, Distinguished Professor of Pathology and Director & CEO of the UNM Comprehensive Cancer Center, and Dr. Plamen B. Atanassov, Distinguished Professor of Chemical and Biological Engineering and Director of the UNM Center for Micro-Engineered Materials, at the University of New Mexico have been named 2017 Fellows of the National Academy of Inventors (NAI). The NAI announced on December 12 that it has chosen a cohort of 155 inventors from around the world for election as 2017 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.

The STC.UNM (STC) Board of Directors nominated Drs. Willman and Atanassov for the national honor. On behalf of the STC Board, Chair, Sandra Begay stated: “Dr. Willman was chosen as the 2015 STC.UNM Innovation Fellow based on her achievements as an internationally recognized innovator in discovering new genomic abnormalities in acute leukemias that serve as diagnostic and therapeutic targets for new cancer drugs, and as an innovative leader of the UNM Comprehensive Cancer Center.

Dr. Atanassov was chosen as the 2014 STC.UNM Innovation Fellow based on his achievements for creating technologies that focus on developing energy materials and as a catalyzing leader for innovation at UNM. He is an internationally recognized innovator in developing non-Platinum Group Metal (non-PGM) catalysts and biofuel cells.

The STC Board believed that these distinguished faculty inventors’ accomplishments made them outstanding candidates for selection as 2017 NAI Fellows and nominated them. We are absolutely delighted that they have been chosen.”

STC CEO Lisa Kuuttilla added: “Dr. Willman and Dr. Atanassov are outstanding examples of how individual innovators can be institutional innovators as well. Both have had a tremendous impact on fostering a culture of innovation at the UNM Comprehensive Cancer Center and the University of New Mexico that is felt on local, national, and international levels. The social and technological impact of new cancer drugs for leukemia and fuel cells that reduce greenhouse gas emissions on a global scale are why these two gifted inventors are so deserving of this national honor.”

STC.UNM • Lobo Rainforest Building • 101 Broadway Blvd. NE, Suite 1100 • Albuquerque, NM 87102
Jamie Koch brings 48 years of public service to the state of New Mexico and the University of New Mexico. As a member of the STC Board of Directors, his institutional knowledge of state government and New Mexico’s flagship university is invaluable. “We are very fortunate to have Jamie serving on the STC Board,” stated STC CEO Lisa Kuuttila. “He is a strong supporter of our mission to nurture innovation and catalyze economic development.”

“Based on my comprehensive knowledge of UNM and the state of New Mexico, I see STC benefiting the university and statewide communities. STC protects and develops the intellectual property (ideas and inventions) created by UNM researchers by filing patents and spinning out startup companies. The organization is playing a vital role in economic development in New Mexico.”

Jamie, a native of Santa Fe and president of Daniels Insurance in Santa Fe from 1991-2014, served three terms in the state legislature from 1968-74. He is the original author of the 1974 Inspection of Records Act – the New Mexico equivalent of the national Freedom of Information Act that protects the rights of all people to access public information and records. He served as chair of the NM Game and Fish Commission for 8 years and was the state chair of the Democratic Party in 2002. He has been a key advisor to current and former governors for four decades.

Jamie came to UNM on a football scholarship and received his bachelor’s degree in education from UNM in 1959. He is a dedicated alumnus who has served as president of the Lettermen’s Alumni Association in 1981 and served six UNM presidents as a UNM Regent for thirteen years (including a stint as BOR president), with appointments by governors in 2003, 2009 and 2015. He retired from the Board of Regents on December 31, 2015. During his time at UNM, he also served on several committees and boards, including as chair of the Regents’ Finance and Facilities Committee, chair of Lobo Development, the Regents’ Policy Ad Hoc Committee, the Lobo Development Corporation Board of Directors, and the Health Sciences Center Board of Directors. While serving as president of the UNM Regents, he was instrumental in establishing Lobo Development and was able to secure funding from the governor to establish the Student Success Center at UNM.

His numerous awards include the William S. Dixon Award from the NM Foundation for Open Government for his work on the Open Meetings Act, induction into the UNM Alumni Lettermen’s Hall of Honor, and receiving All American Honors from the USA Masters Track and Field. In 1990, Jamie established the Natural Resources Trustee Office and was the first natural resources trustee in the state of NM, overseeing the superfund site at Terrero Mine. In 2017, he was recognized by his colleagues with the Lifetime Achievement Award from the Independent Insurance Agents of NM. Jamie was instrumental in forming New Mexico Mutual Casualty Company in 1990. Daniels Insurance was awarded the Sonny Brown Award for Medium Business Employer of the Year by the Rotary Club District 5520 in 2014. In 2017, UNM Hospital’s Project SEARCH program was renamed the Nene and Jamie Koch Project SEARCH Training Program in honor of the Koch family’s work in establishing the UNM Hospital program, which is modeled after the international internship program for students with developmental disabilities. Jamie was a founding member of the New Vistas School for the Handicapped in 1971.

He has just finished writing a book titled New Mexico Political History 1967-2015: Conversations with Those Directly Involved, now available on Amazon.

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### STC Board of Directors

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<td>Ms. Sandra Begay</td>
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<td>Ms. Elizabeth (Lisa) J. Kuuttila</td>
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<td>Ms. Terri L. Cole</td>
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<td>Dr. Joseph L. Cecchi</td>
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<td>Dr. John H. Stichman</td>
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<td>Dr. Garnett S. Stokes</td>
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<td>Dr. John C. Stormont</td>
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<td>Mr. Pedro F. Suarez</td>
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<td>Mr. Gary Tonjes</td>
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<td>Mr. Charles I. Wellborn</td>
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<td>Dr. Craig G. White</td>
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New STC Board Members

Julie A. Coonrod, PhD
Dean, Graduate Studies and Professor, Department of Civil Engineering, UNM
An Albuquerque native, Dr. Coonrod has BE, MS, and PhD degrees in Civil Engineering from Vanderbilt University, University of New Mexico, and the University of Texas at Austin (respectively). Dr. Coonrod has been with UNM for 19 years, teaching undergraduate and graduate courses related to water resources engineering. She teaches a graduate level course that emphasizes the modeling capabilities of geographic information systems to students seeking a variety of degrees.

Garnett S. Stokes, PhD
President, UNM
A first-generation college graduate, Dr. Stokes earned a BA in psychology from Carson-Newman College in Jefferson City, Tennessee, and MS and PhD degrees from the University of Georgia in industrial/organizational psychology. Her research has focused on personnel selection and promotion, specifically the use of biographical information in job selection and promotion decisions.

John C. Stormont, PhD
Professor, Department of Civil Engineering, UNM
Dr. Stormont received his BS in mining engineering from the University of Wisconsin, his MS in mining engineering from the University of Arizona, and his PhD in geological engineering from the University of Arizona. Previously, he was a research scientist and engineer at Sandia National Laboratories. In 1995, he joined the UNM Department of Civil Engineering.

New STC Staff Members

Frank Fencl
Innovation Specialist
Frank Fencl joined STC in September 2017 and is concurrently enrolled at UNM as a PhD candidate in Biomedical Engineering. He supports STC in tech transfer IP protection and commercialization. Frank has an MS in Biomedical Engineering and a bachelor’s degree from UNM.

Gabe Wilkinson
AFRL Commercialization Assistant
Gabe Wilkinson joined STC as an Intellectual Property and Agreements Student Intern in May 2017 and is currently the AFRL Commercialization Assistant. He is working on a bachelor’s degree in Business Administration at the UNM. Gabe is responsible for assisting in research and marketing of AFRL’s technologies.

Savanah Romero
Accounting Coordinator
Savanah Romero joined STC as a Student Office Assistant in May 2016 and has recently transitioned into the role of Accounting Coordinator. She is responsible for the compliance and monitoring of agreements with STC as well as accounts payable and accounts receivable duties. She has a BBA in Marketing from UNM.

Andrew (Alex) Roerick
Innovation Assistant
Alex Roerick joined STC in April 2017 as an Innovation student intern and is now the Innovation Assistant. He is working towards obtaining his bachelor’s degree in Mechanical Engineering at the University of New Mexico and plans to further his education after graduation.

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On the Horizon

**STC AND SCORE OFFICE HOURS—MARCH 23 (9:00 am-12:00 pm)**
Representatives from STC and SCORE will be available for one-on-one, confidential discussions and mentoring to inventors, students, and startup companies. Coffee and light breakfast provided. Save the dates for subsequent office hours held on the last Friday of every month. Register at: STCofficehours.eventbrite.com.

**INNOVATION ACADEMY AND STC INTERNSHIP FAIR—MARCH 29 (3:00 pm - 5:00 pm)**
Come mix and mingle with startup and entrepreneur-friendly companies that are interested in bringing on interns! Several companies from the ABQid accelerator, STC.UNM startups, SFiD, Creative Startups and others looking to bring on interns in their early stages of development will be in attendance; please bring a resume! This event will be held at the Lobo Rainforest Building.

**STC SEMINAR SERIES – DESIGN-DRIVEN INNOVATION—APRIL 11 (12:00 pm-1:00 pm)**
Presented by Chuck Valauskas, JD, LLM, Valauskas Corder LL (Chicago). This presentation will discuss examples of the innovative designs and technologies that have been developed through a design-driven approach and the many forms of intellectual properties that cascade out from the process, often times at no added cost. Visit stc.unm.edu/events for more information and to register.

**2018 INNOVATION AWARDS DINNER — APRIL 12 (5:00 pm-7:30 pm)**
Celebrate with us as we recognize University of New Mexico faculty, staff, and students who have received issued patents and registered copyrights/trademarks. In addition, the STC.UNM 2018 Innovation Fellow Award will be presented to Sang M. Han, PhD. This event will be held at UNM’s Student Union Building (SUB) Ballrooms B & C. RSVP by March 30th, space is limited: innovationAwards2018.eventbrite.com.

**STC SEMINAR SERIES – WHAT RESEARCHERS NEED TO KNOW ABOUT MATERIAL TRANSFER AND CONFIDENTIALITY AGREEMENTS—APRIL 13 (8:00 am-9:00 am)**
Presented by Christopher D. Gram, Shareholder, Mueting, Raasch & Gebhardt, PA. Visit stc.unm.edu/events for more information and to register.

**RAINFOREST STUDENT PITCH COMPETITION — APRIL 16 (5:30 pm-7:30 pm)**
We invite you to join us to make this a community initiative and to help recognize our student entrepreneurs in the state. At this event, aspiring student entrepreneurs will pitch their innovative ideas for products, services or technologies in 60-90 second presentations before entrepreneurs, investors, and business professionals in the community. Held at Bow & Arrow Brewing Co. (608 McKnight Ave. NW, Albuquerque, NM 87102).

**LOBO LIVING ROOM: A LOBO RAINFOREST IN THE DESERT — APRIL 18 (5:30 pm-7:30 pm)**
Join this special event to learn about the Lobo Rainforest Building. Innovate ABQ is a concept designed to transform New Mexico’s economy, while the Innovation Academy represents its academic counterpart designed to transform higher education in a location where students can live, work and play to help drive economic growth. Please join the UNM Alumni Association’s Lobo Living Room to learn more about this unique concept and tour the building. Visit unm.alumni.com for more information and to register.

**INNOVATE NEW MEXICO® TECHNOLOGY SHOWCASE — MAY 1 (8:00 am-5:00 pm)**
This statewide, special collaborative event will highlight research and technology opportunities, companies, and economic development resources from the leading research institutions in the state of New Mexico. For more details and to register, visit innovate-new-mexico.eventbrite.com.

See the full list of events at stc.unm.edu/events