President’s Corner

Technology commercialization represents a pipeline from invention to product or process. Two major components of the pipeline are 1) the faculty, student and staff inventors and 2) the commercialization vehicle, which could be a new start-up company. STC has recently saluted the efforts of both of these groups.

STC issued a 2012 calendar showcasing 12 talented University of New Mexico faculty inventors and their amazing technologies. The inventions of these 12 faculty have led to the creation of six start-up companies, all based in New Mexico, and many other licenses with established companies. If you would like copies of the calendar, please contact STC.UNM at (505) 272-7900 or info@stc.unm.edu. The faculty inventors highlighted in this years calendar are:

David G. Whitten, Ph.D.
Research Professor, UNM Department of Chemical & Nuclear Engineering
Center for Biomedical Engineering

Brian Hjelle, M.D.
Professor, UNM Departments of Pathology, Biology and Molecular Genetics & Microbiology
Center for Infectious Diseases & Immunity

Lorraine Deck, Ph.D.
Emerita Professor, UNM Department of Chemistry & Chemical Biology

David L. VanderJagt, Ph.D.
Research Professor, UNM Department of Biochemistry & Molecular Biology

Luke F. Lester, Ph.D.
Interim Chair and Professor, UNM Department of Electrical & Computer Engineering
Center for High Technology Materials

Wilmer Sibbitt, M.D.
Professor, UNM Department of Internal Medicine, Division of Rheumatology

(continued on page 7)
Unique Synthesis of Palladium Nanoparticles for Catalysts

Dr. Abhaya Datye, Distinguished Professor in UNM’s Department of Chemical & Nuclear Engineering and Director of the Center for Micro-Engineered Materials, Dr. Timothy Boyle, Principle Member of Technical Staff at Sandia National Labs, and Dr. Patrick Burton, Postdoctoral Appointee at Sandia National Labs, have developed a novel method for the synthesis of palladium (Pd) nanoparticles for use in catalysts. Pd nanoparticles are commonly used in industrial catalyst production for energy conversion, chemical synthesis, fuel cells, and pollution abatement.

The Pd nanoparticles provide the active phase of the catalyst; therefore, these nanoparticles directly impact the reactivity and efficiency of the catalyst.

Conventional catalyst synthesis techniques rely on methods of impregnation or the use of capped nanoparticles. The impregnation route is often time-consuming and the solvents must be applied multiple times and require time to dry. The capped nanoparticle route requires heating, which can lead to difficulties in migration and growth of nanoparticles causing organic residue. UNM and Sandia’s new invention differs from conventional techniques in that it is particularly simple and produces Pd nanoparticles in a ready-to-use state without any further pretreatment. This new catalyst synthesis method also allows for direct production of Pd nanoparticles, avoiding the heating that produces residual organic materials, which interfere with catalytic activity. The method is a faster (eliminating repetition of steps), cheaper, and more efficient process for industrial catalyst production than conventional techniques.

STC is seeking an entrepreneur, investor group, or potential licensee(s) to employ these nanoparticles for a wide range of industries.

Novel Post-Production Algorithms and Techniques to Revolutionize Digital Film Industry Processes

Digital images are becoming more and more popular in the film, television, video gaming, and computer industries. These digital images are usually rendered, which is a process that generates an image from a scene file using a computer program. Researchers at the University of New Mexico have developed a novel post-process rendering algorithm that can resolve the most serious artifact in images produced by the widely used Monte Carlo (MC) rendering system. This allows companies to produce high quality images in just a few minutes, a fraction of the time MC rendering requires.

Monte Carlo (MC) rendering is an algorithm that generates an image by simulating the physical process of how light flows through the scene and exposes a piece of film in the virtual camera. However, the simulation process introduces noise in the final image, which is unacceptable for high-end rendering applications such as feature film. The key insight that enabled the UNM researchers to remove the noise from MC rendering is to measure the dependency between the scene features of the rendered samples that are output by the MC system and the random parameter inputs used to compute them. By doing this, the algorithm can tell what is a desirable scene feature (such as a noisy texture on the floor) and what is noise introduced by the Monte Carlo process to be removed. Once the noise has been identified in the final image, the algorithm can then remove the noise by adjusting the variance of a filter based on the statistical dependencies of scene features on the random parameters.

These novel algorithms and techniques were developed by Dr. Pradeep Sen and his team at the UNM Advanced Graphics Lab (AGL). Dr. Sen, Assistant Professor in the Department of Electrical & Computer Engineering, was one of the founders of the AGL, which is dedicated to research in computer graphics, visualization, imaging and computer vision.

The technology described here is related (but not limited) to the production of computer-generated films, such as those made by companies like Pixar, Dreamworks SKG, Sony Imageworks, and Blue Sky Studios. The films produced by these companies all require the synthesis of high-quality imagery that is often photorealistic or matches a desired artistic style. There are two approaches to image processing that are widely used and both have major drawbacks. MC rendering is typically too time-consuming and difficult to incorporate into fast-paced production schedules, so most production companies still use Renderman, which employs many small light sources scattered through-out the scene and fast, local calculations to compute the final image. This is much faster than MC rendering, but requires a lot of manual intervention. The use of the novel UNM algorithms and techniques will revolutionize the digital film industry, and could save film productions millions of dollars per film in personnel and computing costs by displacing the Renderman approach and making the physically correct Monte Carlo rendering a viable technology for production rendering.

STC has filed patent applications on these exciting new technologies and is currently examining commercialization options. If you are interested in information about any of these technologies, please contact Cara Hajovsky at chajovsky@stc.unm.edu or 505-272-7297.
Novel Compounds and Methods for Preventing, Viral and Bacterial Infections

Michelle A. Ozbun, Ph.D., Professor in UNM’s Department of Molecular Genetics & Microbiology, along with members of her lab, have recently made groundbreaking discoveries in the field of infectious disease specifically related to the human papillomavirus (HPV). The discoveries concern using visible antagonist compounds as candidates for prevention of infection by HPVs. Further, these compounds can inhibit binding and uptake of other microorganisms – whether viral or bacterial (including, but not necessarily limited to, HIV, herpes simplex virus, and chlamydia). Some of the identified inhibitors are FDA approved for human use, and so could be tested in human tissues and patients very soon.

According to the Centers for Disease Control and Prevention, approximately 20 million Americans are currently infected with HPV, with 6 million new people becoming infected each year. Human papillomaviruses (HPVs) comprise the most common sexually transmitted infectious agents worldwide and HPV infections also are estimated to cause approximately 500,000 cases of cancer a year. HPV infection is associated with a variety of other diseases as well, including cutaneous and genital warts and a subset of head-and-neck cancers. Most of the many types of HPV are harmless, but roughly 30 types, deemed “high risk,” create significant cancer risk. Over 100 different HPV types have been identified, and the most common HPV-associated cancer, cervical cancer, is associated with infection by one of a subset of about 15-18 “high risk” HPVs.

Through further research and development, the Ozbun lab is working to change the paradigms of HPV and other infectious disease treatment and prevention by providing novel and already-approved therapeutic and prophylactic compounds for inhibiting viral and bacterial infections and for reducing the extent, severity, frequency, and/or likelihood of viral infections.

Multi-colored Fluorescent Antibody Platform for Production of Reagents Capable of Qualitative and Quantitative Immunofluorescence

Dr. Ravi Durvasula, Associate Professor in UNM’s Department of Internal Medicine, Division of Infectious Diseases, and Chief of Medicine at the New Mexico VA Health Care System, along with his collaborators Dr. Angray Kang, Reader in Molecular Cell Biology at Queen Mary University of London, and Dr. Anatoliy Markiv, Lecturer in Biomedical Sciences at the University of Westminster, have developed novel recombinant multi-colored fluorescent antibodies with properties enabling an exciting new level of biomedical research capabilities.

Antibody-fluorophore conjugates are invaluable reagents for use in studies of cell biology and physiology. While advances and improvements have been made in new reagents over the past decade, these improvements have fallen short of desired results. For example, in existing fluorescent antibodies, fluorophores (components of molecules that allow them to be fluorescent) are chemically linked to antibodies to create fluorescent antibodies. This chemical link limits the utility of the molecules for quantitative analysis, as well as being costly, time-consuming and difficult to consistently reproduce.

Now, a novel method for overcoming the disadvantages associated with existing fluorescent antibodies and for generating stable recombinant antibodies has been developed and is exemplified by a novel multi-colored fluorescent antibody platform in the design, assembly, intracellular bacterial production and purification of a panel of novel antibody fluorescent protein fusion constructs. The panel of multi-colored antibodies was assembled by genetically incorporating fluorescent proteins as bridging scaffolds (rather than by chemical linking of the fluorophore). Using the fluorophore as a bridge introduces advantageous properties specific to this novel production platform and panels of reagents including the following:

- First, with an integrated fluorophore, a single reagent is created, which reduces time and cost, and increases reproducibility of the binding assay.
- Second, the antibody binding site and fluorophore are stoichiometric (an exact ratio), and thus the signal generated by the fluorescent antibody is directly proportional to the amount of antibody bound (i.e., allows for quantitative analysis).
- Third, expression and purification steps can be monitored without the need for sophisticated detection equipment since the bacteria and the recombinant protein are visible to the naked eye with numerous and distinct colors.

The method used to create the multi-colored fluorescent antibodies is novel and provides the basis for a strong platform technology to create robust panels of colored antibodies. This method can be applied to other existing antibodies to create the next generation of diagnostic and therapeutic molecules and to screen antibodies against cell surface markers. This is a breakthrough and powerful platform technology that will be used to create many distinct products for the worldwide research community—especially for cell molecular sciences and immunology.

The novel platform and REDantibody are available for licensing from STC.UNM. To read more about this exciting scientific innovation see the following full scientific articles:

In 2011 a New Mexico-based start-up company was formed around a technology that could completely change the way heat is removed from devices that need to stay cool to operate efficiently. The technology is “disruptive” in nature, a term coined by Harvard Business School Professor Clayton M. Christensen to describe any new technology that unexpectedly displaces an established technology. The new company, ThermoDynamic Films, LLC, (TDF) was formed by scientists from the University of New Mexico and Los Alamos National Laboratory based on technology jointly developed at the two institutions. Co-founded by Dr. Kevin Malloy, Professor of Physics and Associate Dean of Research in the College of Arts & Sciences, and Dr. Richard Epstein, Los Alamos National Lab (LANL) Fellow and Physicist (now retired) and UNM Adjunct Research Professor of Physics at UNM, TDF has optioned for licensing from STC cryogenic cooler technology developed by Dr. Mansoor Sheik-Bahae, Professor of Physics in UNM’s Department of Physics & Astronomy, Dr. Epstein, and colleagues at UNM and LANL. STC.UNM President & CEO Lisa Kuuttila stated: “We are excited about the commercialization work being done by TDF to advance the technology and create applications for this ground-breaking innovation.”

Current cryogenic coolers use mechanical or liquid systems to cool solids to cryogenic temperatures (anything below -150°Celsius). Major drawbacks of other cryogenic technologies are that they use bulky, motor-driven devices. The new UNM cryocooler technology uses a laser beam to cool special crystals, thus reducing device size to a few millimeters and eliminating all moving parts and vibrations. Called a solid-state optical refrigerator (SSOR), the UNM technology is capable of achieving cryogenic temperatures. In 2010, the research team reached a major milestone when it was able to cool a crystal to -118°Celsius using the technology—establishing the first all-solid-state cryocooler. The achievement was featured in *Nature Photonics* and *Physics Today*.

More recently, the team has cooled SSORs to -145°Celsius. The technology is being targeted for use by major aerospace and defense contractors as a cooling system for satellite-borne infrared imaging (IR) detectors. Additionally, smaller aerospace contractors have shown interest in partnering with TDF to manufacture the micro cryocoolers. Particular advantages of the technology for these space-based surveillance devices include elimination of vibration, ability to move with IR sensors on a gimbal mount, single pixel cooling for better images, greatly reduced size, more stable temperature control, more rapid cooling (minutes versus hours) and easier removal of waste heat.

The company management and research team include Dr. Epstein as CEO, Dr. Malloy as CTO, and Stefii Weisburd as VP for Administration. The company is collaborating with Dr. Sheik-Bahae’s team at UNM. Company plans are focused on developing a market-ready SSOR capable of cooling to between -153°Celsius and -183°Celsius, and developing products for licensees, partners and buyers. TDF has received Department of Defense STTR (Small Business Technology Transfer Research Program) Phase 1 funding of $150,000 and Department of Energy SBIR (Small Business Innovation Research) Phase 1 funding for $100,000 for R&D, and is seeking equity funding. The technology received gap funding of $25,000 in 2011 from STC’s gap funding program as well as a $300,000 DARPA (Defense Advanced Research Projects Agency) award to develop proof-of-principle concepts and prototypes.

Small, entrepreneurial companies are the perfect vehicle for developing entirely new technologies such as the solid-state optical refrigerator, which is why the launching of ThermoDynamic Films is so exciting. TDF has the superb technical expertise, management talent and product focus to turn a disruptive technology into a new industry.
STC Hosts Tech Transfer Students from Polish University

For a few weeks this fall, STC expanded its internship program to include researchers from the Poznan University of Medical Sciences (PUMS) in Poznan, Poland. The four scientists visited STC from September 12 through October 5 to learn about the University of New Mexico’s technology transfer program at STC. The internships met with staff, faculty and entrepreneurs, and attended educational seminars and conferences to learn about the organization’s operations and the process of commercializing university technology.

This international internship project is the result of a collaboration between the ProRegio Foundation in Poznan and STC.UNM. The Foundation is a non-governmental organization formed in 2004 to support and promote the technology-transfer process among Poland’s universities, research institutions and business community. The Foundation provides training programs in technology transfer to interested organizations and covered all costs associated with the interns’ visit to STC.

Poznan University of Medical Sciences is a leading medical school in Poland with a student population of 8,200, focusing on education, research and clinical care with ties to 6 clinical hospitals. The University conducts joint research and participates in international programs with many foreign universities and institutions. It has a unique 4-year M.D. program conducted in English and based entirely on the American medical school model and a 6-year M.D. program conducted in English and based on the Polish/European medical school model.

The visit was a great success. Let us introduce you to some wonderful visiting interns:

Miroslaw J. Szczepanski, M.D., Ph.D. — Miroslaw received his M.D. and Ph.D. in immunology from Poznan University of Medical Sciences. He is currently a Senior Assistant Professor in the Department of Clinical Immunology at PUMS and is completing a residency program in otolaryngology and head and neck surgery. He completed a 3-year postdoctoral fellowship in immunology at the University of Pittsburgh Cancer Institute in 2009. His research and clinical interests include toll-like receptors in laryngeal cancer, cancer stem cells in human head and neck squamous cell carcinoma and CSPG4 as a biomarker of cancer stem cells and target for immunotherapy of head and neck squamous cell carcinoma. Contact: mszczep@ump.edu.pl.

Marta Szajnik, M.D., Ph.D. — Marta received her M.D. and Ph.D. in tumor immunology from Poznan University of Medical Sciences. She completed a 2-year postdoctoral fellowship in tumor immunology at the University of Pittsburgh Cancer Institute in 2009 and is currently an Assistant Professor in the Department of Gynecologic Oncology at PUMS. Her research and clinical interests include gynecology oncology; regulatory T cells, tumor-derived exosomes, toll-like receptors expression on cancer cells; and immunotherapy for ovarian cancer. Contact: martas@ump.edu.pl.

Malgorzata Kikowska, M.S. — Malgorzata is a graduate student with an M.S. in Biology and a specialty in experimental biology. She is a teaching assistant in the Department of Pharmaceutical Botany and Plant Biotechnology at Poznan University of Medical Sciences (PUMS). Her current research involves the native species of Eryngium L. in vitro cultures and its cytotoxic and proapoptotic effects on selected cancer cell lines. Contact: kikowska@ump.edu.pl.

Michal Wincenty Luczak, M.S. — Michal holds an M.S. in molecular biology from the Adam Mickiewicz University in Poznan with postgraduate training at the Institute of Grasslands and Environmental Research in Aberystwyth, Wales. He is currently a research scientist in the Department of Biochemistry and Molecular Biology at PUMS. Contact: mluc@ump.edu.pl.

STC Wins Regional Partnership Award

STC.UNM recently won a Regional Partnership Award from the Federal Laboratory Consortium for Technology Transfer (FLC), a nationwide network of federal laboratories that provides a forum for promoting and strengthening technology transfer of lab technologies and expertise to the marketplace. Today, approximately 300 federal laboratories and centers and their parent departments and agencies are FLC members. STC was nominated by Sandia National Labs for the partnership award for the FLC’s mid-continent region. The region includes more than 100 federal labs in 14 states (Arkansas, Colorado, Iowa, Kansas, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah and Wyoming).

The award recognized STC’s outstanding collaboration with Sandia to commercialize jointly owned UNM/Lab technologies. The award also recognized the successful collaboration between UNM’s Office of Research and Economic Development and Sandia’s Office of Science and Technology for increasing the amount of collaborative research between the two institutions. Two STC start-up companies, Lotus Leaf Coatings, Inc., and nanoMR and a company developing advanced sensors, Adaptive Methods, all licensing jointly owned technologies, were featured in the submitted nomination as examples of successful technology transfer.

Issued Patents (July 1, 2011 - December 31, 2011)

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<tr>
<th>Fabrication and Use of Semipermeable Membranes and Gels for the Control of Electrolysis</th>
<th>Imaging Interferometric Microscopy</th>
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<tr>
<td>Inventors: Scott Sibbett, Dimiter Petsev</td>
<td>Inventors: Steven R.J. Brueck, Alexander Neumann, Yuliya V. Kuznetsova</td>
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<th>Fluorescent Chemosensors for Metals Based on Dipyrrins</th>
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<tr>
<td>Inventors: Paul A. Bentley, Yujiang Mei</td>
<td>Inventor: Tariq A. Khraishi, Marwan S. Al-Haik</td>
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<tr>
<th>Light-Emitting Device Having Injection-Lockable Semiconductor Ring Laser Monolithically Integrated with Master Laser</th>
<th>C-Reactive Protein and Its Use to Treat Systemic Lupus Erythematosus and Related Conditions</th>
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<tr>
<td>Inventors: Marek A. Osinski, Omar K. Qassim, Gennady A. Smolyakov</td>
<td>Inventors: Terry W. Du Clos, Carolyn Mold</td>
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<tr>
<th>Single-Arc Dose Painting for Precision Radiation Therapy</th>
<th>Magneto-Carbon Device with Mode Converter and Related Methods</th>
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<tr>
<td>U.S. Patent No. 8,014,494 issued September 6, 2011</td>
<td>U.S. Patent No. 8,018,159 issued September 13, 2011</td>
</tr>
<tr>
<td>Inventors: Cedric X. Yu, Shuang Luan, Danny Z. Chen, Matthew A. Earl, Chao Wang</td>
<td>Inventors: Mikhail I. Fuks, Edl Schamiloglu</td>
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<th>Flow Cytometry for High Throughput Screening</th>
<th>Epitaxial Growth of In-Plane Nanowires and Nanowire Devices</th>
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<tr>
<td>Inventors: Larry A. Silar, Bruce S. Edwards, Frederick W. Kuckuck</td>
<td>Inventors: Seung Chang Lee, Steven R.J. Brueck</td>
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<tr>
<td>Inventors: Stephen D. Hersee, Xin Wang, Xinyu Sun</td>
<td>Inventors: Kateryna Atyushkova, Mangesh Bore, Gabriel Lopez</td>
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<th>Material with Core-Shell Structure</th>
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<th>Methods and Apparatuses for Removal and Transport of Thermal Energy</th>
<th>Organcatalysts and Methods of Use in Chemical Synthesis</th>
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<tr>
<td>Inventors: Mohamed S. El-Genk, Jean-Michel Tournier</td>
<td>Inventor: Wei Wang</td>
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Center for High Technology Materials Celebrates Milestone

The Center for High Technology Materials (CHTM), a strategic research center of UNM’s Office of the Vice President for Research, recently celebrated an impressive achievement when the U.S. Patent & Trademark Office issued its 108th patent to researchers at CHTM. To read more about the Center’s accomplishments in an article by Karen Wentworth, reprinted from the online UNM Today, go to http://www.stc.unm.edu/news/news.php?newsid=323.

The University of New Mexico and STC.UNM Congratulate the Center for High Technology Materials (CHTM) on Reaching an Impressive Milestone!

Under the outstanding leadership of CHTM Director Dr. Steve Brueck and his team of faculty and student researchers, CHTM has received more than 100 issued U.S. patents for its cutting-edge technologies.

It’s quite an achievement for a research center originally funded by the state of New Mexico because the state believed its economic future depended upon creating a nexus of researchers, inventors, new companies and high-tech jobs in New Mexico.

CHTM (http://www.chtm.unm.edu) is a Strategic Research Center of the Office of the Vice President for Research with faculty involvement from UNM’s School of Engineering and College of Arts and Sciences. The Center is nationally and internationally recognized for its contributions to research and education in photonics, microelectronics, and nanotechnology. The objectives of CHTM are to sponsor research and education in these fields; to enhance collaborations between UNM, federal laboratories and industry; and to promote economic development in the state of New Mexico.
STC, UNM’s Office of VP for Research and HSC’s Office of Research recognized the impact that the start-up companies based in New Mexico are making in diversifying our economy. The following companies received recognition in a recent Albuquerque Journal edition:

- AgiVax
- Lotus Leaf Coatings
- AVANCA Medical Devices, Inc.
- Nanocrystal
- Avisa Pharma
- nanoMR
- Azano Pharmaceuticals, Inc.
- ProtoHit
- Comet Solutions, Inc.
- Respira Therapeutics
- Intelicyst
- SK Infrared, LLC
- K&A Wireless, LLC
- ThermoDynamic Films, LLC

We want to thank the “generators” of technologies, our inventors, as well as the “commercializers” of technologies, the start-up companies, for the contribution they are making in bringing valuable innovations to the marketplace.

Lisa Kuuttila
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Lisa Kuuttila
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A Closer Look

Pedro F. Suarez, Esq.
Member, Board of Directors, STC.UNM
Attorney, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Patents are the lifeblood of university inventions because they attract the investors and entrepreneurs necessary to create and fund start-up companies and protect a university’s valuable intellectual property (IP) from potential infringers. STC board member Pedro Suarez is an important addition to STC’s “IP assets” because he provides the wise counsel that every tech transfer board needs to steer a clear path to successful commercialization.

Mr. Suarez, a patent attorney and engineer with over 25 years of legal and technical experience in patent law and wireless and software technologies, became a member of the STC Board of Directors in 2008. He is an attorney with the prestigious, 500-lawyer law firm of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. The firm represents entrepreneurs, research scientists, universities and institutions, investors, start-ups, emerging growth companies, and Fortune 500 companies. Mintz’s IP attorneys handle a wide range of biotechnologies and other life sciences, as well as surgical device, medical therapy and electrical and mechanical engineering technologies. Founded in 1933, the firm has offices in Boston, Washington, D.C., New York, San Diego, Los Angeles, Palo Alto, Stamford (CT), London, and Israel and has been designated an AmLaw 100 firm, a ranking by the trade magazine American Lawyer of the top 100 U.S. law firms based on profit and revenue. Prior to joining Mintz Levin, Mr. Suarez was an attorney with the Washington, D.C., IP law firm of Finnegan, Henderson, Farabow, Garrett & Dunner LLP.

Mr. Suarez is a member of Mintz Levin’s IP section and practices in the areas of intellectual property, technology transfer and licensing, patent procurement, and patent enforcement/monetization. Some of his clients include Stanford University, the University of California, SAP, and Nokia. He prepares and prosecutes patent applications, renders infringement and validity opinions, litigates patent infringement and validity, conducts IP due diligence for venture funds and high tech companies interested in acquiring IP assets, and provides counsel to clients on licensing transactions. Mr. Suarez’s technical expertise lies in the technology areas of software, wireless communications, semiconductors, medical devices, clean technologies, and consumer products. He spent 12 years in positions with the U.S. Air Force, the National Security Agency (NSA) and technology companies. As an Air Force engineer, he developed and tested advanced spread spectrum and millimeter wave communication systems and image processing systems. He worked with semiconductor technologies during his stint with KLA Instruments (known today as KLA-Tencor after a 1997 merger), a leading semiconductor equipment company specializing in automated inspection systems for chip fabrication processes. As a Principal Member of the Technical Staff at Litton/TASC (known today as TASC after being sold by Northrup Grumman), a company providing advanced systems and services to the Department of Homeland Security, Department of Defense and other federal agencies, Mr. Suarez worked on a variety of wired and wireless communication systems and was the lead designer of a major network.

Mr. Suarez earned a BS in Electrical Engineering from the U.S. Air Force Academy, an MS in Electrical Engineering from the Air Force Institute of Technology, and a JD, with honors, from The George Washington University Law School. In 2010, he was named one of San Diego County’s top lawyers by the San Diego Daily Transcript, a list determined by peer voting among San Diego attorneys. Mr. Suarez has been a featured speaker at UC Berkeley’s Entrepreneural Best Practices Series. He is a member of the Intellectual Property Owners Association (IPO) and also serves on the IPO’s Standards Setting Committee, which explores the IP and antitrust implications of industry standards. He is also a member and IP special interest group co-chair of CommNexus, a nonprofit technology industry association dedicated to the growth of technology industries regionally and nationally. Mr. Suarez is a Lieutenant Colonel (retired) in the United States Air Force Reserves.

“STC assists the faculty member by protecting the technology using the patent system, so that a company, such as a start-up, can commercialize the technology, grow a business, employ a workforce, sell products, and, hopefully, one day become a big company.”

Did you already know that you wanted to practice patent law?

I always knew I wanted to be a lawyer. Both of my parents were Cuban exiles and my Dad was a political prisoner in Cuba before coming to the U.S. Because of the Cuban Revolution and my mom fleeing Cuba in the early sixties, she was never able to finish law school. So at a very young age (perhaps when I was still in my crib), my mom encouraged me to attend law school.

The patent law piece came later. I grew up in Rochester, New York, which was once a hotbed of innovation and the corresponding home to many patent at-
tornneys at companies, such as Kodak, Xerox, and Bausch and Lomb. During a high school career day, a patent attorney from Xerox gave a presentation, and I was able to learn about patent law and how it combined law and technology. Given my love of technology, it seemed like the perfect fit.

**What is your interest in serving on the STC Board of Directors? How do you see your role and contribution to the organization?**

My interest is in ensuring that technology innovations from UNM are protected and then placed into commerce to benefit the community. For example, a UNM faculty member may develop groundbreaking technology. Before the technology is disclosed or commercialized, STC assists the faculty member by protecting the technology using the patent system, so that a company, such as a start-up, can commercialize the technology, grow a business, employ a workforce, sell products, and, hopefully, one day become a big company. It is a clear win for the University, the community, and the start-up.

**Given that you work with many other university tech transfer programs and institutions, what's unique about the STC program?**

I think it is the thin, clean high-desert air in New Mexico that makes STC unique. It has given rise to New Mexico’s world class labs, high percentage of PhDs, creative and eclectic arts culture, and Western “can-do” spirit, which when combined provide a unique entrepreneurial environment found nowhere else in the world. And, STC takes advantage of this wonderful mix and orchestrates resources from within the University and across the state to ensure that UNM’s technology innovations are protected and then used in commerce to benefit the community.

Mr. Suarez’s other passion is his family. He and his wife, Mindy, are the devoted parents of Alexandra (11) and Peter (10). He loves to cook (“I make the best paella this side of Madrid.”), travel, ski and, as he puts it, “relive my childhood through my kids, which most recently included playing laser tag with my son and 11 of his closest friends, learning to play golf again, and sledding in the Sierras!”

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Since its beginning in 1995, STC has helped UNM researchers move their remarkable discoveries into the marketplace by helping to start over 50 companies that are transforming these innovative technologies into new diagnostic medical devices, new drugs for chronic diseases and new semiconductor materials benefiting the citizens of New Mexico and beyond.

**Economic impact?**

- $12.4 million in venture capital money invested in the state since 2004
- Jobs with average salaries of $66,000 that are keeping more UNM graduates right here in New Mexico
- $18 million in goods, services and spending generated by UNM start-ups of our New Mexico-based start-ups for building technology companies that are improving the New Mexico economy with high-paying jobs and investment dollars.

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The University of New Mexico Office of the Vice President for Research, Health Sciences Center Office of Research, and their technology commercialization arm, STC.UNM, Salute the Success of our New Mexico-based start-ups for building technology companies that are improving the New Mexico economy with high-paying jobs and investment dollars.
Legal Trends in the Patent Office

In the January 5th online article, “2011 Patent Grants: A New Record,” by Dennis Crouch, posted on his patent law blog, Patently-O, Crouch analyzes the dramatic rise in issued patents in 2010 and 2011. The two-year increase seems to be tied to procedural changes made since 2009 by USPTO Director David Kappos. To read the article in full go to http://www.patentlyo.com/patent/2012/01/2011-patent-grants-a-new-record.html.

Follow Us: Using STC Social Media Web Sites to Increase Your Networking Opportunities

One of the new features of STC’s recently re-designed web site are its social networking sites on mega web sites such as Twitter, LinkedIn and Vimeo. At the bottom of every web page on the STC web site, you will find a section titled “Follow Us” with links to all of our social networking sites. The word “social” might be a bit of a misnomer, for what you’ll find on these sites is lots of information on our newest technologies, commercialization opportunities, educational events and important issues in the world of technology transfer. Here’s a brief description:

Innovation Door  Innovation Door is STC’s blog with articles by STC CEO & President Lisa Kuuttila and others on the latest tech transfer news and events. It’s an opportunity to have an informed dialogue on these issues.
URL: http://www.innovationdoor.com

Twitter  On STC’s Twitter site, you’ll find short announcements on everything from STC’s newest technologies (tech alerts) to seminars, conferences and recent articles from the STC website.
URL: https://www.twitter.com/stcunm

LinkedIn  STC’s Linked In site offers organizational and individual profiles of STC and its staff and opportunities for business networking.
URL: http://www.linkedin.com/company/stc.unm

Vimeo  A video web site where STC can post its seminar and special event videos for your viewing.
URL: http://www.vimeo.com/stcunm

Flintbox  Flintbox is STC’s innovation networking platform for its technology portfolio.
URL: http://stcunm.flintbox.com

Foorum NM  A New Mexico social business network where STC posts articles and news on events and technologies.
URL: http://www.stc.unm.edu/foorumnm

Check it out!

New Guide for Faculty Entrepreneurs

Coming soon for UNM faculty and staff entrepreneurs is a new guide, currently in development, that will help UNM inventors who want to start a company based on technology licensed from STC. Whether your role in the company is inventor, founder, CEO, chief science officer, or consultant, the guide will offer a roadmap for navigating STC and UNM policies and procedures during the early stages of company formation.

The guide will also provide information on university resources and outside professionals who can assist you as your company grows, increasing your chances of having a successful and rewarding entrepreneurial experience.
Internship programs provide a valuable experience for both the sponsoring organization and the students who seek them out. At STC, our student interns are an important part of who we are and what we do. We appreciate the valuable skills and knowledge our students already bring with them when they work for us and in return we give them the opportunity to participate in the world of technology transfer—a process where science, law and business come together to move technologies into the marketplace. Max De Azevedo, an STC student intern for the past two years, will be ready to move into that world soon when he graduates in the spring from UNM School of Law.

Max was born in Florida but grew up in New Mexico. He graduated from the University of Florida with a B.S. in Biological Engineering. “I always wanted to be an engineer but thought I might ultimately want to go to medical school. The bio-engineering degree was broad enough to prepare me to be an engineer but specific enough to be a good prep for medical school,” he explained. But after he had taken the MCAT and was applying to medical school, he had second thoughts—and literally closed the online medical school application he was working on and signed up for the LSAT. Actually, the seed for his change of heart probably goes back to his undergraduate days when he worked for a medical tech company called Exactech Inc., maker of implantable devices and surgical instruments. Part of his job as a design and test engineering intern was to review patents and confirm compliance with the company’s intellectual property. “I liked the process of finding out if something was patentable and the hairsplitting analysis of patent claims. It was interesting and used the skills and thought process that I used for engineering. Engineering is a demanding discipline so it has prepared me well for law school.” Max was accepted by several law schools around the country but wanted to come back to New Mexico.

He has found his time at STC to be worthwhile. “The exposure to the patent process and business aspect of commercializing technologies has been invaluable. You get to see things globally—how the inventors see things, how the patent attorneys analyze things, and how the business people see the process. I’ve learned that good claims writing is not formulaic but is a combination of art and science,” he added. Max has done it all at STC—from conducting prior art searches and preparing provisional patents to marketing technologies and working with STC’s specialized database.

Max faces the formidable prospect of taking the patent bar exam in the spring and the New Mexico and Colorado bar exams this summer. And he’s training for the Durango Ironhorse Bicycle Classic competition in May. Based on past performance, we know he is up for the challenges ahead!
ABOUT STC.UNM and THE INNOVATION DOOR

STC.UNM strives to support the University of New Mexico and its partners as the source for innovation management and commercial development. Additionally, STC.UNM desires to play a vital role in New Mexico economic development and to be an innovator in commercialization worldwide.

To learn more about STC.UNM and our activities, please visit us on the web at http://www.stc.unm.edu.

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