Mark Your Calendar

September 27-29, 2017 | Taipei City, Organized and Hosted by Yuan Ze University
International Conference on Technology Policy and Innovation, www.ictpi2017.conf.tw/
ICTPI is accepting abstract submissions for 2017 that pursue the theme "Innovation and Development in the Asian Century: Global Shifts in Technological Power." Abstracts are encouraged from technology policy and innovation researchers, officials and staff from national ministries of science and technology, economic development officials, technology entrepreneurship educators, and students in these fields.

**Mark Your Calendar**

**FASTforward Mentor Information Session | August 16, 6:00-7:00pm**
IC² Institute, 2815 San Gabriel, Austin, TX 78705 (on-site parking available)
To participate as a FASTforward mentor please contact Coral Franke, coral@ic2.utexas.edu; 512.475.8947

**FASTforward: 2nd Cohort begins September 12**
Small business owners struggle to find the time, resources, and guidance to maximize growth opportunities. This hands-on program guides small business owners to:
- Identify new business opportunities and revenue streams
- Differentiate brand message, product, and delivery strategy for more effective reach
- Develop financial models to enhance growth and funding opportunities
- Increase the scale of their business

**Take Note**

Follow the IC² Institute on Twitter!
twitter.com/ic2institute

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FROM THE DIRECTOR

IC²'s LEADERS OF TOMORROW

Students at the IC² Institute: Leaders of Tomorrow

McKenna Talley: GRA for Human Trafficking Impact in Texas

Eric Menees: Triple Major at UT, Entrepreneur & IC² Enthusiast: Creating Emotion Recognition Technology

IC² FELLOWS CONFERENCE 2017

2017 IC² Fellows Conference: 40 & Forward

Celebrating the Centennial Year of George Kozmetsky

Celebrating the Fortieth Year of the IC² Institute

ACROSS THE UNIVERSITY

NSF Funds Workshops to Disrupt Illicit Supply Networks

IC² Institute Awards Research Grants to 11 UT Faculty Members

THE STATE & THE NATION

ATI Hosts First Reverse Solar Data Hackathon

ATI Works with Austin Community College to Establish Life Sciences Wet Lab & Incubator Space

AROUND THE GLOBE

IC² Institute Opens a Second Technology Incubator in India

McCombs MBA Students Visit Nexus

XLr8AP Continues to Gain Momentum in Tirupati: Entrepreneur India Names XLr8 Among Top 6 State-Sponsored Incubators

PUBLICATIONS

BBR and IDVSA Release Reports on Cultivating Learning & Safe Environments (CLASE) Across the University of Texas System and Human Trafficking Impact in Texas

Impact Studies: Texas Public Libraries and Texas Military Department

Academic Publications (January through June)

WHAT’S HAPPENING AT THE IC² INSTITUTE

New IC² Institute Fellows

Visiting Scholars 2017

FASTforward: Mentoring Deepens for First Cohort while Companies Apply for Second Cohort

The Interchange: Innovation Networking

TAKE NOTE

Mark Your Calendar

The 2017 MCCT cohort from Monterrey, Mexico shows their University of Texas spirit.

Bruce Kellison (BBR), Matt Kammer-Kerrwick (BBR), Noël Busch-Armendariz (IDVSA), Melissa Torres (IDVSA), and John Nehme (Allies Against Slavery) working together on “Disrupting Illicit Supply Networks.”

An executive education cohort from HEC Paris/CCI Paris Ile-de-France visited the Institute and conducted an interactive exercise. Small group discussions were followed by presentations of results. Photo: M. Cotrofeld.

UT students in The Research in Entrepreneurship and Commercialization Challenge (REACH) program (front of the classroom) are introduced to the entrepreneurial cohort from the Korea Advanced Institute of Science & Technology (KAIST) at the Institute. Photo: P. Riddle.
Dear Friends & Colleagues,

This issue of the UPDATE celebrates the IC² Institute's 40th year, the 90th year of the Bureau of Business Research (BBR), and the centennial year of its founder, Dr. George Kozmetsky. Above all, the message of this celebration is future-focused: 40 & forward. It is therefore most appropriate, in our university-based research setting, that we open with focusing on students at the Institute, and tell a few of their stories as they work with the Institute and then make their way into the workforce: some as employees, public servants, and academics; others as entrepreneurs destined to become employers.

From there we touch on the deep history represented by the IC² Fellows, one of the programs first established by our founder. These peers and colleagues of the Institute have watched IC² Institute pursue the hypothesis that the commercialization of technology leads to job creation, technology cluster development, and regional prosperity. Our recent Fellows Conference was a tremendous success with 145 attendees with IC² Institute Fellows coming from ten different countries.

The Bureau of Business Research features large in this issue. Its recent work with the Institute for Domestic Violence and Abuse (IDVSA) has helped reveal the plight of hidden victims—victims of sexual assault across university campuses, and victims of human trafficking across the state. One of the valuable aspects that the BBR brings to this work is to quantify the financial burden that these activities place on the State of Texas. It is socially significant work of which we are very proud.

We also announce the recipients of IC²'s "Insight to Innovation" funds, awarded to eleven UT faculty members. These funds are most often placed back into the hands of student research assistants, helping both faculty and students to actively engage with the efforts of the Institute.

Meanwhile, our international research projects move apace, particularly in India. The XLR8AP business incubator and accelerator (launched only last September) continues to make headlines in local press at Tirupati, Andra Pradesh, and has been named as one of the top six state-sponsored incubators by Entrepreneur India. Meanwhile, our international research projects move apace, particularly in India. The XLR8AP business incubator and accelerator (launched only last September) continues to make headlines in local press at Tirupati, Andra Pradesh, and has been named as one of the top six state-sponsored incubators by Entrepreneur India.

The Austin Technology Incubator (ATI) has helped Austin establish itself as the first site for a US Department of Energy’s Solar Reverse Hackathon, an effort to encourage use of data and data tools to facilitate new products and services for solar power integration. Another large recent win is the opening of the biotechnology wet laboratory space at Austin Community College, which ATI Biotech helped establish from its early stages of grant development.

While full, this issue does not encompass all the activities of the Institute over the last 6 months. We encourage you to explore our website and follow us on Facebook and Twitter to get a real-time view of the activities of the IC² Institute.

Best regards,

Gregory Pogue
Interim Director, IC² Institute

¹ For more detailed coverage on the 90th anniversary of the Bureau of Business Research, please see Update Fall/Winter 2016.
Students Assist with Research on Austin’s Entrepreneurial Ecosystem

A grant by the Kauffman Foundation to the IC² Institute to research Austin’s Entrepreneurial Ecosystem has enabled Elsie Echeverri-Carroll to hire a cadre of students to collect and analyse data, including Fiza Mairaj Ali, Qihang Hu, Evan Johnston, Jayson Varkey, and Karina Alvarez. In December 2016 Evan Johnston graduated The University of Texas at Austin in December 2016 with three majors: economics, mathematics, and psychology. He now continues as a research assistant on the project. Johnston says, “After working with Elsie at IC² for over two years on the Kauffman project and others, I have learned a lot about the history of Austin and how it grew to be the high-tech, entrepreneurial center it is today. Under her guidance, I have also been able to gain great hands-on research experience.”

Erinn Wright (on the right in this photo taken with her friend Anna Poliner) graduated in May with a degree in analytical marketing from the McCombs School of Business. She also earned a minor in Spanish and a Bridging Disciplines Certificate in Social Entrepreneurship and Non-Profits, with a focus on International Development. Her Bridging Disciplines curriculum is what brought her to the IC² Institute, where she worked with David Gibson to make connections in Belize. Wright was awarded a Bridging Disciplines scholarship to conduct in-country research in Belize on its struggle against diabetes, which is currently the second highest cause of death in the small Caribbean and Mesoamerican nation. She captured her research in the report “Sustainable Wellbeing in Belize: The Challenge of Diabetes.” The report is available in the UT publications repository, www.repositories.lib.utexas.edu/handle/2152/47323. Photo: A. Weitzel.

FASTforward: Mentoring Deepens for First Cohort while Companies Apply for Second Cohort

Last fall, the first FASTforward cohort of 20 companies attended ten intensive training sessions, and then graduation. But the program didn’t end there. Entrepreneurs continue to report on their activities and progress monthly as they engage with mentors for feedback and assistance in “aftercare” events.

Meanwhile, information sessions for the next FASTforward cohort have begun, along with the application and interview process to identify the 20 companies with the highest potential for growth through the program. FASTforward helps small businesses accelerate their commercial potential and hone their products and services to larger markets. The City of Austin subsidizes much of the program cost to help small companies access the lessons that can lead to expansion and job creation. The first session of the second cohort begins September 12 and runs through November. Mentors are currently being sought to attend monthly networking events, during both the instruction and the aftercare phase, to provide entrepreneurs with feedback, advice, and collaboration. Interim Director Gregory Pogue leads the program. In an information session for entrepreneurs, he explains, “Our role is to help you and your company bridge the gap between where you are now and where your potential can take you.”

To participate as a mentor in the FASTforward program, please contact Coral Franke, coral@ic2.utexas.edu; 512.475.8947.

“‘Our role is to help you and your company bridge the gap between where you are now and where your potential can take you.’”

— G. Pogue
New IC² Institute Fellows

In April, four new colleagues and peers of the Institute were named as IC² Fellows. Photo by C. Franke.

Nikhil Agarwal serves as CEO for Innovation, Government of Andhra Pradesh. He was recently awarded the Innovation Award for “Excellence in Promoting Innovation in Governance” by the Government of Rajasthan. He is former President and CEO of Cambridge Global Partners, an alumnus and lecturer of the University of Cambridge, alumnus and researcher of the University of Edinburgh, and lecturer at Virginia Tech. He has published over 70 research papers. Nikhil is founder of Entrepreneur Cafe, providing an impressive array of education and networking to its 35,000 participants. He writes a column in the Economic Times and Times of India, the most circulated English newspaper in the world. Nikhil has been an advisor to the World Entrepreneurship Forum, United Nations Global Alliance on ICT & Development.

Darius Mahdjoubi is an adjunct professor in the Faculty of Entrepreneurship of the Institute of Technology, where his research focuses on technological innovation and entrepreneurship. In April, four new colleagues and peers of the Institute were named as IC² Fellows. He will explore institutional factors that contribute to the development of a high-tech entrepreneurship ecosystem.

Shri Harkesh Mittal is Advisor to the Ministry of Science and Technology, Government of India, and head of National Science and Technology Entrepreneurship Development Board (NSTEDB). He has been instrumental in promoting Indian entrepreneurs ranging from simple rural industries to high-end technological enterprises. He has made the innovation and entrepreneurship program of Department of Science & Technology a much sought-after program by individual entrepreneurs as well as by industry— not only in India but among the industrially advanced countries of the world.

A. Didar Singh is the Secretary General of Federation of Indian Chambers of Commerce and Industry (FICCI). He is a renowned author and in November 2002 he retired as Secretary to Government of India in the Ministry of Overseas Indian Affairs. He also served in the Ministry of Science and Technology and on the boards of several state-owned enterprises. He holds degrees from St. Stephens College, Delhi; a Masters in Development Administration from Birmingham University, UK; and the distinction of having completed the first PhD in India on the Policy and Administration of e-Commerce (Panjab University, 2006).

As he finalizes his doctoral dissertation, Bryan Stephens works as a Graduate Research Assistant, pursuing research in social physics and network analysis with John Sibley Butler. Stephens was introduced to the Institute when he took Butler’s course in Technology Transfer and Incubation, where he became intrigued about the subject of social physics, and lingered after class for extended discussions. Their most recent journal publication shows Stephens as the lead author (see pg. 32 for published figure and citation). Stephens says that his work at the Institute helped him to focus his wider research focus which is to pursue academia in the field of social physics in quantitative analysis and network analyses. “I would be ‘no where’ without Dr. Butler’s help. It’s been intellectually invaluable, of course, but also supportive in all dimensions— research, but also all other aspects.” Photo: A. Garef

Visiting Scholars 2017 January through June

Jing Wang is a PhD candidate in the School of Management and Economics at Beijing Institute of Technology, where her research focuses on technological innovation and strategic management. While at the IC² Institute, she will explore institutional factors that contribute to the development of the science and technology service industry and comparisons between China and the United States.

Aura Pedraza-Avella is a Professor at the School of Business and Industrial Studies of the Universidad Industrial de Santander, Colombia, where she teaches and conducts research on entrepreneurship and labor market outcomes. While at the Institute, she is researching factors that contribute to the development of a high-tech entrepreneurship ecosystem. Part of her academic curriculum was also to join the Converting Technology to Wealth program last fall.

MSTC Students Find a Perfect Fit with GCG

The IC² Institute developed the Master of Science in Technology Commercialization (MSTC) degree program to help train entrepreneurs and managers of innovation to move new technologies from the laboratory into the global marketplace. For more than a decade the program was transferred to the McCombs School of Business. It is therefore not surprising that today’s MSTC students find internships at the Institute to be valuable.

Damjan Kochav is a 2017 MSTC graduate who became a member of the Intern Support Research Team for the double-blind study and report, “The Science of Prediction: A Battery of Blind Back-Dated Validation Tests of PredictionWorks’ New Venture Assessment System,” with John Sibley Butler and Gary Cadenhead from July to November 2016. Kochav conducted a technological deep dive focused on M&A profiles and case studies dealing with Ball, BiAC and hybrid companies that were either building or acquiring new ventures with a Product/Service framework offered as a Technology as a Service (TaaS), Infrastructure as a Service (IaaS), Platform as a Service (PaaS) or Software as a Service (SaaS). “PredictionWorks’ New Venture Assessment Becomes a S-30X game changer,” Kochav said. “Its assessment system was found to be a 100 percent reliable predictor of new venture success/failure. The test was double blind in nature and consisted of ten Salvador Alanis awards Damjan Kochav a certificate of appreciation for his work with the Global Commercialization Group. Photo: Alan Malvich
"I am grateful for the opportunity to travel to South Korea and experience their culture and professional domain, and I look forward to engaging in the dynamics that allow our Korean counterparts to succeed in US markets.” — Bridget Hill, MSTC

backdated business plans in which $400M of capital had been invested and from which PredictionWorks predicted with 100% precision which businesses would succeed or fail. From September 2016 to May 2017, Kochav also worked on GCG projects with the Korean Advanced Institute of Science and Technology (KAIST), the Province of Jeollabuk-do, and the City of Jeonju, Korea to identify and select mid-size Korean companies for global market business development.

Breye Perkins took the course RHE321 Entrepreneurial Writing: Lights, Camera, Action! Storyboarding for Entrepreneurs, taught by Gregory Pogue. The course paired the students with entrepreneurs in the IC² Institute FASTForward program, to help the companies develop the stories that define their core values, long-term goals, and explore branding rhetoric. As a Junior majoring in Rhetoric and Writing, Perkins found the course to be a departure from her typical coursework.

"After taking the storyboarding course, I started looking into Communications as a minor, and I’m taking an Advertising Online class right now. It is so much fun. The class helped me realize that I enjoy working with these small businesses...and helping them build on their ideas.”—Christian Deanes, left, with Breye Perkins. Deanes and Perkins both took the RHE321 course taught by Gregory Pogue. Photo: C. Franke.

Impact Studies: Texas Public Libraries and Texas Military Department


Texas Public Libraries

In addition to books and periodicals, libraries serve as access to digital repositories; entry point to online journals; source of scholarly articles; and additional economic activities by rippling through the state, the total economic impact of TMD’s FY2015 operations exceeded $500 million. According to IMPLAN, for FY2015, approximately $249 million in state and sub-state tax revenue was generated by TMD operations.

The complete report is available at https://repositories.lib.utexas.edu/handle/2152/45666.

Economic Impacts in 2015

Texas Military Department

In 2015, the Texas Military Department’s (TMD) employment, employee income, and spending/expenditures were $740 million, with more than $70 million from TMD employee salaries and wages. Because TMD’s salaries, wages, and other spending sets off additional economic activities by

Other Student Paths to the IC² Institute

There are many paths by which students can find their way to the IC² Institute for connections in research and internships in business development, business incubation, and more—and every student carries a unique story of the Institute’s impact on their education.

The I-Corps and SEAL programs connect with student entrepreneurs, while internships can help connect students to any aspect of the Institute’s work, from economics research with the BBR, to helping incubate companies at ATI, and conducting quicklook research with the GCG. The Institute’s front desk is usually manned by student workers.

Other students connect through courses that are linked to the Institute, or with a faculty member on research that is sponsored by the Institute. One course currently linked to the Institute includes a Policy Research Project course for students at the LBJ School for Public Policy. David Eaton and David Gibson are supervising student research that, for some, will include traveling to Japan or Nepal. The research subjects include “Sustainable Forest Resource Commercialization: Dogo, Oki Islands, Japan,” and “Post-Earthquake Reconstruction in Rural Nepal.”

The Institute is creating new opportunities to engage in its action-based research, and making new efforts to capture the stories of the students that pass through its influence (and who in turn, influence the IC² Institute). The Research in Entrepreneurship and Commercialization Challenge (REACH) program

Academic Publications (December 2016 through June 2017)

effective programs to serve victims of sexual assault and misconduct, and with new knowledge, we can and must do better. The findings of this study shine a brighter light on sexual assault and misconduct that affects UT students and give us a deeper understanding of how to address these problems.”

The reports are available at https://www.utsystem.edu/sites/clase/clase-www/Thps:/ /e reports are available at h

Human Trafficking in Texas
Also with IDVSA, the BBR helped research the report, "Human Trafficking by the Numbers: The Initial Benchmark of Prevalence and Economic Impact for Texas." Human Trafficking involves the use of force, fraud, or coercion to obtain some type of labor or commercial sex act. The study identified approximately 79,000 minors and youths as victims of sex trafficking in Texas, while approximately 234,000 workers are victims of labor trafficking, bringing the total to an estimated 313,000. Traffickers exploit $600 million from these victims annually, and minor and youth sex trafficking costs the state $6.6 billion.

The complete report is available at https://repositories.lib.utexas.edu/handle/2152/44597.

Sanjani Prodduturu graduated in May with a Bachelor of Science degree in Chemical Engineering, and a certificate in Business Foundations. She speaks four languages: English, Hindi, Spanish, and Telugu, and worked as a part time receptionist at the front desk of the IC² Institute from June 2016 to May 2017. Outside the auspices of the IC² Institute, Prodduturu also worked as an engineering student tutor and volunteered for Girlsstart, the Boys and Girls Clubs of America, and Helping Hands. While at The University of Texas at Austin, she received honors and awards including the Safety in the Chemical Process Industries Certificate, the Chevron Phillips Chemical Scholar, University Honors, and the Women in Engineering Scholarship. In June, Prodduturu took the position of engineer with Samsung. http://ict.org/leaders/summer2017.

is a new program designed to link students to the international projects of the Institute. REACH provides students support to become familiar with topics and issues related to technology commercialization and to plan a research study related to institute programs or technology commercialization in general. More information on the ongoing REACH program is at http://ica.utexas.edu/reach/.

IC² Leaders of Today

Sanjani Prodduturu

Leaders of Tomorrow

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BBR and IDVSA Release Reports on Cultivating Learning & Safe Environments (CLASE) Across the University of Texas System and Human Trafficking by the Numbers

CLASE: Across UT System

The Bureau of Business Research (BBR), working with the Institute for Domestic Violence and Sexual Assault (IDVSA), has released both aggregate and individual university reports for Cultivating Learning and Safe Environments (CLASE) across the University of Texas System. Data was collected from students at every institution in the UT System to provide a detailed and holistic understanding of the prevalence and perceptions of sexual harassment, stalking, dating/domestic abuse and violence, and unwanted sexual contact.

The survey is part of a $1.7 million multi-year study spearheaded by UT System Chancellor William H. McRaven and was conducted by UT Austin’s Institute on Domestic Violence & Sexual Assault, led by Director Noël Busch-Armendariz. The study is groundbreaking because it: 1) uses both qualitative and quantitative research data to better understand, address and reduce acts of sexual harassment, stalking, dating/domestic abuse and violence and unwanted sexual contact on UT campuses; and 2) includes a longitudinal component in which researchers will repeatedly survey a select cohort of students to help understand their knowledge, attitudes and experiences over the course of their college careers.

“If we want to understand and continuously improve our campus culture in order to facilitate student success, then we have to be open and honest about our students’ experiences beyond the classroom, no matter how uncomfortable it is,” McRaven said. “I’m pleased that UT institutions have numerous

Student Survey Snapshot

The results of the CLASE survey are representation of all students since their enrollment at a UT institution. 13 UT institutions participated in the CLASE study.

UT System-wide survey about campus sexual assault and misconduct:

- Provides data about real problems and opportunities for improvement
- Sets a benchmark to assist in evaluating future progress
- Promotes conversation about shared responsibility for cultivating learning and safe environments

Key Challenge: Students are not disclosing

- 72% of victims attending academic institutions did not tell anyone about the incident
- 77% of victims attending health institutions did not tell anyone about the incident
XLR8 is a cloud-based infrastructure-as-a-service (IaaS) platform that offers on-demand services to businesses and consumers. It provides a wide range of services, including digital marketing, technology consulting, and personalized services.

### Features
- **On-demand services:** XLR8 offers a variety of services on-demand, such as marketing services, technology consulting, and personalized services.
- **Flexible pricing:** The platform offers flexible pricing options for businesses and consumers.
- **Customizable services:** XLR8 provides customizable services to meet the needs of businesses and consumers.
- **Sustainable energy:** The platform uses sustainable energy sources to power its operations.

### Key Benefits
- **Cost-effective:** XLR8 offers cost-effective services to businesses and consumers.
- **Efficiency:** The platform offers efficient services to businesses and consumers.
- **Sustainability:** XLR8 uses sustainable energy sources to power its operations.

### Use Cases
XLR8 can be used in a variety of industries, including:
- **Retail:** For marketing services and technology consulting.
- **Manufacturing:** For sustainable energy solutions.
- **Healthcare:** For personalized services.

### Conclusion
XLR8 is a cloud-based IaaS platform that offers on-demand services to businesses and consumers. It provides a wide range of services, including digital marketing, technology consulting, and personalized services. With its flexible pricing options, customizable services, and sustainable energy sources, XLR8 offers businesses and consumers cost-effective, efficient, and sustainable solutions.

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The following companies and products are enrolled in XLR8's second cohort company.

* A.K. Diabetic Herbal Pvt. Ltd.: An icon nano catalyst for higher income from ethanol manufacturing industries.
* Advanced Biotech Research Projects: Increased farm crop productivity using advanced biotech formulations.
* AGPLSE Pvt. Ltd.: Ayurvedic plant medicine acting as organic pesticide without affecting the biodiversity of farms.
* Dass Scientific Research Labs Pvt. Ltd.: Teaching of advanced mathematics concepts through the use of technology.
* Daya Foods: A novel food supplement from natural sources for feed cattle, leading to improved milk production and reproductive health.
* DAZL: Fashion jewellery with a focus on sustainability.
* IDOS Indus Pvt. Ltd.: A cloud-based accounting software with in-built compliance that enables real-time internal audit of transactions and provides accurate business intelligence to facilitate decision making.
* Imagine: Nupspace is a 3D remote collaboration platform that emulates real world interaction, using Virtual Reality & Augmented Reality technologies in training, planning, and other applications.
* Jankajani Raa: Green route reinforcement of cloth fibers with patent nano particles for antimicrobial, self-cleaning, and other applications.

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**Learnitude Technologies: Efficient ERP and product development for SME sectors.**

**M/s Rope production Centre:** Cost-effective rope spinning machine for extracting fiber from banana pseudostem.

**MakeYourFit Pvt. Ltd.:** Augmenting Virtual Reality (VR) technology for custom fit fashion.

**N P Komala Revenuda: ICT-based training methodologies imparting English communication skills to the rural populations.**

**Octapace Engineering Services Pvt. Ltd.:** Foam controlling technology that is cost-effective for small and medium scale enterprises which also offers affordable marketing services to customers.

**Talburis Biotech India Pvt. Ltd.:** A new generation of nematicides, adapting integrated pest management strategies mainly targeting the root knot nematode Meloidogyne incognita.

**Towny App: Mobile App for hyper-local social network to avail services like food delivery, groceries, medicines and movie tickets.**

**V.V. Lakshmi:** Organic manure from keratinase enzyme-treated feather waste.

**V.K. Lakshmi:** Organic manure from keratinase enzyme-treated feather waste.

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**Soni jaya Healthcare Solutions: Eco-friendly and cost-effective disposable shaving brush with organic bristles.**

**Sundee Kop: Cost-effective WiFi devices for small and medium scale enterprises which also offers affordable marketing services to customers.**

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**Venugopal Subramaniam:** Vegetable manure from banana pseudostem.

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**Gautam Prasad:** Fermentation involving the use of banana pseudostem.

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**Kapil Prasanna:** Improved feed for small and medium scale enterprises which also offers affordable marketing services to customers.

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**Telluris Biotech India Pvt. Ltd.:** A new generation of nematicides, adapting integrated pest management strategies mainly targeting the root knot nematode Meloidogyne incognita.

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**McKenna Talley:** Graduate Research Assistant for Human Trafficking Impacts in Texas

This article is based on an interview conducted March 7, 2017, with McKenna Talley, who works with the Institute on Domestic Violence & Sexual Assault (IDVSA) and the Bureau of Business Research (BBR). In December 2016, IDVSA and BBR released the report “Human Trafficking by the Numbers: The Initial Benchmark of Prevalence and Economic Impact for Texas.”

Originally from North Carolina, McKenna Talley is now firmly grounded at The University of Texas at Austin. “I never thought I’d move to Texas, but here I am, and I love it!”

Why UT? “The Social Work program had everything that I was looking for. It gives you a lot of experience in the field, which is really important to me.”

As Graduate Research Assistant at the School of Social Work, over the past year, Talley has worked on two large scale research projects to help count the social cost of human exploitation. One study explores the impact of sexual assault on university campuses; the other study describes the impact of human trafficking in Texas.

**Identifying the Victims**

Human Trafficking involves the use of force, fraud, or coercion to obtain some type of labor or commercial sex act. Identifying the victims to arrive at hard numbers is a challenge in itself. Where does one search for statistics that do not yet exist, or for victims who do not want to be identified? As the report states, “fundamental to this challenge is the hidden nature of the crime and the need for far deeper understanding of than what it is visible.”

“People often think of trafficking as moving people around, but it can just as easily be exploiting people where they’re at,” Talley explains. “We decided, as a team, to look at areas of the populations that are at risk... my research included trying to find all those numbers for all those community segments.” These at risk populations examined for the current report include:

- For minor and youth sex trafficking: recorded victims of child abuse and maltreatment, at-risk youth being served by the Texas Department of Family and Protective Services (DFPS), and homeless minors and youth.
- For labor trafficking: migrant farmworkers, cleaning services, construction, kitchen workers in restaurants, landscaping workers, and groundkeepers.

It is important data-mining research because, while policy makers and administrators may have compassion for victims of sexual assault or human trafficking, that compassion can be hard to quantify when it comes to carving out budgetary dollars to deliver solutions for a problem that is incognito. "Cost research" challenges aptly with two hard numbers: how many victims are affected, and the financial cost that society pays as a result.

The work requires cooperation between two types of researchers: social workers and economists. Talley has been working with Matt Kammer-Kerwick at IC³’s Bureau of Business Research. “I have learned research techniques from Matt that will help me long after I leave the University,” she explains.

Viewing the problem through both a quantitative and qualitative lens provides a view that lends dimension to the problem—perceiving both the pathos of an individual’s experience as well as the numbers that lend a holistic view for how these activities impact society.

Best of all, translating the cost to a dollar figure can help inform society to take action. And that touches the social worker’s heart in McKenna Talley. “There are victims living in dark places all over our state,” she says. “I love doing this research because it gives me the opportunity to bring light into those dark places.”

"There are victims living in dark places all over our state. I love doing this research because it gives me the opportunity to bring light into those dark places."

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See related articles, pages 16 and 25.
Creating Emotion Recognition Technology

Eric Menees: Triple Major at UT, Entrepreneur & IC² Enthusiast

This article is based on an interview conducted February 15, 2017, with Eric Menees, a senior in mechanical engineering, biochemistry, and neuroscience at The University of Texas at Austin.

Eric Menees thinks a lot about changing the world. It’s a vision he owns at a personal level. His long-term research goal is the extension of human life, and his focus is to expand the capacity for interface between the human brain and computers—an interest that he has pursued with a triple major in mechanical engineering, biochemistry, and neuroscience. (Think: a lot of hard science.)

Menees spent his high school years building robots, and since his arrival at UT Austin, his interest has shifted to human-machine interfaces. “I’ve worked with a project using an EMG sensor to look at muscle signs while performing a certain task, and trying to define an algorithm that will predict fatigue, so it could tell you, ‘Hey, you’re about to do something that will damage your muscle long term; you need to stop and take a break.’” (Think: no more tennis elbow)

Emotion Recognition Technology

Menees is founder and CEO of Cervello. He and his team are developing earbud tips for everyday headphones that capture and process information including brainwaves, heart rate, motion, location, and relevant history. As the earbuds constantly analyze these streams of information, they build awareness of your context, emotions, and habits.

They call it emotion recognition technology, and its potential for extreme personalization and product customization is astounding. At the tip of this individualization iceberg is predictive music programming and e-learning. The automated business intelligence market looks larger. Emerging market applications give the technology a massive potential that, at this point, can only be imagined.

And, while other ventures have developed low-accuracy EEG wearables, Cervello is the first to package a high-accuracy sensor in a consumer-friendly form factor that immediately processes the data into meaningful trends. Similarly, current industry leaders in rapid deployment of machine learning products, like Apple’s Siri and Amazon’s

XLr8AP Continues to Gain Momentum in Tirupati

The XL8 Andhra Pradesh Business Incubator, launched only last September, is already gaining a strong reputation for positive results. And while “Almost every business school [in India] has taken a step forward in forming an incubation center for aspiring student entrepreneurs,” Entrepreneur India named XLr8AP among the top six government-recognized incubator programs in India today.

XLr8AP publishes a list of robust goals. In its first 16 months, the technology business accelerator plans to recruit and screen at least 400 companies; train and develop at least 132 companies: accelerate at least 16 new ventures into domestic or global markets; and train more than 400 entrepreneurs and more than 200 students and faculty.

IC² Institute’s Glenn Robinson, managing director of XLr8AP, has made a strong start against those goals. The first cohort of 33 entrepreneurs trained from September 19 through January 18. The Hans India (on March 4) reported that these companies created 35 new jobs in Andhra Pradesh, and that several were engaged in advanced discussions for funding.

Antony Alappatt, of the MasterKube entrepreneurial team, told The Hindu India, “My first day, I was not even able to define technology in simple words. The few months in XLr8AP changed my outlook. Now, I don’t talk technology; I can effectively communicate and persuade, and my presentations are much more effective. I was able to get a collaboration opportunity with a giant multinational company, thanks to the work the XLr8AP team put in shaping MasterKube communication. I would recommend any budding entrepreneur to be part of XLr8AP. It is invaluable.”

Regional entrepreneurial momentum will continue to build as the ecosystem becomes enriched with the faculty, students, and entrepreneurs, as well as customers, employees, and service providers of...
(Continued from p. 20)

create and achieve milestones to bring their companies to the market. A key part of the Nexus methodology is to “get out of the building” to collect real market data and seek out the voice of the customers. The first portfolio of companies is strong. Best Deals (a company headquartered in Gurugram) has already secured $150,000 in angel investment for the product Escrowffer.

After the initial four months, four companies will be selected to stay at Nexus for a longer, more in-depth incubation period. These companies will have full access to the incubator facilities and network for up to an additional eight months. During this time mentors will work with the entrepreneurs to take their companies to the next level: getting their products to market, growing their customer and revenue bases and, when appropriate, working to locate funding for scaling operations and market growth.

Director Anulay says, “This is a new vision for the American Center and the State Department and I am very excited about this opportunity. If successful, not only will this incubator become a permanent part of the American Center in Delhi, but the model will also be expanded to other Consulates in India and American Centers/Embassies around the world.”

— For more information Please visit the Nexus website at http://startupNexus.net/

Partners in the Nexus effort include the Federation of Indian Chambers of Commerce & Industry (FICCI), the Indian Angel Network, the Indian School of Business, TIE Delhi-NCR, The American Chamber of Commerce (AmCham), CoworkIn, Grant Thornton India, and Startup India.

Alexa, are pushing the envelope in customizing products for the services they offer.

“……”Menees explains, “by putting customization in native environments connected to your biomics and body data, so we can understand you as an individual.”

Menees adds, “The goldmine is real-time app customization. Say that we have the same app — but mine is looking at my body and yours is looking at your body—and my experience is completely different from your experience. It’s tailored to me. It’s tailored to you. People want that. And we can do that.”

IC² Institute Enthusiast

“I became aware of IC² in the summer after my sophomore year through the Student Entrepreneurship Fellowship opportunity,” Menees explains. “I’d always wanted to work on changing the world and they seemed to be saying We’ll teach you the skills to do this in an actual hard data way, which was nice.” Since then he’s been involved with the Institute through both regional and national I-Corps programs, ATIS SEAL program, the FASTforward program, and more.

One of the first things he learned was how to interview potential customers to help determine a company’s value proposition. Perhaps the second thing he learned was to pivot when that value proposition seemed to be non-existent. “And I’ve pivoted many times since then,” he admits sagely.

Over time he has cycled from one IC² program to another—and from one startup venture to another. He is accumulating the lessons of a seasoned entrepreneur... lessons that bring the theoretical into the practical such as:

- When to set an idea aside, and how to reimagine a technology into a new market concept
- Managing team dynamics, including “everyone gets mad”
- How to work with entrepreneurs as a consultant
- How to articulate a company’s core values.

Menees takes an extraordinarily long view. Success for his current startup is merely a milestone along his longer path. He talks about “giving back” as a UT alum. But that is another milestone as well.

“What I want to do long term,” he explains, “is life extension. I thought I was going to do that through research. But one person in a lab! That’s not going to make a big difference. If I could put 300 people in a lab? That shifts the time scale… that’s realistic. So, if I can continue with my start-up, make the proper venture capital connections... Yes. Then I can change the world.”

(Think: totally.)

— M. Cotrofedi with Eric Menees

The first Nexus cohort to receive pre-incubation training and mentoring includes the following companies:


BindassParty is a party and event marketplace that makes partying easier. A “Do It Yourself” catering, venue and booking engine for small events and an inexpensive concierge service for large events. bindassparty.com.

Chakra Innovation has developed a pollution control device that captures up to 90% of pollutants emitted from diesel generators. Along with controlling emission at the source, the technology collects the particulate matter to be recycled as a raw material for inks and paints, rather than disposed of as waste. www.chak.in.

Dhakka Brake provides a retrofit device that captures momentum while braking and provides an initial push of the vehicle upon release of the brakes. This technology makes starting the cyclerickshaw effortless and has potential to improve safety and stability of the 8 million cycle rickshaws and the associated traffic in India.


Apple Snacks is a fruit-based packaged snack. The snack mimics the fresh fruit eating experience using minimally processed fruits with less sugar and no artificial preservatives. Fruit Snacks retains a fruit’s natural taste and texture, providing a Healthy yet Indulgent consumption experience.

Morphedo is an online 3D Printing services platform for rapid prototyping and customized part manufacturing for businesses. It provides customers with one-stop online access to evaluate and purchase various 3D printing and design services. www.morphedo.com.

Rayens Enser is a clean-tech startup managing waste by converting end-of-life waste plastic which cannot be recycled further, into synthetic fuels for industrial use—thus reducing dependency on natural hydrocarbons and also curbing the presence of plastics as a major source of environmental pollution. www.rayens enserv.com.

S4S Technologies is a for-profit, research-based enterprise, focused on developing sustainable food preservation technologies. In the food value chain S4S is present at multiple points—from developing food processing technology and manufacturing food processing machines, to the sale of processed food. The Solar Conduction Dryer (SCD) is S4S’s flagship product that is already being used by more than 1,200 farmers in eight countries. SCD is used to dehydrate a range of agri-food products for both farm and commercial operations. s4stechnologies.com.


Venktesh Biosciences has developed “Swasth DHA,” a vegetarian water soluble DHA Powder which can be used to fortify nutraceutical/health products with DHA (omega 3 fatty acid) extracted from algae. VIB also develops consumer-centric nutraceutical products for end-user DHA supplementation using Swasth DHA. www.venkteshbiosciences.com.

Incorporate context through the use of location.

BRAIN WAVES

Analyze your alpha and beta waves to determine your mood.

HEART RATE

Match the tempo of your heart to the tempo of your song.

MOTION

Act as your personal assistant to detect your habits.

LOCATION

Utilize personal trends to better your music experience.
IC² Institute Fellows Conference 2017: 40 & Forward

April 27-28, in the company of its Fellows & staff, the IC² Institute celebrated its fortieth year, as well as the 90th year of the Bureau of Business Research, and the centennial year of the Institute’s founder, George Kozmetsky. But while celebrating the past, the Fellows sessions were forward focused, facing the future of the IC² Institute, as expressed in the theme, “40 & Forward,” and in an image of acceleration toward a burnt orange horizon.

IC² Institute Fellows are premier peers of the Institute, an honor given to individuals who promote the ideals and programs of the Institute in pursuit of their own careers. Drawn from government, business, and industry, Fellows have served as a pool of advisors and colleagues who often work shoulder-to-shoulder with the IC directors and staff. Over the four decades of the Institute’s history, the Institute has accumulated nearly 200 active Fellows who exhibit premier talent in their fields of expertise and high collaboration with the Institute. The earliest fellows were named by the founder, George Kozmetsky. Others were named by the subsequent directors of IC². Fellows who attended the 2017 conference share a high appreciation for IC²’s history, as well as interest in being part of its future.

IC² Institute Impact

The meetings opened with a tour of the IC² Institute on the afternoon of Thursday, April 27, and an update on current activities and events. Interim Director Gregory Pogue escorted fellows through the central offices at 2815 San Gabriel. An evening reception followed, at the AT&T Educational Center.

Friday morning Mayor Steve Adler opened the meetings with an official welcome to the City of Austin. UT Austin Vice President for Research Daniel Jaffe also provided opening remarks. A panel discussion followed, titled “Impact — Campus to Community,” moderated by John Sibley Butler, who directed the Institute from 2002 to 2013. Members of the panel included Lee Cook, William Cunningham, Kay Hammer, Laura Kilcrease, Pike Powers, Charles Teeple, and Glenn West. The discussion detailed the role of the IC² Institute and the development of the Austin entrepreneurial ecosystem. The panel members were selected as leading members of the Austin community who were actively engaged in the development of the Austin Model under the leadership of Dr. Kozmetsky and the IC² Institute. They discussed the Austin Model in terms of vision, how it was realized through definable actions, examples of outcomes and impact, and learnings that are relevant to Austin’s future growth.

A second panel discussion titled “Impact — Campus to International” followed, moderated by Senior Research Scientist and Associate Director David Gibson. Panelists included Corey Carbonara, David Eaton, Robert Hodgson, Michael Hough, Fred Phillips, Raymond Smilor, Brad Zehner, and Carlos Ross. The panel discussed the key transferable components of the Austin Model to international settings, areas that require adaptation for cultural fit, key programs and activities, and examples of outcomes and impact.

“The Institute was discussed in terms of its role as being key in helping to shape the Austin technopoli,s and the interest abroad in pursuing George’s vision of linking academia, government, and business sectors for technology-based growth,” said Associate Director David Gibson.

After lunch, UT Austin President Gregory Fenves welcomed the fellows and introduced IC² Institute Fellow and Nobel Prize laureate Finn Kydland. Kydland provided opening remarks. A panel discussion followed, titled “Impact — Campus to Community,” moderated by John Sibley Butler, who directed the Institute from 2002 to 2013. Members of the panel included Lee Cook, William Cunningham, Kay Hammer, Laura Kilcrease, Pike Powers, Charles Teeple, and Glenn West. The discussion detailed the role of the IC² Institute and the development of the Austin entrepreneurial ecosystem. The panel members were selected as leading members of the Austin community who were actively engaged in the development of the Austin Model under the leadership of Dr. Kozmetsky and the IC² Institute. They discussed the Austin Model in terms of vision, how it was realized through definable actions, examples of outcomes and impact, and learnings that are relevant to Austin’s future growth.

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Around the Globe

McCombs MBA Students Visit Nexus

As one of its first activities, Nexus hosted a group of international MBA students from McCombs School of Business, The University of Texas at Austin on March 31. The UT students visited the startup hub to meet entrepreneurs and innovation stakeholders in the Indian state of Delhi, and to gain firsthand knowledge of the realities starting a company in India and New Delhi.

UT Professor Kishore Gawande led the trip to help reinforce the principles in his course Global Political Economy (BGS374 and BGS380E). The course explores how firms can integrate traditional strategies with non-market strategies in the global arena, i.e. engaging with international non-market actors such as foreign governments, regulators, political parties, NGOs, and the media.

The course also examines tools to craft successful firm strategies in diverse institutional and political environments. The Nexus Startup Hub provided a perfect learning opportunity for the students, including those who were already familiar with Indias entrepreneurial landscape. One student said, “The ecosystem has changed over the last few years. India is going big on [ecosystem development] and I am happy to be here, learning how these people are working on their different startups, and the brilliant ideas they have.”

Originally from India himself, Gawande said, “It was an informative visit, and an eye opener for me personally, regarding the evolving start-up ecology. We heard from four budding entrepreneurs: one pursuing social impact, one seeking to connect policymakers with issues on the ground, a team that was seeking to design medical products for the US market, and another who has started financial products related to bitcoin (obviously for high net worth individuals).

“These are highly educated young people with skills that would get them well-paying jobs in industry,” Gawande continued. “But they are choosing instead to go on their own. Another pleasant surprise is the participation of women in start-ups; two of the [four] entrepreneurs were women. Also, their motivations were different from the want-to-attract-venture-capital-money-to-scale-up, to creating value for the public.”

Nexus Director Erik Azulay found the experience provided positive interactions for the entrepreneurs as well. “Now that we have our first cohort, we’re looking forward to finding ways to work with [UT international MBA students] on a deeper level come the fall.”

—E. Azulay & M. Cotrofeld with K. Gawande
IC² Institute Opens a Second Technology Incubator in India

In March, the IC² Institute opened a second technology business incubator in India at the American Center in New Delhi. As director of the Nexus Startup Hub and Incubator, Erik Azulay has taken residence in New Delhi as the official man on-the-ground from The University of Texas at Austin.

Nexus is a collaboration between the American Center and the IC² Institute to showcase the best of American and Indian entrepreneurship, innovation, and technology commercialization. Nexus serves as a central hub for entrepreneurs, innovators, faculty, government agencies, industry players and funding organizations interested in gathering, interacting, and collaborating to promote Indian Startups and the local entrepreneurial ecosystem.

The incubator offers selected start-ups unparalleled access to networks of industry and government partners, training from the top commercialization experts around the world, an extensive mentor network, as well as access to both private and public fund managers specializing in supporting startups. Through its affiliation with the University of Texas, Nexus can also partner startups with entrepreneurial teams in Austin to collaborate on creating a successful path to the market.

In an interview with India’s Sain magazine, Azulay said, “The vision is to serve as a focal point for kick starting the innovation ecosystem in New Delhi. India has become a hub for worldwide innovation.”

but in New Delhi and other cities, the overall ecosystem hasn’t really gelled and started working together yet. Nexus is based on showcasing best practices and serving as a center to attract everyone involved in the entrepreneurial ecosystem, so they can really start talking with each other.”

The American Center

Located in downtown New Delhi, the American Center is where the US Embassy conducts people-to-people diplomacy in New Delhi. A space for dialogue between the United States and India’s citizens, the Center offers a wide variety of programs aimed at stimulating discourse between our two nations, from cultural events such as film festivals, art exhibits and concerts, to speaker series addressing the day’s topical issues.

The American Center hosts approximately 600 visitors a day. It is one of the more than 700 American Spaces that form a worldwide network of in-person engagement platforms where visitors learn about the United States through cultural experiences, conversations, collaboration, and self-discovery.

First Nexus Incubator Cohort

Companies do not pay for participation in the Nexus incubator and Nexus does not take an equity stake. During the program, entrepreneurial teams have access to a co-working space, as well as access to office infrastructure services.

Applications from across India were accepted, and 115 companies competed for only 12 slots in the Nexus incubator’s first cohort. Each company will bring two team members into Nexus to undergo a four-month “pre-incubation phase” of entrepreneurial training including classes, workshops, and day-to-day mentoring.

Nexus promotes “SMART” objectives: Specific, Measurable, Attainable, Realistic, and Time-bound—and hands-on training programs are delivered by both United States and Indian experts.

Entrepreneurial teams work with mentors to sharpen their value proposition, define their target market, get market feedback on their products/technologies and (Continued on p. 22)

In March, McCombs MBA students displayed their horns at the newly opened Nexus Startup Hub at the American Center in New Delhi. Nexus Director Erik Azulay (of the IC² Institute) is front and center. Photo courtesy of Nexus staff.

delivered a keynote address “Innovation, Capital Formation, and Economic Policy,” and discussed the adaptation of economic models from the past, through the present, and into the future.

A third panel discussion followed, moderated by Gregory Pogue on the subject “Impact and Insight” to discuss the future strategy of the Institute. The panel included staff members Salvador Alainis, Bart Bohn, Marco Bravo, Debra Dewonczyk, Esie Echeverri-Carroll, Mitch Jacobson, and Matt Kammer-Kerwick.

A post dinner program included “Remembering George Kozmetsky” presented by Bill Cunningham and Monty Jones. Jones is completing a biography of George Kozmetsky, and two chapters of the book were provided to the Fellows as a preview of the book that is scheduled for release later this year.

Saturday morning, the group convened to an address by Admiral Bobby Inman, “Inman’s View of the World.” The final discussion of the conference was moderated by IC² Associate Director Bruce Kellison. “What is the emerging role for IC² Institute in Austin’s future: The Austin Model 2.0,” in which the Fellows were invited to discuss ways in which they can more actively collaborate with the IC² Institute. Kellison came away impressed from the meeting. “One of the highlights for me was not only celebrating where we have come in the past 40 years, but also where we are going in the Institute’s next phase. Clearly the Fellows have played a big part in our research and programs throughout our history. But hearing how excited many of the Fellows are to be contributing to IC² projects in the future, and their desire to be engaged with us in the next few years, is so encouraging.”

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— Bruce Kellison
Celebrating the Centennial Year of George Kozmetsky

A futurist and a true visionary, the founder of the IC² Institute made tremendous impact on his surroundings, throughout a career in which he turned with ease between academia and developing high technology businesses. In creating the IC² Institute, George Kozmetsky devised a platform to pursue both of these passions together, toward the high goal of increasing regional wealth and raising the quality of life across all social strata and nations.

A detailed biography of the life of George Kozmetsky, researched and written by Monty Jones, is currently in press. The Briscoe Center at The University of Texas at Austin will release the book this fall.

ATI Works with Austin Community College to Establish Life Sciences Wet Lab & Incubator Space

The Austin Technology Incubator has worked with the Austin Community College Bioscience Incubator (ABI) from the early grantseeking stages, in hopes of establishing a biotech incubator with the benefit of wet lab space in Austin. This effort was realized January 31, when ABI cut the ribbon for its official opening. ABI was created to help new companies bridge the gaps in the "research to product" cycle, creating an innovative work environment for life science entrepreneurs by providing:

- Leasable wet lab space – from single benches to full labs with more than $1 million of advanced laboratory equipment and specialized clean rooms
- Startup business development - Entrepreneurs enjoy an IP-free zone with access to business consultants, workshops, investors, and industry partners
- Core laboratory and instrumentation - Central management of shared equipment & facilities reduces infrastructure costs
- Workforce education - Student internships and faculty collaborations develop a highly skilled workforce

If you are interested in learning more about the Austin Technology Incubator and what we can do for your company, please contact us at incubator@utexas.edu or visit our website at http://www.ati.austincc.edu/

All companies in the Austin Community College Bioscience Incubator are in the life sciences sector.

- Celling Biosciences is advancing the future of medicine through the innovation of point-of-care, autologous regenerative cell therapies.
- Curtana Pharmaceuticals is developing proprietary in silico technology for multi-pharmacophore screening.
- Environmental Quality Operations is a biological survey and environmental remediation company that brings modern molecular techniques to the field of environmental biology.
- Fabrico Technology is a medical device company and biotech company developing extracellular matrices for cranioplasty applications.
- IsoGen, Inc. is commercializing a proprietary bone marrow autograft concentration system.
- Kinetoschem is a synthetic organic chemistry company developing purification techniques to deliver pure products to customers.
- KJ Scientific is an environmental testing company that focuses on using new technology to analyze chemicals (pesticides, personal care products, consumer goods) for bioaccumulation potential that may affect human and wildlife health.
- NuCell is developing novel molecular diagnostic assays.

All companies in the Austin Community College Bioscience Incubator are in the life sciences sector.

- Private-public partnership - Supports new technology and innovation to accelerate the growth of the Central Texas economy
- Staff - Qualified staff provide critical expertise and operational support
- Collaborative space - Creates a supportive community that enables creative collaboration and life science innovation
- Contract research - Highly trained technicians and equipment support commercialization of products.

Funded by ACC and a $49 million grant from the state, ABI represents a partnered effort among Austin Community College, the Austin Technology Incubator and Texas Life-Sciences Collaboration Center (TLCC, an independent non-profit organization).

ATT Biotech Director, Dr. Cindy WalkerPeach, brings more than 20 years of biotech experience to ABI, including expertise in business development, partnerships, licensing, and regulatory and reimbursement strategy. She says, "Getting wet lab space can be a huge hurdle for startup companies in the biotech space. We’re excited about the difference this can make for the industry, region-wide, and we’re happy to be part of it."
ATI Hosts First Reverse Solar Data Hackathon

The US Department of Energy National Renewable Energy Laboratory (NREL), Energy Thought Summit (ETS), and the Austin Technology Incubator (ATI) partnered to develop and host the first Solar Data Reverse Hackathon in Austin, Texas. The event took place March 25 and 26 at Galvanize. The purpose of the Solar Data Reverse Hackathon was to connect Austin industry partners with local developers to solve problems related to solar development and deployment, by increasing industry and startup awareness around NREL and other datasets and resources.

NREL has established an array of data and analysis tools to help inform decisions in implementing solar solutions. These data sets and tools are available free to the public to help facilitate private sector solar development including new products and services to consumers. The hackathon model was developed to increase awareness and application of these free resources and help provide valuable feedback on the value and usability of these resources.

The hackathon was part of a larger effort by NREL to initiate a regional solar network in Austin that would, in turn, be part of a nationwide network. Participating local companies included Bracket Technologies, Indie Energy, Mercatus, RMI, Simply Solar, Sun Power, and Zpryme. Teams formed new partnerships that resulted in five innovative pitches that included visualizing opportunities for solar market growth, investigating local laws and incentives, and optimizing the interoperability of solar with batteries. Team pitches were presented to a team of judges, and Indie Energy provided the top-ranked presentations, taking prize monies of $1,500.

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Celebrating the Fortieth Year of the IC² Institute

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Relentless growth followed.
NSF Funds Workshops to Disrupt Illicit Supply Networks

New applications of operations research and data analytics targeted to end human trafficking

The National Science Foundation (NSF) has funded the Bureau of Business Research (BBR) and the human trafficking team at UT’s School of Social Work to hold two interdisciplinary workshops to explore the intersection of operations research methods and the problem of human trafficking. The interdisciplinary team of scholars seeks to identify promising research directions toward the disruption of illicit supply networks like human trafficking.

The workshops enable scholars from operations research, management science, analytics, machine learning, and data science to exchange ideas toward a research agenda for disruptive interventions against illicit networks. Workshop results aim to help move understanding of illicit systems from descriptive characterization and predictive estimation toward improved dynamic operational control. Operations research and data analytics are fields ideally suited to bring new perspective to the study of illicit networks including trafficking. Few studies have approached such illicit networks from a dynamic systems theoretical perspective, which allows the social justice challenge to be analyzed as a mathematical system in terms of decision variables to help guide, control, and constrain behavioral dynamics toward desired goals.

Inherently interdisciplinary, solutions to disrupt illicit networks typically involve shared effort across criminal justice, social work, social science, economics, healthcare, and law. Illicit networks are dynamic and victimize members of the community through both legal and illicit activities at the same time, which often obscures criminal activity from law enforcement. Such systems can be hierarchical, nonstationary networks of interconnected activities and participants that involve intersectional decision making by perpetrators, victims, and/or bystanders. Highly common among such systems is a paucity of data—largely due to the hidden aspects of the crime and the partial observability of the population of interest.

Professionally, I hope that the two conference events lead to additional NSF funding to address specific data and algorithmically-focused research streams that create disruption in illicit networks like human trafficking. Personally, I have never been more excited to apply the totality of my education and experience to develop solutions to such a significant societal problem.

— M. Kammer-Kerwick

The first workshop for “Disrupting Illicit Networks” took place May 5 – 6. The second will be scheduled in November or December, and will be announced on the calendar at www.ic2.utexas.edu.

IC² Institute Awards Research Grants to 11 UT Faculty Members

The IC² Institute is providing seed research funds for eleven “Insight to Innovation” projects proposed by tenured and tenure-track faculty from across The University of Texas at Austin. Designed to stimulate research and promote thought leadership in the disciplines that inform entrepreneurship theory and practice, each project involves direct collaboration with IC² Institute researchers. Some projects involve specific IC² Institute programs, such as the Student Entrepreneur Acceleration and Launch (SEAL) Program. Research outcomes will include collaborative research publications and cutting-edge additions to IC² Institute programs. The research projects receiving financial support include:

- The Prospects for Solar Scale-Up in India: Joshua Busby, Robert S. Strauss Center, LBJ School of Public Affairs; with Debra Dawsonczyk, Mitch Jacobson, and Gregory Pogue.
- Network Analysis of Entrepreneurial Ecosystems: John Butler, Dept. of Management, Red McCombs School of Business; with Gregory Pogue.
- Promoting Rural Technology Entrepreneurship Abroad: Lessons from Field Experiments in Japan and Nepal: David J. Eaton, LBJ School of Public Affairs; Dept. of Geography & the Environment and the Dept. of Middle Eastern Studies, College of Liberal Arts; Dept. of Integrative Biology, College of Natural Sciences; with David Gibson.

Identifying Opportunities in the Market: A Cognitive Investigation of Opportunistic Thinking in Emerging & Experienced Entrepreneurs: Arthur B. Markman, Dept. of Psychology, and Human Dimensions of Organizations, College of Liberal Arts; Dept. of Marketing Administration, Red McCombs School of Business.

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Value Proposition Iteration Strategies Deployed by Student Entrepreneur Teams: Clay Spinuzzi, Dept. of Rhetoric & Writing, Dept. of English, and Human Dimensions of Organizations, College of Liberal Arts; School of Information; with Gregory Pogue.


— C. Franke

Across the University
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The University of Texas at Austin IC² Institute Office of the Vice President for Research

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Across the University

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The University of Texas at Austin IC² Institute

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ATI Hosts First Reverse Solar Data Hackathon

The US Department of Energy National Renewable Energy Laboratory (NREL), Energy Thought Summit (ETS), and the Austin Technology Incubator (ATI) partnered to develop and host the first Solar Data Reverse Hackathon in Austin, Texas. The event took place March 25 and 26 at Galvanize. The purpose of the Solar Data Reverse Hackathon was to connect Austin industry partners with local developers to solve problems related to solar development and deployment, by increasing industry and startup awareness around NREL and other datasets and resources.

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Photos courtesy of Johana Levene (NREL) on Twitter.
IC² Institute UPDATE

A future and true visionary, the founder of the IC² Institute made tremendous impact on his surroundings, throughout a career in which he turned with ease between academia and developing high technology businesses. In creating the IC² Institute, George Kozmetsky devised a platform to pursue both of these passions together, toward the high goal of increasing regional wealth and raising the quality of life across all social strata and nations.

A detailed biography of the life of George Kozmetsky, researched and written by Monty Jones, is currently in press. The Briscoe Center at The University of Texas at Austin will release the book this fall.

Celebrating the Centennial Year of George Kozmetsky

ATI Works with Austin Community College to Establish Life Sciences Wet Lab & Incubator Space

ABI Celebrates Official Opening

The Austin Technology Incubator has worked with the Austin Community College Bioscience Incubator (ABI) from the early grantseeking stages, in hopes of establishing a biotech incubator with the benefit of wet lab space in Austin. This effort was realized January 31, when ABI cut the ribbon for its official opening. ABI was created to help new companies bridge the gaps in the “research to product” cycle, creating an innovative work environment for life science entrepreneurs by providing:

- Leasable wet lab space – from single benches to full labs with more than $1 million of advanced laboratory equipment and specialized clean rooms
- Startup business development - Entrepreneurs enjoy an IP-free zone with access to business consultants, workshops, investors, and industry partners
- Core laboratory and instrumentation - Central management of shared equipment & facilities reduces infrastructure costs
- Workforce education - Student internships and faculty collaborations develop a highly skilled workforce

Funded by ACC and a $49 million grant from the state, ABI represents a partnered effort among Austin Community College, the Austin Technology Incubator and Texas Life-Sciences Collaboration Center (TLCC, an independent non-profit organization).

ATI Biotech Director, Dr. Cindy Walker Peach, brings more than 20 years of biotech experience to ABI, including expertise in business development, partnerships, licensing, and regulatory and reimbursement strategy. She says, “Getting wet lab space can be a huge hurdle for startup companies in the biotech space. We’re excited about the difference this can make for the industry, region-wide, and we’re happy to be part of it.”

All companies in the Austin Community College Bioscience Incubator are in the life sciences sector.

- Iosistem, Inc. is commercializing a proprietary bone marrow autograft concentration system.
- Kinetochem is a synthetic organic chemistry company developing purification techniques to deliver pure products to customers.
- KJ Scientific is an environmental testing company that focuses on using new technology to analyze chemicals (pesticides, personal care products, consumer goods) for bioaccumulation potential that may affect human and wildlife health.
- MacMillan Learning provides a suite of solutions designed to improve student preparedness, engagement, and understanding in the laboratory.
- Ornamental Bio is developing novel ornamental plant products.
- Watercharter is advancing the future of medicine through the innovation of point-of-care, autologous regenerative cell therapies.
- Cartana Pharmaceuticals is developing proprietary in silico technology for multi-pharmacophore screening.
- Environmental Quality Operations is a biological survey and environmental remediation company that brings modern molecular techniques to the field of environmental biology.
- Fabrico Technology is a medical device company and biotech company developing extracellular matrices for craniofacial applications.
- Molecular Templates is developing novel molecular diagnostic assays.
- Seeding Biosciences is advancing the future of medicine through the innovation of point-of-care, autologous regenerative cell therapies.
- Celling Biosciences is a medical device company and biotech company developing extracellular matrices for craniofacial applications.
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IC² Institute Opens a Second Technology Incubator in India

In March, the IC² Institute opened a second technology business incubator in India at the American Center in New Delhi. As director of the Nexus Startup Hub and Incubator, Erik Azulay has taken residence in New Delhi as the official man on-the-ground from The University of Texas at Austin.

Nexus is a collaboration between the American Center and the IC² Institute to showcase the best of American and Indian entrepreneurship, innovation, and technology commercialization. Nexus serves as a central hub for entrepreneurs, innovators, faculty, government agencies, industry players and funding organizations interested in gathering, interacting, and collaborating to promote Indian Startups and the local entrepreneurial ecosystem.

The incubator offers selected start-ups unparalleled access to networks of industry and government partners, training from the top commercialization experts around the world, an extensive mentor network, as well as access to both private and public fund managers specializing in supporting startups. Through its affiliation with the University of Texas, Nexus can also partner startups with entrepreneurial teams in Austin to collaborate on creating a successful path to the market.

In an interview with India’s Spun magazine, Azulay said, “The vision is to serve as a focal point for kick starting the innovation ecosystem in New Delhi. India has become a hub for worldwide innovation, but in New Delhi and other cities, the overall ecosystem hasn’t really gelled and started working together yet. Nexus is based on showcasing best practices and serving as a center to attract everyone involved in the entrepreneurial ecosystem, so they can really start talking with each other.”

The American Center

Located in downtown New Delhi, the American Center is where the US Embassy conducts people-to-people diplomacy in New Delhi. A space for dialogue between the United States and India’s citizens, the Center offers a wide variety of programs aimed at stimulating discourse between our two nations, from cultural events such as film festivals, art exhibits and concerts, to speaker series addressing the day’s topical issues.

The American Center hosts approximately 600 visitors a day. It is one of the more than 700 American Spaces that form a worldwide network of in-person engagement platforms where visitors learn about the United States through cultural experiences, conversations, collaboration, and self-discovery.

First Nexus Incubator Cohort

Companies do not pay for participation in the Nexus incubator and Nexus does not take an equity stake. During the program, entrepreneurial teams have access to a co-working space, as well as access to office infrastructure services.

Applications from across India were accepted, and 115 companies competed for only 12 slots in the Nexus incubator’s first cohort. Each company will bring two team members into Nexus to undergo a four-month “pre-incubation phase” of entrepreneurial training including classes, workshops, and day-to-day mentoring.

Nexus promotes “SMART” objectives: Specific, Measurable, Attainable, Realistic, and Time-bound—and hands-on training programs are delivered by both United States and Indian experts. Entrepreneurial teams work with mentors to sharpen their value proposition, define their target market, get market feedback on their products/technologies and deliver a keynote address “Innovation, Capital Formation, and Economic Policy,” and discussed the adaptation of economic models from the past, through the present, and into the future.

A third panel discussion followed, moderated by Gregory Pogue on the subject “Impact and Insight” to discuss the future strategy of the Institute. The panel included staff members Salvador Alarics, Bart Bohn, Marco Bravo, Debra Dawonczyk, Eslie Echeverri-Carroll, Mitch Jacobson, and Matt Kammer-Kerwick.

A post dinner program included “Remembering George Kozmetsky” presented by Bill Cunningham and Monty Jones. Jones is completing a biography of George Kozmetsky, and two chapters of the book were provided to the Fellows as a preview of the book that is scheduled for release later this year.

Saturday morning, the group convened to an address by Admiral Bobby Inman, “Inmaris View of the World.” The final discussion of the conference was moderated by IC² Associate Director Bruce Kellison. “What is the emerging role for IC² Institute in Austin’s future? The Austin Model 2.0,” in which the Fellows were invited to discuss ways in which they can more actively collaborate with the IC² Institute. Kellison came away impressed from the meeting. “One of the highlights for me was not only celebrating where we have come in the past 40 years, but also where we are going in the Institute’s next phase. Clearly the Fellows have played a big part in our research and programs throughout our history. But hearing how excited many of the Fellows are to be contributing to IC² projects in the future, and their desire to be engaged with us in the next few years, is so encouraging.”

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— Bruce Kellison

In March, McCombs MBA students displayed their horns at the newly opened Nexus Startup Hub at the American Center in New Delhi. Nexus Director Erik Azulay (at the IC² Institute) is front and center. Photo courtesy of Nexus staff.
IC² Fellows Conference 2017: 40 & Forward

April 27-28, in the company of its Fellows & staff, the IC² Institute celebrated its fortieth year, as well as the 90th year of the Bureau of Business Research, and the centennial year of the Institute’s founder, George Kozyrsky. But while celebrating the past, the Fellows sessions were forward focused, facing the future of the IC² Institute, as expressed in the theme, “40 & forward,” and in an image of acceleration toward a burnt orange horizon.

IC² Institute Fellows are premier peers of the Institute, an honor given to individuals who promote the ideals and programs of the Institute in pursuit of their own careers. Drawn from government, business, and industry, Fellows have served as a pool of advisors and colleagues who often work shoulder-to-shoulder with the IC² directors and staff. Over the four decades of the Institute’s history, the Institute has accumulated nearly 200 active Fellows who exhibit premier talent in their fields of expertise and high collaboration with the Institute. The earliest fellows were named by the founder, George Kozyrsky. Others were named by the subsequent directors of IC², Fellows who attended the 2007 conference share a high appreciation for IC²’s history, as well as interest in being part of its future.

IC² Institute Impact

The meetings opened with a tour of the IC² Institute on the afternoon of Thursday, April 27, and an update on current activities and events. Interim Director Gregory Pogue escorted fellows through the central offices at 2815 San Gabriel. An evening reception followed, at the AT&T Educational Center.

Friday morning Mayor Steve Adler opened the meetings with an official welcome to the City of Austin. UT Austin Vice President for Research Daniel Jaffe also provided opening remarks. A panel discussion followed, titled “Impact — Campus to Community,” moderated by John Sibley Butler, who directed the Institute from 2002 to 2013. Members of the panel included Lee Cook, William Cunningham, Kay Hammer, Laura Kilcrease, Pike Powers, Charles Teeple, and Glenn West. The discussion detailed the role of the IC² Institute and the development of the Austin entrepreneurial ecosystem. The panel members were selected as leading members of the Austin community who were actively engaged in the development of the Austin Model under the leadership of Dr. Kozyrsky and the IC² Institute. They discussed the Austin Model in terms of vision, how it was realized through definable actions, examples of outcomes and impact, and learnings that are relevant to Austin’s future growth.

A second panel discussion titled “Impact — Campus to International” followed, moderated by Senior Research Scientist and Associate Director David Gibson. Panels included Carey Carbonara, David Eaton, Robert Hodgson, Michael Hough, Fred Phillips, Raymond Smilor, Brad Zehner, and Carlos Ross. The panel discussed the key transferable components of the Austin Model to international settings, areas that require adaptation for cultural fit, key programs and activities, and examples of outcomes and impact.

“The Institute was discussed in terms of its role as being key in helping to shape the Austin technopolis, and the interest abroad in pursuing Geoffrey’s vision of linking academia, government, and business sectors for technology-based growth,” said Associate Director David Gibson.

After lunch, UT Austin President Gregory Fenves welcomed the fellows and introduced IC² Institute Fellow and Nobel Prize laureate Finn Kydland. Kydland provided opening remarks. A panel discussion followed, titled “Impact — Campus to Community,” moderated by John Sibley Butler, who directed the Institute from 2002 to 2013. Members of the panel included Lee Cook, William Cunningham, Kay Hammer, Laura Kilcrease, Pike Powers, Charles Teeple, and Glenn West. The discussion detailed the role of the IC² Institute and the development of the Austin entrepreneurial ecosystem. The panel members were selected as leading members of the Austin community who were actively engaged in the development of the Austin Model under the leadership of Dr. Kozyrsky and the IC² Institute. They discussed the Austin Model in terms of vision, how it was realized through definable actions, examples of outcomes and impact, and learnings that are relevant to Austin’s future growth.

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McCombs MBA Students Visit Nexus

As one of its first activities, Nexus hosted a group of international MBA students from McCombs School of Business, The University of Texas at Austin on March 14. The UT students visited the startup hub to meet entrepreneurs and innovation stakeholders in the Indian state of Delhi, and to gain firsthand knowledge of the realities starting a company in India and New Delhi.

UT Professor Kishore Gawande led the trip to help reinforce the principles in his course Global Political Economy (BGS374 and BGS380E). The course explores how firms can integrate traditional strategies with non-market strategies in the global arena, i.e., engaging with international non-market actors such as foreign governments, regulators, political parties, NGOs, and the media.

The course also examines tools to craft successful firm strategies in diverse institutional and political environments. The Nexus Startup Hub provided a perfect learning opportunity for the students, including those who were already familiar with Indias entrepreneurial landscape. One student said, “The ecosystem has changed over the last few years. India is going big on [ecosystem development] and I am happy to be here, learning how these people are working on their different startups, and the brilliant ideas they have.”

Originally from India himself, Gawande said, “It was an informative visit, and an eye opener for me personally, regarding the evolving start-up ecology. We heard from four budding entrepreneurs: one pursuing social impact, one seeking to connect policymakers with issues on the ground, a team that was seeking to design medical products for the US market, and another who has started financial products related to bitcoin (obviously for high net worth individuals).

“These are highly educated young people with skills that would get them well-paying jobs in industry,” Gawande continued. “But they are choosing instead to go on their own. Another pleasant surprise is the participation of women in start-ups; two of the [four] entrepreneurs were women. Also, their motivations were different from the want-to-attract-venture-capital-money-to-scale-up, to creating value for the public.”

Nexus Director Erik Azulay found the experience provided positive interactions for the entrepreneurs as well. “Now that we have our first cohort, we’re looking forward to finding ways to work with [UT international MBA students] on a deeper level come the fall.”

— E. Azulay & M. Cotrofeld with K. Gawande

The University of Texas at Austin
create and achieve milestones to bring their companies to the market. A key part of the Nexus methodology is to “get out of the building” to collect real market data and seek out the voice of the customer. First portfolio of companies is strong. Best Deals (a company headquartered in Guwahati) has already secured $155,000 in angel investment for the product Escrowffer.

After the initial four months, four companies will be selected to stay at Nexus for a longer, more in-depth incubation period. These companies will have full access to the incubator facilities and network for up to an additional eight months. During this time mentors will work with the entrepreneurs to take their companies to the next level: getting their products to market, growing their customer and revenue bases and, when appropriate, working to locate fundraising for scaling operations and market growth.

Director Anulay says, “This is a new vision for the American Center and the State Department and I am very excited about this opportunity... If successful, not only will this incubator become a permanent part of the American Center in Delhi, but the model will also be expanded to other Consulates in India and American Centers/Embassies around the world.” — For more information Please visit the Nexus website at http://startunexus.net/

Partners in the Nexus effort include the Federation of Indian Chambers of Commerce & Industry (FICCI), the Indian Angel Network, the Indian School of Business, TIE Delhi-NCR, The American Chamber of Commerce (AmCham), Coworkit, Grant Thornton India, and Startup India.

The first Nexus cohort to receive pre-incubation training and mentoring includes the following companies:

**Apulose Organics** provides a range of plant-based organic pesticides for residue-free, eco-friendly farming that protects biodiversity, at a lower cost than chemical pesticides. www.apuloseorganics.com.

**BindassParty** is a party and event marketplace that makes partying easier. A “Do It Yourself” catering, venue and booking engine for small events and an inexpensive concierge service for large events. bindasparty.com.

**Chakra Innovations** has developed a pollution control device that captures up to 90% of pollutants emitted from diesel generators. Along with controlling emission at the source, the technology collects the particulate matter to be recycled as a raw material for inks and paints, rather than disposed of as waste. www.chak.in.


**Frut Snacks** is a fruit-based packaged snack. The product mimics the fresh-frying experience using minimally processed fruits with less sugar and no artificial preservatives. Fruit Snacks retains a fruit’s natural taste and texture, providing a Healthy yet Indulgent consumption experience.

**MorphoDrive** is an online 3D Printing services platform for rapid prototyping and customized part manufacturing for businesses. It provides customers with one-stop online access to evaluate and purchase various 3D printing and design services. www.morphophoto.com.

**Rayens Evens** is a clean-tech startup managing waste by converting end-of-life waste plastic which cannot be recycled further, into synthetic fuels for industrial use—thus reducing dependency on natural hydrocarbons and also curbing the presence of plastics as a major source of environmental pollution. www.rayenservation.com.

**S4S Technologies** is a for-profit, research-based enterprise, focused on developing sustainable food preservation technologies. In the food value chain S4S is present at multiple points—from developing food processing technology and manufacturing food processing machines, to the sale of processed food. The Solar Conduction Dryer (SCD) is S4S’s flagship product that is already being used by more than 1,200 farmers in eight countries. SCD is used to dehydrate a range of agri-food products for both farm and commercial operations. s4stech.com.

**Saral Uma**: Energy and labor efficient, this home-based rice parboiling device helps rural paddies farmers save nutrition, income, time, and environmental degradation at an affordable cost. www.saraluma.weebly.com.

**Venkatesh Biosciences** has developed “Swasth DHA,” a vegetarian water soluble DHA Powder which can be used to fortify nutraceutical/health products with DHA (an omega-3 fatty acid) extracted from algae. VB also uses DHA in nutraceutical/health products with DHA (an omega-3 fatty acid) extracted from algae. VB also uses DHA in nutraceutical/health products for both farm and commercial operations. www.venkateshbiosciences.com.

Alexa, are pushing the envelope in customizing products for the services they offer.

“... But we want to take it all a step further,” Menees explains, “by putting customization in native environments connected to your biometrics and body data, so we can understand you as an individual.”

Menees adds, “The goldmine is real-time app customization. Say that we have the same app—but mine is looking at my body and yours is looking at your body—and my experience is completely different from your experience. It’s tailored to me. It’s tailored to you. People want that. And we can do that.”

**IC² Institute Enthusiast**

“I became aware of IC² in the summer after my sophomore year through the Student Entrepreneurship Fellowship opportunity,” Menees explains. “I’d always wanted to work on changing the world and they seemed to be saying We’ll teach you the skills to do this in an actual hard data way, which was nice.” Since then he’s been involved with the Institute through both regional and national I-Corps programs, ATIS SEAL program, the FASTForward program, and more.

One of the first things he learned was how to interview potential customers to help determine a company’s value proposition. Perhaps the second thing he learned was to pivot when that value proposition seemed to be non-existent. “And I’ve pivoted many times since then,” he admits sagely.

Over time he has cycled from one IC² program to another—and from one startup venture to another. He is accumulating the lessons of a seasoned entrepreneur... lessons that bring the theoretical into the practical such as:

- When to set an idea aside, and how to re-imagine a technology into a new market concept
- Managing team dynamics, including “everyone gets mad”
- How to work with entrepreneurs as a consultant
- How to articulate a company’s core values.

Menees takes an extraordinarily long view. Success for his current startup is merely a milestone along his longer path. He talks about “giving back” as a UT alum. But that is another milestone as well.

“What I want to do long term,” he explains, “is life extension. I thought I was going to do that through research. But one person in a lab? That’s not going to make a big difference. If I could put 300 people in a lab? That shifts the time scale—that’s realistic. So, if I can continue with my start-up, make the proper venture capital connections... Yes. Then I can change the world.” (Think: totally.)

— M. Cotrofelo with Eric Menees
Eric Menees: Triple Major at UT, Entrepreneur & IC² Enthusiast

Creating Emotion Recognition Technology

This article is based on an interview conducted February 15, 2017, with Eric Menees, a senior in mechanical engineering, biochemistry, and neuroscience at The University of Texas at Austin.

Eric Menees thinks a lot about changing the world. It's a vision he owns at a personal level. His longterm research goal is the extension of human life, and his focus is to expand the capacity for interface between the human brain and computers—an interest that he has pursued with a triple major in mechanical engineering, biochemistry, and neuroscience. (Think: a lot of hard science.)

Menees spent his high school years building robots, and since his arrival at UT Austin, his interest has shifted to human-machine interfaces. “I've worked with a project using an EMG sensor to look at muscle signs while performing a certain task, and trying to define an algorithm that will predict fatigue, so it could tell you, ‘Hey, you're about to do something that will damage your muscle long term; you need to stop and take a break.’” (Think: no more tennis elbow)

Emotion Recognition Technology

Menees is founder and CEO of Cervello. He and his team are developing earbud tips for everyday headphones that capture and process information including brainwaves, heart rate, motion, location, and relevant history. As the earbuds constantly analyze these streams of information, they build awareness of your context, emotions, and habits.

They call it emotion recognition technology, and its potential for extreme personalization and product customization is astounding. At the tip of this individualization iceberg is predictive music programming and e-learning. The automated business intelligence market looks larger. Emerging market applications give the technology a massive potential that, at this point, can only be imagined.

And, while other ventures have developed low-accuracy EEG wearables, Cervello is the first to package a high-accuracy sensor in a consumer-friendly form factor that immediately processes the data into meaningful trends. Similarly, current industry leaders in rapid deployment of machine learning products, like Apple’s Siri and Amazon’s

XLr8AP Continues to Gain Momentum in Tirupati

Entrepreneur India Names XLr8 Among Top 6 State-Sponsored Incubators

The XLr8 Andhra Pradesh Business Incubator, launched only last September, is already gaining a strong reputation for positive results. And while "Almost every business school [in India] has taken a step forward in forming an incubation center for aspiring student entrepreneurs,” Entrepreneur India named XLr8AP among the top six government-recognized incubator programs in India today. XLr8AP publishes a list of robust goals. In its first 16 months, the technology business accelerator plans to recruit and screen at least 400 companies; train and develop at least 132 companies; accelerate at least 16 new ventures into domestic or global markets; and train more than 400 entrepreneurs and more than 200 students and faculty.

XLr8AP has made a strong start against those goals. The first cohort of 33 entrepreneurs trained from September 19 through January 18. The Hans India (on March 4) reported that these companies created 35 new jobs in Andhra Pradesh, and that several were engaged in advanced discussions for funding.

Antony Alappatt, of the MasterKube entrepreneurial team, told The Hans India, “...My first day, I was not even able to define technology. Now, I don’t talk technology; I can effectively communicate and persuade, and my presentations are much more effective. I was able to get a collaboration opportunity with a giant multinational company, thanks to the work the XLr8AP team put in shaping MasterKube communication. I would recommend any budding entrepreneur to be part of XLr8AP. It is invaluable.”

Regional entrepreneurial momentum will continue to build as the ecosystem becomes enriched with the faculty, students, and entrepreneurs, as well as customers, employees, and service providers of
The following companies and products are enrolled in XLR8AP’s second company cohort.

- A.K. Diabetic Herbal Pvt. Ltd.: An iron nano catalyst for higher income from ethanol manufacturing industries.
- Advanced Biotech Research Projects: Increased farm crop productivity using advanced biotech formulations.
- AGPULSE Pvt. Ltd.: Ayurvedic plant medicine acting as organic pesticide without affecting the biodiversity of farms.
- Dass Scientific Research Labs Pvt. Ltd.: Teaching of advanced mathematics concepts through the use of technology.
- Daya Foods: A novel food supplement from natural sources for feed cattle, leading to improved milk production and reproductive health.
- DAZL: Fashion jewelry with a focus on women’s unique needs for safety, convenience, and health and wellness.
- IDOS India Pvt. Ltd.: A cloud-based accounting software with in-built compliance that ensures real-time internal audit of transactions and provides accurate business intelligence to facilitate decision making.
- Imaginate: Nudspace is a 3D remote collaboration platform that emulates real world interaction, using Virtual Reality & Augmented Reality technologies in training, planning, and other applications.
- K Jagapathim Rao: Green route reinforcement of cloth fibers with potent nano particles for antimicrobial, self-cleaning, and other applications.
- M/s. Rope production Centre: Fiber from banana pseudo stem.
- MakeYourFit Pvt. Ltd.: Augmenting Virtual Reality (VR) technology for custom fit fashion.
- N P Komala Raveendra: ICT-based training methodologies imparting English communication skills to the rural populations.
- Octapace Engineering Services Pvt. Ltd.: Foam controlling technology that works on surface tension and pressure differential to remove foam in the reactor vessel, reducing chemical anti-foam usage.
- Suneja Cheedwary: Mobile App providing on-demand service connecting customers to cargo goods carriers.
- Sagar Defence Engineering Pvt. Ltd.: Unmanned Marine Surface Vehicle (UMSV) is an autonomous ocean robot/vehicle capable of collecting ocean data real-time, through unpredictable conditions, and communicating it to satellites and land.
- Samiieh Technology Innovations: Digital controlled precise dispensing valve for liquids under gravity flow.
- Siva Kameswari Coir Industries: Eco-Friendly Fiber, yarn, coco peat and composite boards from coconut coir for housing, planting, and decoration.
- Sowjanya Healthcare Solutions: Effective disposable shaving brushes with organic bristles.
- Sundeep K Kammer-Kerwick at IC²: Business Research. “I have learned research techniques from Matt that will help me long after I leave the University,” she explains.
- Tarangini Korumilli: Keratinase enzyme-treated feather for small and medium scale enterprises.
- Towny App: Mobile App for hyper-local social network to avail services like food delivery, groceries, medications and movie tickets.
- V. Lakshmi: Organic manure from keratinase enzyme-treated feather waste.
- Vega Biosolutions: Nutri-Bran enriched feed using fermentation of residues from effluent treatment plants of food and agro industries.
- Zreddhaa Information Services Pvt. Ltd.: Global Cyber security services that provides comprehensive cost effective Information Security and Privacy solutions & Services to financial companies and businesses that need to comply with regulations and policies.

There are victims living in dark places all over our state. I love doing this research because it gives me the opportunity to bring light into those dark places.”

McKenna Talley: Graduate Research Assistant for Human Trafficking Impacts in Texas

This article is based on an interview conducted March 7, 2017, with McKenna Talley, who works with the Institute on Domestic Violence & Sexual Assault (IDVSA) and the Bureau of Business Research (BBR). In December 2016, IDVSA and BBR released the report “Human Trafficking by the Numbers: The Initial Benchmark of Prevalence and Economic Impact for Texas.”

Originally from North Carolina, McKenna Talley is now firmly grounded at the University of Texas at Austin. “I never thought I’d move to Texas, but here I am, and I love it!”

Why UT? “The Social Work program had everything that I was looking for. It gives you a lot of experience in the field, which is really important to me.”

As Graduate Research Assistant at the School of Social Work, over the past year, Talley has worked on two large scale research projects to help count the social cost of human exploitation. One study explores the impact of sexual assault on university campuses; the other study describes the impact of human trafficking in Texas.

Identifying the Victims

Human Trafficking involves the use of force, fraud, or coercion to obtain some type of labor or commercial sex act. Identifying the victims to arrive at hard numbers is a challenge in itself. Where does one search for statistics that do not yet exist, or for victims who do not want to be identified? As the report states, “fundamental to this challenge is the hidden nature of the crime and the need for far deeper understanding of what beyond it is possible.”

“People often think of trafficking as moving people around, but it can just as easily be exploiting people where they’re at,” Talley explains. “We decided, as a team, to look at areas of the populations that are at risk—my research included trying to find all those numbers for all those community segments.” These at-risk populations examined for the current report include:

- For minor and youth sex trafficking: recorded victims of child abuse and maltreatment, at-risk youth being served by the Texas Department of Family and Protective Services (DFPS), and homeless minors and youths.
- For labor trafficking: migrant farmworkers, cleaning services, construction, kitchen workers in restaurants, landscaping workers, and groundskeepers.

It is important data-mining research because, while policy makers and administrators may have compassion for victims of sexual assault or human trafficking, that compassion can be hard to quantify when it comes to carving out budgetary dollars to deliver solutions for a problem that is incognito. “Cost research” challenges aptly with two hard numbers: how many victims are affected, and the financial cost that society pays as a result.

The work requires cooperation between two types of researchers: social workers and economists. Talley has been working with Matt Kammer-Kerwick at IC²’s Bureau of Business Research. “I have learned research techniques from Matt that will help me long after I leave the University,” she explains.

Viewing the problem through both a quantitative and qualitative lens provides a view that lends dimension to the problem—perceiving both the pathos of an individual’s experience as well as the numbers that lend a holistic view for how these activities impact society.

Best of all, translating the cost to a dollar figure can help inform society to take action. And that touches the social worker’s heart in McKenna Talley. “There are victims living in dark places all over our state,” she says. “I love doing this research because it gives me the opportunity to bring light into those dark places.”

— M. Cotrofeld with McKenna Talley

See related articles, pages 16 and 25.
BBR and IDVSA Release Reports on Cultivating Learning & Safe Environments (CLASE) Across the University of Texas System and Human Trafficking by the Numbers

CLASE: Across UT System

The Bureau of Business Research (BBR), working with the Institute for Domestic Violence and Sexual Assault (IDVSA), has released both aggregate and individual university reports for Cultivating Learning and Safe Environments (CLASE) across the University of Texas System. Data was collected from students at every institution in the UT System to provide a detailed and holistic understanding of the prevalence and perceptions of sexual harassment, stalking, dating/domestic abuse and violence, and unwanted sexual contact.

The survey is part of a $1.7 million multi-year study spearheaded by UT System Chancellor William H. McRaven and was conducted by UT Austin’s Institute on Domestic Violence & Sexual Assault, led by Director Noël Busch-Armendariz. The study is groundbreaking because it: 1) uses both qualitative and quantitative research data to better understand, address and reduce acts of sexual harassment, stalking, dating/domestic abuse and violence and unwanted sexual contact on UT campuses; and 2) includes a longitudinal component in which researchers will repeatedly survey a select cohort of students to help understand their knowledge, attitudes and experiences over the course of their college careers.

“If we want to understand and continuously improve our campus culture in order to facilitate student success, then we have to be open and honest about our students’ experiences beyond the classroom, no matter how uncomfortable it is,” McRaven said. “I’m pleased that UT institutions have numerous,

Student Survey Snapshot

The results of the CLASE survey are representation of all students since their enrollment at a UT institution. 13 UT institutions participated in the CLASE study.

Key Challenge: Students are not disclosing

- 72% of victims attending academic institutions did not tell anyone about the incident
- 77% of victims attending health institutions did not tell anyone about the incident
effective programs to serve victims of sexual assault and misconduct, and with new knowledge, we can and must do better. The findings of this study shine a brighter light on sexual assault and misconduct that affects UT students and give us a deeper understanding of how to address these problems.

The reports are available at https://www.utsystem.edu/sites/clase/clase-www/Thesseract-results.

Human Trafficking in Texas

Also with IDVSA, the BBR helped research the report, "Human Trafficking by the Numbers: The Initial Benchmark of Prevalence and Economic Impact for Texas." Human Trafficking involves the use of force, fraud, or coercion to obtain some type of labor or commercial sex act. The study identified approximately 79,000 minors and youths as victims of sex trafficking in Texas, while approximately 234,000 workers are victims of labor trafficking, bringing the total to an estimated 313,000. Traffickers exploit $600 million from these victims annually, and minor and youth sex trafficking costs the state $6.6 billion.

The complete report is available at https://repositories.lib.utexas.edu/handle/2152/44597.

Sanjani Prodduturu graduated in May with a Bachelor of Science degree in Chemical Engineering, and a certificate in Business Foundations. She speaks four languages: English, Hindi, Spanish, and Telugu, and worked as a part time receptionist at the front desk of the IC² Institute from June 2016 to May 2017. Outside the auspices of the IC² Institute, Prodduturu also worked as an engineering student tutor and volunteered for Girlstart, the Boys and Girls Clubs of America, and Helping Hands. While at The University of Texas at Austin, she received honors and awards including the Safety in the Chemical Process Industries Certificate, the Chevron Phillips Chemical Scholar, University Honors, and the Women in Engineering Program Scholarship. In June, Prodduturu took the position of engineer with Samsung.

IC² Leaders of Tomorrow

IC² extends special thanks to all students of The University of Texas at Austin who have served as interns, research assistants, and volunteers — lending their time and talents to the efforts of the institute over the past year.

Summer 2017
Lila Al-Kassem
Sarah Alverson
Connor Butler
Olivea Capogna
Justin Chia
Robert Cochran
Walter Ellison
Victoria Fung
Elisa Geremia
Bren Guerrero
Sijie (Steven) Han
Bridge Hill
Rashi Jain
Jenny Jie
Haritha Junpady
Riba Kamal
Young Kim
Arya Koneru
Icela Lee
Olivia Loa
Fiza Mairaj
Chaza Makki
Lisa McDonald
Christine Ngan
Tanima Poddar
Baoxin Si
Bryan Stephens
Kylee Singh
Hugo Vargas
Amman Waseem
Lei (Helen) Yang
Karina Alvarez
Qihang Hu
Fiza Mairaj
Bryan Stephens
Jayson Varkey
Young Kim
Damjan Kockov
Lisa McDonald
Kala Nenkova
Tanima Poddar
Aditya Prodduturu
Sanjani Prodduturu
GRAs
Karina Alvarez
Qihang Hu
Fiza Mairaj
Bryan Stephens
Jayson Varkey
Volunteers
Raveesh Budania
Joseph Buschmann
Aanandh Chandrasek
Manjo Kambadur
Maricarmen Senosiain
Fall 2016
Anusha Bhojani
Bridge Hill
Rashi Jain
Young Kim
Damjan Kocov
Lisa McDonald
Kala Nenkova
Tanima Poddar
Aditya Prodduturu
Sanjani Prodduturu
Marc Stevens
Heather House
Evan Johnston
Damjan Kocov
Lisa McDonald
Kala Nenkova
Aditya Prodduturu
Sanjani Prodduturu
Hubbard Uhlhorn
GRAs
Karina Alvarez
Fiza Mairaj
Bryan Stephens
Jayson Varkey
Volunteers
Lauren Marotte
Bryan Stephens
Jayson Varkey
Yiming Zhao
Volunteers
Joseph Buschmann
Aanandh Chandrasek
Nina Hitchins
Manjo Kambadur
Maricarmen Senosiain

is a new program designed to link students to the international projects of the Institute, REACH provides students support to become familiar with topics and issues related to technology commercialization and to plan a research study related to institute programs or technology commercialization in general. More information on the ongoing REACH program is at http://ic².utexas.edu/reach/.
Breye Perkins took the course RHE321 Entrepreneurial Writing: Lights, Camera, Action! Storyboarding for Entrepreneurs, taught by Gregory Pogue. The course paired the students with entrepreneurs in the IC² Institute FASTforward program, to help the companies develop the rhetoric to define their core values, long-term goals, and explore branding rhetoric. As a Junior majoring in Rhetoric and Writing, Perkins found the course to be a departure from her typical coursework. “After taking the storyboarding course, I started looking into Communications as a minor, and I’m taking an Advertising Online class right now. It is so much fun. The class helped me realize that I enjoy working with these small businesses... and helping them build on their ideas.”

Christian Donesi, left, with Breye Perkins. Donesi and Perkins both took the RHE321 course taught by Gregory Pogue, Innovation and Change Center.

"I am grateful for the opportunity to travel to South Korea and experience their culture and professional domain, and I look forward to engaging in the dynamics that allow our Korean counterparts to succeed in US markets."

— Bridge Hill, MSTC

backdated business plans in which $400M of capital had been invested and from which PredictionWorks predicted with 100% precision which businesses would succeed or fail." From September 2016 to May 2017, Kochav also worked on GCG projects with the Korean Advanced Institute of Science and Technology (KAIST), the Province of Jeollabuk-do, and the City of Jeonju, Korea to identify and select mid-size Korean companies for global market business development.

Bridge Hill also graduated this year from the MSTC program. Since last November, she has worked with South Korean entrepreneurs and CEOs of small and medium enterprises. “We try to help them get connected with US partners.” She describes her experience at the Institute as “completely positive, from working with human resources to the director, to my supervisor and personal mentors—everyone was completely supportive, encouraging me and helping me determine my best path to success.”

Hall’s internship with the Institute aligned perfectly with her academic work in the MSTC program, providing an application approach that complements the program’s academic approach. “We work with Quicklook™ reports for MSTC, and when we work with the companies here at IC², we use essentially the same approach.” Her best experience at the Institute, she says, is yet to come. In July she joins the research team of Jeonju, Advanced Institute of Science and Technology (KAIST), Kochav also worked on GCG projects with the Korean Advanced Institute of Science and Technology (KAIST), the Province of Jeollabuk-do, and the City of Jeonju, Korea to identify and select mid-size Korean companies for global market business development.

Impact Studies: Texas Public Libraries and Texas Military Department


Texas Public Libraries

In addition to books and periodicals, libraries serve as access to digital repositories; entry points to academic publications; repositories; entry points to journals; academic journals; academic periodicals; academic repositories; journal repositories; journal repositories; academic periodicals; academic journals; academic periodicals; academic repositories; journal repositories; journal repositories; academic periodicals; academic journals; academic periodicals; academic repositories; journal repositories; journal repositories; academic periodicals; academic journals; academic periodicals; academic repositories; journal repositories; journal repositories; academic periodicals; academic journals; academic periodicals; academic repositories; journal repositories; journal repositories; academic periodicals; academic journals; academic periodicals; academic repositories; journal repositories; journal repositories; academic periodicals; academic journals; academic periodicals; academic repositories; 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New IC² Institute Fellows

In April, four new colleagues and peers of the Institute were named as IC² Fellows. Photos by C. Franke.

Nikhil Agarwal serves as CEO for Innovation, Government of Andhra Pradesh. He was recently awarded the Innovation Award for “Excellence in Promoting Innovation in Governance” by the Government of Rajasthan. He is former President and CEO of Cambridge Global Partners, an alumnus and lecturer of the University of Cambridge, alumnus and researcher of the University of Edinburgh, and lecturer at Virginia Tech. He has published over 70 research papers. Nikhil is founder of Entrepreneur Cafe, providing an impressive array of education and networking to its 15,000 participants. He writes a column in the Economic Times and Times of India, the most circulated English newspaper in the world. Nikhil has been an advisor to the World Entrepreneurship Forum, United Nations Global Alliance on ICT & Development.

Darius Mahdjoubi is an adjunct professor in the Faculty of Entrepreneurship of the University of Tehran and at the Industrial Management Institute in Iran. A mechanical engineer by education, he completed an interdisciplinary Ph.D. on Knowledge and Innovation under the supervision of Dr. George Koemetsky at UT Austin in 2004. His research work includes Organizing Design Capabilities in Developing Countries (Tehran, 1985), The Mapping of Innovation (Toronto, 1997), and Action Business Planning (IC² Institute, 2009). His most recent research focuses on the New Renaissance and integrative thinking and methodology.

Shri Harkesh Mittal is Advisor to the Ministry of Science and Technology, Government of India, and head of National Science and Technology Entrepreneurship Development Board (NSTEDB). He has been instrumental in promoting Indian entrepreneurs ranging from small rural industries to high-end technological enterprises. He has made the innovation and entrepreneurship program of Department of Science & Technology a much sought-after program by individual entrepreneurs as well as by industry—not only in India but among the industrially advanced countries of the world.

A. Didar Singh is the Secretary General of Federation of Indian Chambers of Commerce and Industry (FICCI). He is a renowned author and in November 2002 he retired as Secretary to Government of India in the Ministry of Overseas Indian Affairs. He also served in the Ministry of Science and Technology and on the boards of several state-owned enterprises. He holds degrees from St. Stephens College, Delhi; a Masters in Development Administration from Birmingham University, UK; and the distinction of having completed the first PhD in India on the Policy and Administration of e-Commerce (Panjab University, 2006).

"I would be 'no where' without Dr. Butler's help. It's been intellectually invaluable, of course, but also supportive in all dimensions — research, but also all other aspects."

— Bryan Stephens, PhD Candidate and Graduate Research Assistant

As he finalizes his doctoral dissertation, Bryan Stephens works as a Graduate Research Assistant, pursuing research in social physics and network analysis with John Sibley Butler. Stephens was introduced to the Institute when he took Butler's course in Technology Transfer and Incubation, where he became intrigued about the subject of social physics, and lingered after class for extended discussions. Their most recent journal publication shows Stephens as the lead author (see pg. 32 for published figure and citation). Stephens says that his work at the Institute helped him to focus his academic career, which is to pursue academia in the field of social physics in quantitative analysis and network analyses. "I would be 'no where' without Dr. Butler's help. It's been intellectually invaluable, of course, but also supportive in all dimensions — research, but also all other aspects."

— Bryan A. Eraild

Visiting Scholars 2017 January through June

Jing Wang is a PhD candidate in the School of Management and Economics at Beijing Institute of Technology, where her research focuses on technological innovation and strategic management. While at the IC² Institute, she will explore institutional factors that contribute to the development of the science and technology service industry and interfirm relationships. Aura Pedraza-Avella is a Professor at the School of Business and Industrial Studies of the Universidad Industrial de Santander, Colombia, where she teaches and conducts research on entrepreneurship and labor market outcomes. While at the Institute, she is researching factors that contribute to the development of a high-tech entrepreneurship ecosystem. Part of her clinical curriculum was also to join the Converting Technology to Wealth program last fall.

MSTC Students Find a Perfect Fit with GCG

The IC² Institute developed the Master of Science in Technology Commercialization (MSTC) degree program to help train entrepreneurs and managers of innovation to move new technologies from the laboratory into the global marketplace. For more than a decade the program was delivered at the Institute, and in 2011 the program was transferred to the McCombs School of Business. It is therefore not surprising that today’s MSTC students find internships at the Institute to be valuable.

Damjan Kochav is a 2017 MSTC graduate who became a member of the Intern Support Research Team for the double-blind study and report, “The Science of Prediction: A Battery of Blind Back-Dated Validation Tests of PredictionWorks’ New Venture Assessment System,” with John Sibley Butler and Gary Cadenhead from July to November 2016. Kochav conducted a technological deep dive focused on M&A profiles and case studies dealing with Ball, BAC and hybrid companies that were either building or acquiring new ventures with a Product/Service framework offered as a Technology as a Service (TaaS), Infrastructure as a Service (IaaS), Platform as a Service (PaaS) or Software as a Service (SaaS). “PredictionWorks’ New Venture Assessor became a 5-10X game changer,” Kochav said. “Its assessment system was found to be a 100 percent reliable predictor of new venture success/failure. The test was double blind in nature and consisted of ten

Salvador Naranjo awards Damjan Kochav a certificate of appreciation for his work with the Global Commercialization Group. Photo: Ada Hernandez.
Students Assist with Research on Austin’s Entrepreneurial Ecosystem

A grant by the Kauffman Foundation to the IC² Institute to research Austin’s Entrepreneurial Ecosystem has enabled Elsie Echeverri-Carroll to hire a cadre of students to collect and analyse data, including Fiza Mairaj Ali, Qihang Hu, Evan Johnston, Jayson Varkey, and Karina Alvarez. In December 2016 Evan Johnston graduated The University of Texas at Austin in December 2016 with three majors: economics, mathematics, and psychology. He now continues as a research assistant on the project. Johnston says, “After working with Elsie at IC² for over two years on the Kauffman project and others, I have learned a lot about the history of Austin and how it grew to be the high-tech, entrepreneurial center it is today. Under her guidance, I have also been able to gain great hands-on experience.”

Erinn Wright (on the right in this photo taken with her friend Anna Poliner) graduated in May with a degree in analytical marketing from the McCombs School of Business. She also earned a minor in Spanish and a Bridging Disciplines Certificate in Social Entrepreneurship and Non-Profits, with a focus on International Development. Her Bridging Disciplines curriculum is what brought her to the IC² Institute, where she worked with David Gibson to make connections in Belize. Wright was awarded a Bridging Disciplines scholarship to conduct in-country research in Belize on its struggle against diabetes, which is currently the second highest cause of death in the small Caribbean and Mesoamerican nation. She captured her research in the report “Sustainable Wellbeing in Belize: The Challenge of Diabetes.” The report is available in the UT publications repository, https://repositories.lib.utexas.edu/handle/2152/47323. Photo: A. Weitzel.

FASTforward: Mentoring Deepens for First Cohort while Companies Apply for Second Cohort

Last fall, the first FASTforward cohort of 20 companies attended ten intensive training sessions, and then graduation. But the program didn’t end there. Entrepreneurs continue to report on their activities and progress monthly as they engage with mentors for feedback and assistance in “aftercare” events.

Meanwhile, information sessions for the next FASTforward cohort have begun, along with the application and interview process to identify the 20 companies with the highest potential for growth through the program. FASTforward helps small businesses accelerate their commercial potential and hone their products and services to larger markets. The City of Austin subsidizes much of the program cost to help small companies access the lessons that can lead to expansion and job creation. The first session of the second cohort begins September 12 and runs through November. Mentors are currently being sought to attend monthly networking events, during both the instruction and the aftercare phase, to provide entrepreneurs with feedback, advice, and collaboration. Interim Director Gregory Pogue leads the program. In an information session for entrepreneurs, he explains, “Our role is to help you and your company bridge the gap between where you are now and where your potential can take you.”

To participate as a mentor in the FASTforward program, please contact Coral Franke, coral@ic2.utexas.edu; 512.475.8947.
The Interchange: Innovation Networking

Official visitors & delegations to the IC² Institute (January thru May)

Austin Chapter of Taiwanese Chambers of Commerce (ACTCC)
City of Kristiansand delegation, Norway
City of Luleå delegation, Sweden
Federation of Indian Chambers of Commerce & Industry (FICCI), the Indian Angel Network
Great Wall Enterprise Institute (GEI), China
HEC Paris/CCI Paris Ile-de-France, Executive Education Cohort, Paris, France
Jungle Ventures, Singapore
Korea Advanced Institute of Science & Technology (KAIST) Entrepreneurial Cohort
Korea Agency for Infrastructure Technology Advancement (KAIA)
Maestría en Ciencias en Comercialización de la Ciencia y la Tecnología (MCCT) Cohort, Monterrey, Mexico
Metro Chamber Team
Norwegian Consul from Houston
Saudi Aramco, Taqnia, RPDC
Sawyer Business School, Suffolk University, New Delhi, India
Southern Taiwan Science Park Bureau and the Metal Industries Research & Development Centre
Taiwan Economic and Cultural Office (TECO) in Houston
XLR8 sta
mef
ers, Tirupati, India

Interim Director Gregory Pogue addresses delegation from Great Wall Enterprise Institute (GEI) of China.

Summer 2017

Dear Friends & Colleagues,

This issue of the UPDATE celebrates the IC² Institute's 40th year, the 90th year of the Bureau of Business Research (BBR), and the centennial year of its founder, Dr. George Kozmetsky. Above all, the message of this celebration is future-focused: 40 & forward. It is therefore most appropriate, in our university-based research setting, that we open with focusing on students at the Institute, and tell a few of their stories as they work with the Institute and then make their way into the workforce: some as employees, public servants, and academics; others as entrepreneurs destined to become employers.

From there we touch on the deep history represented by the IC² Fellows, one of the programs first established by our founder. These peers and colleagues of the Institute have watched IC² Institute pursue the hypothesis that the commercialization of technology leads to job creation, technology cluster development, and regional prosperity. Our recent Fellows Conference was a tremendous success with 145 attendees with IC² Institute Fellows coming from ten different countries.

The Bureau of Business Research features large in this issue. Its recent work with the Institute for Domestic Violence and Abuse (IDVS) has helped reveal the plight of hidden victims—victims of sexual assault across university campuses, and victims of human trafficking across the state. One of the valuable aspects that the BBR brings to this work is to quantify the financial burden that these activities place on the State of Texas. It is socially significant work of which we are very proud.

We also announce the recipients of IC²’s “Insight to Innovation” funds, awarded to eleven UT faculty members. These funds are most often placed back into the hands of student research assistants, helping both faculty and students to actively engage with the efforts of the Institute.

Meanwhile, our international research projects move apace, particularly in India. The XLR8AP business incubator and accelerator (launched only last September) continues to make headlines in local press at Tirupati, Andra Pradesh, and has been named as one of the top six state-sponsored incubators by the Indian Angel Network. The XLr8AP business incubator and accelerator (launched only last September) continues to make headlines in local press at Tirupati, Andra Pradesh, and has been named as one of the top six state-sponsored incubators by the Indian Angel Network. Meanwhile, our international research projects move apace, particularly in India. The XLR8AP business incubator and accelerator (launched only last September) continues to make headlines in local press at Tirupati, Andra Pradesh, and has been named as one of the top six state-sponsored incubators by the Indian Angel Network. Meanwhile, our international research projects move apace, particularly in India. The XLR8AP business incubator and accelerator (launched only last September) continues to make headlines in local press at Tirupati, Andra Pradesh, and has been named as one of the top six state-sponsored incubators by the Indian Angel Network.

The Austin Technology Incubator (ATI) has helped Austin establish itself as the first site for a US Department of Energy's Solar Reverse Hackathon, an effort to encourage use of data and data tools to facilitate new products and services for solar power integration. Another large recent win is the opening of the biotechnology wet laboratory space at Austin Community College, which ATI Biotech helped establish from its early stages of grant development.

While full, this issue does not encompass all the activities of the Institute over the last 6 months. We encourage you to explore our website and follow us on Facebook and Twitter to get a real-time view of the activities of the IC² Institute.

Best regards,

Gregory Pogue
Interim Director, IC² Institute

*For more detailed coverage on the 90th anniversary of the Bureau of Business Research, please see Update Fall/Winter 2016.
FROM THE DIRECTOR

IC²'s LEADERS OF TOMORROW

Students at the IC² Institute: Leaders of Tomorrow

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Eric Menees: Triple Major at UT, Entrepreneur & IC² Enthusiast: Creating Emotion Recognition Technology

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15 Celebrating the Fortieth Year of the IC² Institute

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18 THE STATE & THE NATION

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19 ATI Works with Austin Community College to Establish Life Sciences Wet Lab & Incubator Space

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September 27-29, 2017 | Taipei City, Organized and Hosted by Yuan Ze University
International Conference on Technology Policy and Innovation, www.ictpi2017.conf.tw/
ICTPI is accepting abstract submissions for 2017 that pursue the theme “Innovation and Development in the Asian Century: Global Shifts in Technological Power.” Abstracts are encouraged from technology policy and innovation researchers, officials and staff from national ministries of science and technology, economic development officials, technology entrepreneurship educators, and students in these fields.

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Take Note

Follow the IC² Institute on Twitter! twitter.com/ic2institute

NEWSLETTER OF THE IC² INSTITUTE

UPDATE

Innovation, Creativity & Capital at The University of Texas at Austin

FASTforward Mentor Information Session | August 16, 6:00-7:00pm
IC² Institute, 2815 San Gabriel, Austin, TX 78705 (on-site parking available)
To participate as a FASTforward mentor please contact Coral Franke, coral@ic2.utexas.edu; 512.475.8947

FASTforward: 2nd Cohort begins September 12
Small business owners struggle to find the time, resources, and guidance to maximize growth opportunities. This hands-on program guides small business owners to:
• Identify new business opportunities and revenue streams
• Differentiate brand message, product, and delivery strategy for more effective reach
• Develop financial models to enhance growth and funding opportunities
• Increase the scale of their business

40 & forward

