

- **1. MIT Standard of Excellence and Rigor:** We provide the highest-quality education, advising, and practical experiences.
- **2. Collaboration:** We work closely with other MIT departments, labs, centers, and groups to connect students with the best entrepreneurship programming across the Institute and beyond when appropriate.
- **3. Diversity:** Entrepreneurship requires diversity of opinion and diversity of people. Throughout our courses, advising, and programming, we combine a range of critical perspectives.
- **4. Experimentation:** Each year we try new programs and activities. If we fail, we learn. We don't expect everything to work the first time; if they all do, we are not innovating enough
- 5. Honest Broker: First, neither the Center nor its faculty or staff are allowed to take a financial interest in any of the new companies that we nurture and assist. Second, we strive to always provide our students with multiple options and educate them on the process to make an informed decision. The choice always rests with the student and the Center will work to create a level playing field for the options. Our only goal is the student's entrepreneurship education and long-term entrepreneurial success.
- **6. Mens et Manus:** True to the motto of MIT, in all of our courses and throughout our activities, we operate on a hybrid model that fuses academic and practitioner perspectives

## **ABOUT MARTIN TRUST**

The Martin Trust Center for MIT Entrepreneurship is named for Martin Trust, SM '58. In 1970, Trust founded Mast Industries, which merged with The Limited Stores (now Limited Brands) in 1978. He served on the board of directors for Limited Brands until 2003. He has advised the U.S.

government on textile trade issues, and currently runs the investment firm Brandot International, which he founded. He holds a bachelor's in mechanical engineering from The Cooper Union as well as a master's in industrial management

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2014 – 2015 Martin Trust Center for MIT Entrepreneurship Annual Report

The academic year of 2014 – 2015 was another transformative one for the Martin Trust Center for MIT Entrepreneurship. For our primary stakeholders, the MIT students, we refined and integrated our range of programs while also implementing new offerings, and we extended our outreach to help create the next generation of innovation-driven entrepreneurs. We reloaded our staff at the Center, as we do every year, to keep fresh and current, always raising the bar to increase the scope and scale of the services we deliver.

**New Student Programs:** We continually look at how to foster student entrepreneurship through new programs, whether it's partnering with Professor Martin Culpepper to launch maker spaces designed to further integrate the act of making with the act of starting a business, or recruiting Sector Practice Leaders to make sure our entrepreneurship efforts provide students with depth in particular industry sectors in addition to our stellar industry-agnostic educational program.

**Evolving the Course Catalog:** Our core academic offerings continue to evolve and are more integrated than ever, and we've renewed our efforts to integrate various co-curricular activities, like the StartIAP four-week program, the t=0 Festival that kicks off the academic year, and the MIT Global Founders' Skills Accelerator (GFSA) summer program.

#### A Campus-Wide Community of Entrepreneurs:

We work closely with departments across campus to form a unified ecosystem of entrepreneurship education. Among the many collaborations new and strengthened, two we want to highlight are the Translational Fellows Program, working with Professor Yoel Fink of the Research Laboratory of Electronics to empower MIT postdocs to lead commercialization planning efforts, and the MIT Global Startup Labs, a MISTI (MIT International Science and Technology Initiatives) program where students mentor budding entrepreneurs in other countries.

**And Beyond:** Our portfolio of online entrepreneurship courses through MITx has reached over 300,000 people. We've taken on an innovative program, MIT Launch, that brings high schoolers to MIT in the summer to learn how to start companies, helping validate the *Disciplined Entrepreneurship* model with a growing range of up-and-coming entrepreneurs. Our

Entrepreneurship Educators Forum promotes best practices to support educators across the country and around the world.

Staff Updates: Our most recent class of Trust Center staff graduates are off to an impressive assortment of new challenges within MIT and beyond to the startup community. Entrepreneur in Residence (EIR) Christina Chase is now co-director of MIT's SportsTech Center (STE@M). EIR Josh Forman is co-founder of Lumio. Chief of Staff Ana Cuellar is now in the graduate program at Stanford University, and Head of Operations Chris Snyder now manages operations at Accion Systems. Finally, EIR Kyle Judah is the director of marketing at Ecovent. Thankfully, in large part because of the above folks' efforts and successes, we have been able to recruit equally talented individuals who have even more experience as we continue to raise the bar.

Rest assured it is not always sunshine, rainbows, unicorns, and pots of gold at the Trust Center. We face many challenges in the upcoming years and we do have experiments that fail. Because of this, we are very grateful to you, our stakeholders, for your continued support and faith in our long-term vision. Most of all, we want to thank the small but amazingly dedicated and effective professionals at the Center who are at the front lines. They are the ultimate catalysts to ensure all of our programs are successful on the ground.

We hope you find this annual report informative and also that it gives you some joy to be part of an organization that is fundamentally changing entrepreneurship forever.

Best,

Bill, Fiona, and Ed



**Bill Aulet**Managing Director, Martin Trust

Center: Senior Lecturer, MIT Sloan



Fiona Murray
Faculty Director, Martin
Trust Center; William Porter
(1967) Distinguished Professor

of Entrepreneurship



Edward B. Roberts
Founder and Chair, Martin Trust
Center; David Sarnoff Professor of
Management of Technology

2014 - 2015

# HIGHLIGHTS

## **ALUMNI PROFILES**

Three that rapidly went from Martin Trust Center to unicorns



Frederic Kerrest, MBA '09, co-founder & COO of Okta, is also a Trust Center advisor and mentor to early-stage software companies

In summer 2015, The New York Times and CB Insights compiled a list of businesses most likely to become "unicorns"—companies with valuations of \$1B or more. We were happy to see that three of our students who spent large amounts of time at the Trust Center were founders of companies listed.

There were at minimum three things you knew about **Frederic Kerrest, MBA '09,** when you got to know him. First, he was going to be successful. Second, he was going to start a new company. And third, to find him, go to the Trust Center, no

matter the hour. "He was like family," said long-time Center professional, Pat Fuligni.

After coming to MIT to successfully run the \$100K Entrepreneurship Competition, Frederic set out to start his own company. Going back to his roots at Salesforce, he focused on enterprise software opportunities and in 2009 the idea for **Okta** was born. It has been a rocket ship ever since. Okta has won numerous awards and Frederic has become a poster child for a new generation of high-growth, well-run enterprise software company executives with sustainable business models.

Still, he has time to give back to MIT. Kerrest has acted as a Trust Center advisor and mentor for early-stage software companies since 2011. "Frederic put himself in our shoes and gave us genuine advice that has helped bring our venture forward," says Alessandro Babini, SM '15, CEO and co-founder of Humon.

Okta has raised over \$230M in funding from top VC firms including Andreessen Horowitz, Sequoia, and Greylock, and is now valued at \$1.2B. Okta allows users to securely connect to applications and software across any device at any time. Based in San Francisco, the company employs more than 600 and serves 2,500 global customers.

Elliot Cohen, MBA '13, came east in 2010 when he was recruited to be the first full-time EIR (Entrepreneur in Residence) at the Trust Center. Elliot thrived working with students and showed great initiative in setting up a class with Sir Tim Berners-Lee called Linked

Data Ventures; however, his personal passion was healthcare. Towards the end of his EIR tenure, he established "H@cking Medicine" at MIT and was admitted as an MBA candidate at MIT Sloan. While a student, he met his co-founder, TJ Parker, at the 2012 H@cking Medicine event and they started to "jam" on making a company out of their top prize-winning idea.

That company, **PillPack**, is a full-service pharmacy delivering a better and simpler customer experience through convenient packaging, modern technology, and personalized service. Parker and Cohen realized the only way to "fix" pharmacies was to build a better one from scratch and focused their initial efforts on the 30 million Americans who take more than five prescription medications per day. "What was missing," Cohen says, "wasn't a technological innovation. It was a lot of small touch points [to the customer experience]."

Customers automatically receive a shipment of medications every two weeks in individual packs organized by date and time of day. The company even coordinates refills so the patient never needs to worry. Now operating in 48 states, PillPack has raised over \$60M in funding and shipped over one million prescriptions in its first 18 months.

Managing Director Aulet remembers the first day the high-energy kid from Argentina stepped on campus in August 2011. He was determined to leave MIT with a great idea for a new company, bigger and better than the one he had started before coming to MIT. Little did **Ale Resnik**,





Ale Resnik, MBA '13, CEO of Beepi with co-founder Owen Savir

MBA '13, know that a used car he bought to drive while at MIT Sloan would be his inspiration for a highly scalable and attractive company called Beepi. When his Jeep caught fire days after purchase and the dealer refused a refund, Resnik sued and won, but the experience inspired him to examine the used car buying experience. His research in the MBA Entrepreneurship & Innovation track at Sloan showed that an opportunity existed to connect sellers and buyers directly, eliminating the dealer entirely.

"Beepi would have been impossible without the education and network that MIT gave me," Resnik says. He was awarded an MIT Legatum Fellowship for Development and Entrepreneurship while at the school. Within a year of graduating and starting Beepi, Resnik made the LinkedIn Next Wave list and MIT Technology Review named him a Top Innovator Under 35.

In the past year Beepi has grown from just two markets (L.A. and the Bay Area) to 15, with an employee base exploding from 10 to more than 150. With over \$79M in funding raised, Beepi has developed an app that allows customers to buy and sell cars from their phones. Ale and the company are featured in a case study written by Professor Scott Stern for his Entrepreneurial Strategy class and Ale regularly comes back to campus to support students and share his learnings.

Three entrepreneurs, hundreds of jobs, billions in market value created, and tens of thousands of lives improved. Stay tuned—more to come.

Elliot Cohen, MBA '13, co-founder & CTO of PillPack

## **GFSA 2015 RAISES THE BAR EVEN HIGHER**

Just when the MIT Global Founders' Skills Accelerator (GFSA) program was being recognized as the premier student accelerator in the world, a new organizing team came in and took it to a dramatic new level. Summer 2015's cohort featured our biggest class ever, with 12 MIT teams and two international teams, from Mexico and the Netherlands. These student teams experienced the most complete program to date and the results showed in the Demo Day presentations, which can be seen online at <a href="http://gfsa.mit.edu">http://gfsa.mit.edu</a>. Also, for the first time, we brought our Demo Day to New York City in addition to San Francisco and MIT.

Dr. Patricia (Trish) Cotter, just off her success at Netezza, the second company she has brought public, took over as GFSA director at the beginning of the summer, bringing her deep operations expertise. The quality of the 12 MIT teams, selected from a pool of 114 applicants, was exceptional. Two elite international institutions, ITAM of Mexico and TU Delft of the Netherlands, also ran competitions and sent their best student team to MIT for the summer, helping to diversify the perspective of the cohort.

The GFSA program has its roots in experiments run by the Center as far back as the summer of 2010, but the program really took off in 2014. It was then that Jack Goss donated \$5M to turbocharge the program. Goss was a decorated World War II veteran, a journalist, a founding figure in the mutual fund industry, and a benefactor who believed deeply in the power of entrepreneurship to make the world a better place. This transformative gift and five-year commitment has allowed the program to hire a director and invest for the longer term to refine and expand the initial concept.

Today, the Center's renowned three-month summer GFSA program is unique, focusing solely on the educating of the students in the entrepreneurial process. The Martin Trust Center takes no equity (hence the "Skills Accelerator" title) and our fully immersive capstone program provides an invaluable experience to our student teams. They view GFSA as the reward for excelling in our other programs during the academic year and this incentive has created a ripple effect to make all of our other offerings more productive. Students can see a clear path to glory in the full portfolio of offerings at MIT, but it requires hard work and dedication.

Highlights of the Past Year

GFSA was designed to be a hybrid. It uses techniques from outside accelerators like Y Combinator and Techstars, and combines them with elements of other entrepreneurial organizations such as General Assembly. GFSA also borrows best practices from other educational institutions.

GFSA is based on the four S's: space, stipend, structure, and status. All teams work out of the Trust Center for the summer so they can form a cohort and learning community, including emotional support. The stipend is a monthly allowance for each student so he or she can focus 100% on the startup; full immersion and commitment are essential to the program. The third "s"—structure—refers to the educational and other support systems GFSA provides. The first month is focused on the customer doing primary market research and carefully understanding the needs and wants of the target population. The second month is focused on the product, defining it in detail and building a prototype or, at minimum, a detailed product specification. The third month is used to build out the rest of the economically sustainable venture and prepare for Demo Day.

Each week there are programs (lectures, guest speakers, cases, and coaches) to support weekly milestones. Each month a "board" meeting is held, where students learn how to present to a board and, most importantly, the process of accountability in business. In these meetings, the board determines what percentage of assigned monthly milestones a team has achieved, resulting in significant milestone payments (totaling up to \$20K per team for the summer). As such, the board meetings, staffed with experts who have been board members in other companies, are intense events with a lot on the line.

The last "s" is for status, which is surprisingly important for the students. That we endorse them and their efforts as legitimate, showcase

them in front of over a thousand spectators during Demo Days at the end of the program, and provide a good deal of press and other exposure, is extremely motivating for the teams—and their parents. It also becomes valuable as they graduate from the program and begin to attract real paying customers; raise money; or recruit employees, advisors, or longer-term board members.

The students in the program are diverse and come from all of the schools within MIT. The teams represent a broad range of industries, and many achieve great success afterward. Past teams have gone on to win numerous awards and raise millions of dollars. The 2015 class will be no different. Already they have raised over \$10M, and one team has met with the Prime Minister of India and been featured in his speeches. But most of all, we know that GFSA produces the next generation of innovationdriven entrepreneurs who will change the world. They are role models for their fellow students at MIT, and a powerful diaspora of ambassadors that will grow and create great value for the Center—and each other—going forward.



The Jackson W. Goss Fellowship was created to support and fund the GFSA program, thanks to a generous gift from the Anne Goss Foundation

## **GFSA 2015 TEAMS**

#### CURRENCY DOC

Today, procuring foreign currency for a trip abroad leaves travelers feeling confused about the rate and suspicious about the transaction. CurrencyDoc is tackling the inefficient and opaque foreign currency market by bringing on-demand, sameday service and transparent pricing to busy travelers.



### emma,

Emma is a Mexican company that provides companionship and mobility assistance for the elderly. It connects the decision makers—their sons or daughters—with compassionate care options that best fits their loved one's needs.

## Everybiome

Everybiome provides daily at-home health monitoring, using the information we flush down the toilet. To improve the lives of ulcerative colitis patients, Everybiome is building a smart toilet and wastebasket automating the collection and analysis of personal health biometric information. These are paired with an analytics platform so that patients can find connections between what they do and how they feel.



Scientists use custom DNA to program new functions into living cells—for everything from therapeutics to biofuels—but buying custom DNA is slow and expensive. Genesis DNA is developing next-gen gene synthesis technology that produces gene-length DNA at a fraction of the price and time of existing services.

## humon

Endurance athletes train intensively to get the most out of their bodies. But getting data they need to be their best requires painful blood tests. Humon is building a wearable that noninvasively measures muscle use of oxygen in real time, identifying athletes' lactic acid threshold and unlocking true potential.

## intentīv ROBOTICS

Aerial videography is the killer app of drones, yet professionals use hobby-grade controllers that were never designed for filmwork. The Intentiv Robotics Aerial Control System gives videographers full manual control of their camera, allowing for intuitive execution of complex aerial shots.

## **SKHETHWORKS**

More than 30 million farmers in Eastern India tend small plots that could yield more with appropriate irrigation. Khethworks builds reliable, solar-powered irrigation systems that enable three-season farming. The company already has multiple pilot sites on the ground.

## umio

Lumio is building a digital health companion that delivers clinical-grade diagnostics at home. Their first product detects fertilization (sperm meeting egg) providing couples with answers in hours rather than the current two-week wait.

## MORPHLAB

MorphLab is creating scalable technologies that enable the effortless reconfiguration of interior spaces with a focus on dramatically increasing the efficiency, affordability, and functionality of urban microapartments. MorphLab aspires to support a new generation of intelligent spaces that maximize the opportunities of extreme urbanization.

## **Sandymount**

Each year, millions are discovering a taste for artisanal, imported beers. Sandymount's proprietary tools enable brewers to reclaim water and reduce their shipping volumes by up to 75% to deliver fine beers of exceptional freshness with a smaller environmental footprint.

## Spyce

Spyce is developing the world's first completely automated restaurant. A Spyce Kitchen cooks and serves delicious meals from fresh ingredients with absolutely no human involvement. Spyce restaurants will revolutionize the fast food industry by operating with extremely low overhead serving high-quality, nutritious meals at fast food prices.

Tekuma connects artists with Airbnb hosts to create galleries in shared living spaces. At the nexus of art, hospitality, and real estate, Tekuma can enhance exposure, environments, and guest experience. Tekuma's platform enables hosts to provide a unique experience for their travelers, while launching a storefront and personalized showcase for every independent curator.



What 3D printing does for parts manufacturing is what VSParticle is doing for the manufacturing of electronics. The company's core technology enables a fundamentally change to the current production system, replacing the wasteful etching process with a simple printing process. VSParticle's proprietary technology starts with pure metal feedstock to selectively write conductive lines.



Woobo opens a world of imagination, fun, and knowledge to children, bringing the magic of a robot companion into their lives. A plush doll with artificial intelligence capabilities, Woobo gives children infinite access to stories, music, and knowledge, which are developmentally appropriate and will help them grow.



**BIOLOGY URBAN STUDIES** + PLANNING **MANAGEMENT AERONAUTICS + ASTRONAUTICS** MEDIA ARTS + SCIENCES COMPUTATIONAL +

POSTDOC

CIVIL + ENVIRONMENTAL

**MATERIALS SCIENCE +** 

**ENGINEERING MECHANICAL ENGINEERING** 

**ENGINEERING** 

**ARCHITECTURE** 

**ENGINEERING +** 

**COMPUTER SCIENCE** 

SYSTEMS BIOLOGY

**ELECTRICAL** 

NOT STUDENTS

HARDWARE VENTURES

SOFTWARE VENTURES

HEALTHTECH **BIOTECH LOGISTICS ROBOTICS AGTECH** FINTECH **CREATIVE** 



## **GFSA: WHERE ARE THEY NOW?**

An incomplete update on GFSA alumni

In the time since Grove Labs took part in the 2013 cohort of GFSA, the company has expanded to 20 employees and raised over \$4M in seed financing. Its product, the Grove Ecosystem, is an intelligent, indoor garden that helps people grow fresh, nutrient-rich food year-round at home in a space the size of a bookshelf. In 2015, Grove Labs used the feedback provided by 50 early adopters of its Ecosystem to help shape the design and functionality for a full rollout of the product in 2016. Grove Labs is



currently based in Greentown Labs in Somerville, Massachusetts, a location the Trust Center helped get started back in 2010 with graduating students who were looking for space to launch their companies.

When **Accion Systems** entered GFSA in 2014, the company was focused on its propulsion technology for satellites. The program introduced the founders to a new entrepreneurial skillset concentrating on business planning and management. They used what they learned to tailor the technology based on customer feedback. Since last summer's GFSA, Accion has raised a \$2M seed round and was awarded a \$3M Department of Defense Rapid Innovation Fund grant. In addition, in July 2015, Accion won the Fortune Magazine Unicorn Idol competition. Accion successfully tested its prototype, and the first commercial product will be available in early 2016. Accion also set up its initial base in Greentown Labs.

**6SensorLabs** was part of the 2013 GFSA class and its first product, Nima, a portable sensor that allows consumers to test their food for

Nima, developed by 6SensorLabs, is the world's first portable gluten sensor and will be available for sale in 2016

Highlights of the Past Year

unwanted ingredients anywhere, was named one of *TIME Magazine*'s Best Inventions of 2015. The San Francisco-based company has raised \$4.8M from top investors.

**Depict,** from the GFSA 2012 class, is just releasing its breakthrough frame so that art can now be enjoyed at a level never previously possible. The company has raised over \$2.3M from quality investors. Depict's CEO, Kim Gordon, MBA '13, has won numerous awards, including being named by TechCrunch one of "30 Women Who Have Revolutionized A Male-Dominated Industry." Depict is located in San Francisco.

WeCyclers, also from the 2012 cohort, gives households in the developing world the chance to capture value through recycling of everyday waste, and its founder and CEO, Bilikiss Adebiyi-Abiola, MBA '12, was featured in a Fast Company article in February 2015 titled "Turning Trash Into Treasure." The company also won the prestigious SEIF Award for Social Entrepreneurship and was awarded a grant from AOL co-founder Steve Case's foundation. WeCyclers is based in Lagos, Nigeria.

Andy Campanella, '05, SM '13, and Melinda Hale Sims, PhD '12, founded Loci Controls out of GFSA in 2012. Today, Melinda is in Washington, DC, for personal reasons (her husband's job) and she has joined another tech startup, Energy Intelligence, as the CTO. Andy continues as the CEO of Loci Controls, which is another company based out of Greentown Labs. Loci helps landfills monitor and control gas emissions. The company successfully completed two small rounds of funding (\$2.1M) while also receiving a National Science Foundation Small Business Innovation Grant and a \$150K Massachusetts Clean Energy grant. Loci recently launched a pilot with a major global landfill company and installed its equipment at five landfill sites across four states.

PhD candidate David Smith, SM '12, and Professor Kripa Varanasi, SM '02, PhD '04, started **LiquiGlide** in the GFSA 2012 class and have raised \$7M in financing this past year while moving into new space in Cambridge's Central Square. The company's patented technology platform for permanently wet, slippery surface coatings has landed it more than 30 customers

in consumer packaged goods, oil and gas, medical and life sciences, and more. Varanasi has also co-founded another company out of his lab called Dropwise, which recently received significant funding as well.



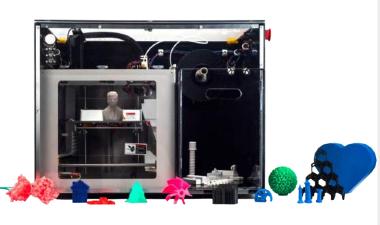
Bilikiss Adebiyi-Abiola, MBA '12, rides one of WeCyclers' fleet of low-cost cargo bikes that help bring recycling of household waste to Lagos, Nigeria

Brint Markle, MBA '14; Jim Christian, SM '14; and Sam Whittemore, '13, came into the 2013 cohort of GFSA anxious to commercialize their project from the Product Design and Development class taught by Professor Steven Eppinger. The team combined their technical and business skills with their passion for the outdoors to bring new levels of safety to extreme snow athletes. Today their company, AvaTech, based in Park City, Utah, and Chamonix, France, has built the first globally crowdsourced network of mountain safety information, and its products are in use by over 500 expert snow-safety organizations in 34 countries. AvaTech received Popular Science magazine's Best of What's New Award in 2014.

Ella Peinovich-Griffith, AM '12, started SasaAfrica in GFSA 2012 because she was passionate about empowering women through utilizing mobile phones and market forces.

continued

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NVBots' NVPro 3D printer is the world's first end-to-end 3D printing solution, with patented automated part removal and the capacity to run 24/7

> Her company, Soko, brought innovation to fashion and technology by creating a brand that connected consumers to global makers in emerging economies previously unconnected to the digital world. Over 1000 artisans, more than three-quarters of whom are female, have on average quadrupled their incomes since joining the Soko platform. The company is based in San Francisco but the artisans reside in over 30 countries around the world.

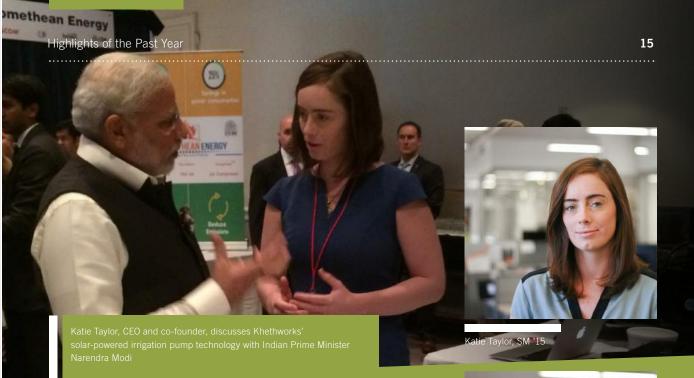
Akash Bhatia, MBA '12, and Purushotham Botla, SM '13, entered GFSA 2012 as Schmooze Butler, a project developed out of Sir Tim Berners-Lee's Linked Data Ventures class. Today, their Kendall Square-based firm, Infinite Analytics, leverages neuro-linguistic programming, predictive analytics, and machine learning to forecast user behavior for retail and e-commerce clients. The firm is at the forefront of big data trends and partnered with Microsoft and IBM to help grow IA to current levels with nearly 20 global customers. Infinite Analytics now has 15 employees in Cambridge, Macedonia, and Mumbai, and has raised over \$2M so far.

Alfonso (AJ) Perez, '13, MNG '14; Christopher Haid, '14; Mateo Pena Doll, '14; and Forrest Pieper, '14, were all undergraduate friends in the MIT School of Engineering who entered GFSA 2013 as a team called NVPrints. The team is still intact, and, boy, have they grown up! Their company, now called NVBots, has set up in the Boston Innovation District in the Seaport and has raised \$3M in seed funding with steps in place for a Series A funding round. NVBots has created the first end-to-end 3D printing solution, which has found widespread popularity among students and teachers focused on STEM education. Following this success, NVBots is turning its attention to bringing its core technology to commercial applications, including making the factories of the future.

This is not a full accounting of all GFSA alumni, but we hope to have this completed for the grand opening of the expanded and renovated Trust Center in May/June 2016. If you have any updates on any of our GFSA alumni, please contact us here at the Center.

GFSA has been one of the pivotal moments in our journey, by helping us crystallize not just the idea, but the team too.

> AKASH BHATIA, INFINITE ANALYTICS



## **KHETHWORKS**

Entrepreneurs to make farms work

The Khethworks team—Katie met in 2.760, Global Engineering, and used their backgrounds and interests to develop a reliable, solar-powered irrigation system that could be used by small, single-acre farmers in the developing regions of the world.

Initial funding from the MIT Tata Center allowed them to begin to research and develop the idea a successful growing season and avoid financial catastrophe. With several trips to the region to do initial primary market research under their belts, the Khethworks team knew they had a technology know how to turn it into a business. Khethworks entered the program looking for an operational shift and a change in mentality so it could to address the initial challenges to both validate and invalidate many of their assumptions with their actual Narendra Modi, who later featured

moving to India for a 10-pump pilot program with customers who will be using the Khethworks product straight through to harvest. During the pilot, the team will engage financing strategies for their customers, and work with Indian result—they hope—in the company and product having the impact they









STUDENT PROFILE

## **SPYCE**

From fraternity to marketplace— revolutionizing fast food

"Why do we pay so much for unhealthy and poor-tasting fast food? And why can't the process be automated?" Such was the spark from Michael Farid, '14, and his water polo teammates as they sat in their fraternity house in fall 2014. It made no sense to these engineers that they had to put up with this when clearly a robot could be designed to solve this problem.

Farid joined up with Brady Knight, '16; Kale Rogers, '16; and Luke Schlueter, '16, and used the Center's StartIAP program in January 2015 to build a prototype that was barely functional, but proved that the concept could work. They also were introduced to the concept of disciplined entrepreneurship. Specifically, a business was more than making a robot. They had to turn their focus to understanding the needs of a potential paying customer and then figure out all the other dimensions involved in creating a viable, economically sustainable business. They spent the spring conducting a deep analysis of potential markets that would be most attractive and

They also came up with a name for their new enterprise: the Spyce Kitchen.

The summer GFSA program allowed the Spyce team their first chance to work full time on their concept for three months. This time was invaluable, as it allowed them to solidify their business plan and meet with many potential customers. The \$20K they earned in milestone payments allowed the team to build a better prototype, which wowed the audiences at Demo Days. Michael and his three fellow team members (still undergrads at MIT) are targeting early 2016 for fundraising efforts and to make Spyce real. The conversion from dreamers to committed and ready-to-go entrepreneurs is completed—at least the first stage. Their education will really never end, but they have achieved the escape velocity necessary to realistically

"GFSA provided us with an in to networks and connections for the future of the business," Farid said "We made contacts in robotics and food services, and even advisors for our board. We used the summe to talk more, learn more, network more, and do more, and we know the space so much better now."



Brady Knight '16



Kale Rogers, '16



Luke Schlueter. '1

## **PROTOWORKS**

In order to take advantage of and integrate with the growing "maker" movement across campus, the Martin Trust Center opened its own ProtoWorks space in April of 2015. ProtoWorks allows students to explore their entrepreneurial ideas through initial physical prototyping, bridging entrepreneurship and innovation, and accelerating learning via experimentation.

After completing training, MIT students can do basic prototyping and design, component assembly, and detailed modeling. The tools and resources in our ProtoWorks space include:

- tools for working with clay and blue foam
- basic mechanical hand tools, a drill press, and band saw
- soldering irons, electronics components such as breadboards, Arduinos, etc.
- a premium desktop 3D printer (the Ultimaker 2)

It is our goal to add an advanced 3D printer and laser cutter in the spring of 2016.

ProtoWorks is part of the MakerWorks initiative launched by the MIT maker czar, mechanical engineering professor Martin Culpepper, which aims to provide students with greater ability to gain hands-on experience in hardware innovation. ProtoWorks allows students to "get their feet wet" with basic and intermediate prototyping, as a pathway to the more advanced tools that the main MakerWorks space in Mechanical Engineering offers.

ProtoWorks and MakerWorks complement existing shops such as the Hobby Shop, Edgerton Center Student Shop, and MIT Electronics Research Society, creating additional capacity to meet the sharply increasing demand for prototyping and maker spaces on campus. Further, since they are run by students, they ensure student demands are met. Students influence shop equipment purchasing, maintenance, and policies.





## MIT LAUNCH

The entrepreneurial bug doesn't have to wait until the college years to bite, which is why the Martin Trust Center is pleased to offer and support MIT Launch, fearlessly led by its founder and executive director Laurie Stach. The program prepares ambitious high school students for real-world success, instilling a self-starter mentality by teaching tangible, practical business skills, and introducing entrepreneurship as a career path.

Over a four-week period during the summer, MIT Launch teaches students about entrepreneurship through starting real companies. Students go through rigorous coursework, collaborate with peers and mentors, and use the multitude of tools surrounding them at MIT to realize what it takes to be successful in the real world—resourcefulness, adaptability, and innovation. We teach the students all about "mens et manus"—mind and hand—by having them live it each day of the program.

Demand to take part in Launch is only getting more competitive. This past year, our admission rate was only 15%, and yield was over 90%. The 2015 class represented 30 states and 23 countries, was greater than one-third female, and included 9% scholarship students.

For the 2014 – 2015 academic year, the Launch initiative now has year-round impact with the piloting of MIT Launch Clubs, run by alumni of the Launch program. Almost 100 companies were started through these clubs, with the top teams invited to MIT to pitch their businesses in early May.

For the coming academic year, we hope to expand our Launch Clubs to more than 100 schools and 2,000 students. And plans are in development for a free online course on the edX / MITx platform, aimed at guiding first-time entrepreneurs through the steps of starting a company, helping to overcome the hurdles for launching something new.

My time at Launch has been an experience of unparalleled growth as an entrepreneur and also as a person. Thank you for providing a platform for me to launch (tee hee) the rest of my life.

ANNIE ZHANG, 2014 SESSION 2 

# SECTOR PRACTICE LEADERS PROGRAM

Building industry-specific entrepreneurship communities

### The Sector Practice Leaders (SPL) Program

recognizes that each industry presents unique challenges for entrepreneurs. While broad-based entrepreneurship education is useful, there was an additional need to provide knowledge to address key challenges faced when starting companies in specific industries.

Initiated this academic year with a generous gift from an anonymous donor, the SPL Program built on the vibrant energy entrepreneurship ecosystem that the Martin Trust Center and other groups across campus had built up over several years. Student leaders were selected through a competitive process to develop plans and implement comprehensive, integrated, and cutting-edge programs for students in the energy, healthcare, creative arts, and financial services (aka FinTech) fields.

The activities around the energy sector were used as a model, including advanced classes, an active student club, an annual conference, a business plan contest, regular social events, guest speakers, and more. These efforts had led to an unsurpassed track record of producing high-quality energy entrepreneurs. Our goal was to keep pushing the leading edge in energy while simultaneously transferring our knowledge and success to other industries.

Each industry sector we chose for this program started at different maturity levels. Healthcare had both an active student club, Hacking Medicine, and an academic class called Healthcare Ventures that was patterned off the successful Energy Ventures class. The creative arts sector, though less developed, had a base at MIT from student-led hackathons over prior years. The FinTech sector was nearly a blank slate going into the program (see page 20).

Since the donor's funding to support SPL is only for two years, our goal was to quickly

show the value of an industry-specific focus to entrepreneurship education. Student leaders moved quickly to identify and robustly support and integrate activities that were already working well. They also, after an in-depth assessment, identified holes and then brainstormed and developed new programs to fill those holes immediately.

We are pleased to report the first year was an excellent success. We have already created a community of well over 1,000 MIT-affiliated individuals engaged in activities in one of the four sectors. More than a dozen events have been held—some one-offs, some regular weekly meetups—with more than 1,400 attendees. These include mixers, speaker series, hackathons, conferences, even trips to New York City and London. Ten prizes were awarded, including the MIT Art Patch, the MIT Healthcare Innovations Prize, and the MIT FinTech Business Plan Prize.

Looking ahead, the energy sector is building better platforms to connect MIT's energy and water community across departments and degrees. Creative arts plans to integrate MIT Art Patch with Hacking Arts and bridge the various campus stakeholder groups. Healthcare aims to increase interaction with industry leaders in Greater Boston and serve as a super-connecter for aspiring founders.



FRONT: Sam Breen, Sector Practice Leader Program Coordinator; Fiona Murray,
Trust Center Faculty Director; Alex Wright-Gladstein, MBA '15 REAR: Michael
DeBenigno, MBA '15; Nathan Stebbins, PhD '16; Andrew Warren, PhD '18;
Carlos Sanchez Altable, MBA '16; Bill Aulet, Trust Center Managing Director;
Daniel Strawser, SM '12, PhD candidate; Vincent Hennemand, MBA '15

## FROM ZERO TO SIXTY

Building a FinTech entrepreneurial ecosystem

The first year of the Financial Services sector practice has been tremendously successful under the leadership of Carlos Sanchez Altable, MBA '16. The goal of discussing, and promoting financial technology and innovation at MIT and beyond. By stimulating student interest around this sector, the hope is that they become

student demand. In January 2015, implementation started with the birthing of the MIT of the ten events organized during the spring semester (speaker series, alumni mixers, a day-long event in May 2015 that gathered more than 300 attendees at the MIT Media Lab to listen to a stellar lineup of speakers, including founders of some of the

The strong increase in FinTech entrepreneurship activity on campus was confirmed when ten FinTech business plans reached the semifinals of the MIT \$100K Business for travelers, and Invoplace, an online marketplace for small enterprise financing in Latin America.

The practice has also made a huge effort to raise awareness outside of MIT of the Martin Trust Center's efforts to build a FinTech ecosystem, and Altable has events around the globe, such as Sibos 2015, Finovate Americas 2015, and London Fintech Week.

During the semester, Altable also worked with Bill Aulet and Antoinette Schoar, the Michael M. Koerner (1949) Professor of Entrepreneurial Finance at the Sloan School of Management, to launch the first graduate-level course in the country to cover financial technology applications, FinTech Ventures. The course follows a model very similar to its counterparts in energy and healthcare, and was launched during the fall Computer Science and Harvard Law School.

For leading these efforts to build a FinTech entrepreneurship ecosystem from scratch, Altable was recognized in May with the Patrick J. McGovern, Jr. '59 Award, an Institute award recognizing individuals who have made a significant impact on the quality and



## ENTREPRENEURIAL IMPACT AND THE MIT INTERNAL ECOSYSTEM

The role of MIT updated in revision of original seminal study

Entrepreneurship has evolved into one of the most important drivers of the global economy, promoting innovation and economic expansion. According to *Entrepreneurship Education:* Emerging Trends and Challenges for the 21st Century by DF Kuratko (2003), "...while Fortune 500 companies have lost more than 5 million jobs since 1980, new ventures created 34 million new jobs in that same period."

Here at the Martin Trust Center for MIT Entrepreneurship, we've played a pivotal role in fostering a spirit of innovation among the student community. Apart from offering a rigorous, broad, and practical series of entrepreneurship courses for undergraduate and graduate students on campus, the Center also provides advice, emotional support, hardware infrastructure, collaborative workspace, meeting rooms, a videoconference system, and even coffee and

snacks to inspire and sustain young innovators. Our advisory panel boasts the brightest minds in the industry, with programs and events such as the MIT Global Founders' Skills Accelerator Program (MIT GFSA), speaker series, roundtable sessions, and the MIT \$100K Entrepreneurship Competition exemplifying the entrepreneurial ethos that permeates the MIT campus.

According to estimates in a report co-authored by Professor Edward Roberts and Professor Fiona Murray, as of 2014, MIT alumni had launched 30,200 active companies, employing roughly 4.6 million people, and generating annual revenues of \$1.9 trillion. If they were their own country, these MIT-backed startups would constitute the 10th largest economy in the world.

#### **ENTREPRENEURSHIP AT MIT**

For the 2014 – 2015 academic year, more than 50 entrepreneurship courses were offered along with numerous other co-curricular and extracurricular offerings such as hackathons, bootcamps, maker

continued

continued from page 21

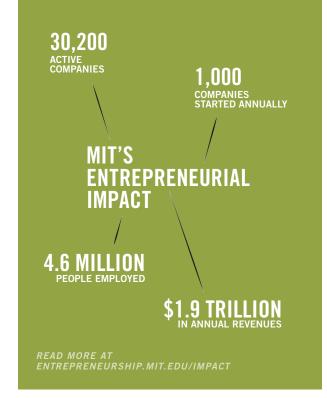
events, competitions, and much more. During the summer, the capstone and truly unique MIT GFSA program was conducted to establish the yearround importance of entrepreneurship at MIT.

The five primary organizations that support the campus-wide startup culture are:

- the Martin Trust Center, offering a solid curriculum, workspace, coaching, and networking support to MIT students
- the Venture Mentoring Service, pairing student, faculty, and staff entrepreneurs with talented mentors in a well-defined process
- the Technology Licensing Office, offering patent, trademark, and licensing assistance to budding inventors
- the Deshpande Center, providing financial and other support for technology development and commercialization
- the Gordon Engineering Leadership Center, preparing students to be successful entrepreneurs by training them in the necessary soft skills

According to Institute statistics, MIT graduates of the 1950s who founded companies did so at age 37. In the 1990s, that age dropped to 33. Slightly less than one-third of all international students at MIT become entrepreneurs, while one in five USbased MIT graduates start their own business.

In his book, Disciplined Entrepreneurship, MIT Senior Lecturer and Martin Trust Center Managing Director Bill Aulet explains that his target audience is young entrepreneurs who may have a brilliant, innovative solution to a meaningful problem, but have no idea how to approach customers or get a venture ready. The Center's fully immersive GFSA program is designed just for these enthusiastic innovators with lots of great ideas but limited business savvy.



#### MIT'S GLOBAL FOUNDERS' SKILLS ACCELERATOR PROGRAM (GFSA)

The three-month-long GFSA program combines entrepreneurial education with real-world opportunities for incubating brilliant ideas and then marketing products born out of such ideas. The best teams are recruited (selection criteria: "people before projects"), and they focus on impactful challenges. The direct benefits of this one-of-a-kind accelerator include equity-free funding up to \$20K; a \$2,000 monthly stipend for a student's living expenses; dedicated workspace; mentorship and guidance to develop ideas, skills, and resources; and an opportunity to pitch to potential customers, employees, advisors, and investors during Demo Day.

#### ADDITIONAL PROGRAMS AT MIT FOCUSED ON ENTREPRENEURSHIP

GFSA is not the only program available to the MIT community. Other programs include:

- the MIT Innovation Initiative, working with all five MIT schools to educate the next generation of innovators, preparing them to move ideas to impact more effectively throughout their careers
- the Legatum Center for Development and Entrepreneurship, promoting social entrepreneurship among the students

• the Lemelson-MIT Program, promoting invention through the Lemelson-MIT National Collegiate Competition

- the Media Lab Entrepreneurship Program, offering coursework that helps students commercialize media technologies
- the MIT Enterprise Forum, originally founded by the Alumni Association and now a part of MIT Technology Review, promoting entrepreneurship through its global network via programs and events
- the MIT Public Service Center, supporting innovation and entrepreneurship through the MIT IDEAS Global Challenge, which awards prizes of up to \$10,000 to teams with the best ideas to positively impact underserved communities

In addition to this list, there are many other entrepreneurial clubs, competitions, and related initiatives, and others are constantly appearing (e.g., the MIT Bitcoin Club), while others die off in a Darwinian fashion. Recently, there have been a lot more new ones than disappearing ones, which is a sign of the times. This dynamic, decentralized scenario on the MIT campus is one we encourage, and it certainly helps to preserve the culture of innovation and entrepreneurship. Working closely with one another, these different entrepreneurshipdriven organizations continue to facilitate the development of entrepreneurs who launch company after company across the globe, further increasing MIT's impact on the global economy.

ENTREPRENEUR IN RESIDENCE PROFILE

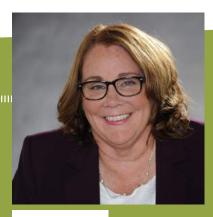
## TRISH COTTER

Trish Cotter is an Entrepreneur in Residence at the Martin Trust Center and director of the Global (GFSA), where she mentors students through the accelerator process for their startup ventures. In addition, she is a lecturer at the MIT Sloan School of to entrepreneurship.

Prior to MIT, Trish was an executive at IBM after its \$1.8B acquisition Microsystems, and Stratus.

SCORE, The Boston Club breakfast program, and Year Up's Business Up mentor helping urban, lowincome young adults to go from

Trish was named Emerging Technology Leadership Council in by voting customers.



She earned her BA in Business Administration from Boston

The preceding article, "Entrepreby Trish Cotter.



# **ACADEMICS**

## **CURRICULUM**

#### Key

- Introductory course Foundational course
- In-company experience labs
   Industry skills
   Industry ventures

#### Fall 2014

### 1.462/11.345

Entrepreneurship in Construction and Real Estate Development

- **2.009** The Product **Engineering Process**
- 2.723/6.902/ESD.051 **Engineering Innovation** and Design
- **2.75/6.525** Medical Device Design

#### 7.547/10.547/15.136/ ESD.691/HST.920

Principles and Practice of Drug Development

#### 9.455/15.128/ 20.454/MAS.883 Neurotechnology

Ventures

10.807/15.371 Innovation Teams (i-Teams)

- **15.360** Introduction to Technological
- Entrepreneurship **15.366** Energy
- Ventures
- **15.369** Corporate Entrepreneurship: Strategies for Technology-Based New Business Development
- 15.375/EC.731/MAS.665 **Development Ventures**
- **15.378/15.370** Building an Entrepreneurial Venture: Advanced Tools and Techniques
- 15.387

**Entrepreneurial Sales** 

- **15.389** Global Entrepreneurship II: Global Entrepreneurship Lab
- 15.390/15.397 **New Enterprises**

- **15.395** Global Entrepreneurship I:
- Entrepreneurship Without Borders
- 15.399 Entrepreneurship Lab

(E-Lab)

- 15.615 Basic Business Law for the Entrepreneur and Manager
- **15.933** Strategic Opportunities in Energy
- **15.\$05** Spec Sem: Regional Entrepreneurial Acceleration Lab (REAL)
- **15.S07** Spec Sem: Healthcare Ventures
- 15.S24 Launching a Startup: Legal Tools and Frameworks
- HST.590

Biomedical Engineering Seminar Series

26 2014 – 2015 Martin Trust Center for MIT Entrepreneurship Annual Report

#### IAP 2015

15.S21 The Nuts and Bolts of New Ventures/ Business Plans ■ 15.\$25 The Story of One Laptop Per Child

■ 15.\$59 Scaling the Social Entrepreneurship Venture ■ **15.862** The Business of Robotics

#### **Spring 2015**

2.739/15.783/ESD.32 Product Design and Development

2.752/2.753

Development of

Mechanical Products

■ 2.888 Professional Seminar in Global Manufacturing Innovation and Entrepreneurship

**3.086/3.207** Innovation and

Property

Commercialization

6.903 Patents,
Copyrights, and the
Law of Intellectual

**6.933** Entrepreneurship in Engineering: The Founder's Journey

■ 10.407 Funding Strategies for Startups

10.807/15.371
Innovation Teams
(i-Teams)

■ 15.363/HST.971 Strategic Decision Making in the Life Sciences

■ 15.376/MAS.664 Media Ventures

■ 15.378/15.370
Building an
Entrepreneurial
Venture: Advanced
Tools and Techniques

■ **15.385** Social Innovation and Entrepreneurship

15.387
Entrepreneurial Sales

■ **15.392** Designing, Developing, and Launching Successful

Products in an Entrepreneurial Environment: Tools and Techniques

■ 15.394 Dilemmas in Founding
New Ventures

15.399
Entrepreneurship Lab (E-Lab)

**15.431**Entrepreneurial Finance

■ **15.615** Basic Business Law for the Entrepreneur and Manager ■ 15.618 Law and Cutting-Edge

■ 15.911 Entrepreneurial Strategy

Technologies

■ 15.S68 Technology Management

■ 15.572 Spec Sem: Introduction to Product Management

■ MAS.533 Imaging & Fabrication Ventures

**MIT's motto, mens et manus (mind and hand),** is an integral part of MIT's entrepreneurial culture and its many entrepreneurship courses. Offerings combine theory and practice to give students ample opportunity to use the skills they have learned within the curriculum.

Nearly all entrepreneurship courses are open to all MIT students, undergraduate and graduate, from all disciplines.

What We Do 27

## **FACULTY AFFILIATES**

Our "dual-track" faculty model brings professors and adjunct practitioners together in the classroom so that students benefit from a broad range of perspectives and experiences.

### Leadership Team

Bill Aulet, Fiona Murray, Edward Roberts, Managing Director Faculty Director Founder & Chair

#### **Professors**

SCHOOL OF ENGINEERING Alex Slocum Steven Eppinger Tim Berners-Lee **Greg Stephanopoulos** Charles Fine Vladimir Bulović Kripa Varanasi Bengt Holmstrom Charles Cooney Yasheng Huang SCHOOL OF ARCHITECTURE Martin Culpepper Andrew Lo + PLANNING Yoel Fink Matt Marx Joi Ito Martha Gray Fiona Murray Sandy Pentland Doug Hart **Edward Roberts** Ramesh Raskar Dina Katabi Antoinette Schoar **SLOAN SCHOOL** Bob Langer Scott Stern **OF MANAGEMENT** Don Sadoway Catherine Tucker Christian Catalini Sanjay Sarma Eric von Hippel Michael Cusumano Joel Schindall

#### Lecturers

Noubar Afeyan Elaine Yee-Lan Chen Dennis Hoffman John Akula Zen Chu Thomas (Tod) Hynes Kirk Arnold James Dougherty Charles Kane Bill Aulet Paul English Francis O'Sullivan James Baum Jonathan Fleming Luis Perez-Breva Philip Budden Joseph Hadzima Louis Shipley Christina Chase Brian Halligan Andrey Zarur

## **E&I TRACK AT MIT SLOAN**

A structured program for MBAs

#### The Entrepreneurship & Innovation (E&I)

Track, led by Martin Trust Center Founder and Chair Professor Edward Roberts, is for students within the MIT Sloan School of Management MBA program who have a strong commitment to entrepreneurship. The E&I Track focuses on understanding and building capability in launching and developing innovative and emerging technology companies. The strong emphasis is on the integration of academic lessons, team practice, and real-world application in entrepreneurship. Students meet and work with a cohort of like-minded peers; gain exposure to key MIT faculty, staff, and other entrepreneurship resources; and tap into a global entrepreneurship network.

The track curriculum heavily emphasizes team practice linked to real-world entrepreneurial

projects, balances theoretical and practitioner education, and provides a thorough exposure to the many building blocks of an entrepreneurial career, while leaving freedom to explore MIT's rich course catalog.

The E&I Track starts with first-semester course 15.360, Introduction to Technological Entrepreneurship, taught by Ed Roberts. Students meet key MIT faculty, outside entrepreneurs, angel investors, and VCs, and learn about MIT's renowned entrepreneurial network on the Silicon Valley Study Tour, while a specialized curriculum helps them choose appropriate courses to further their interests and goals. Students who fulfill the E&I Track requirements receive a Certificate in Entrepreneurship & Innovation concurrent with their MBA degree.

## MIT EXEC ED ENTREPRENEURIAL **DEVELOPMENT PROGRAM (EDP)**

Opening up MIT resources to the outside world

**Experienced entrepreneurs,** senior executives in established companies, academics, regional entrepreneurship development officers, investors, and high-potential managers from around the world can also gain access to the rich education experience offered by the Martin Trust Center on the MIT campus through MIT Executive Education. Each year, in the last week of January, a full-immersion, week-long Entrepreneurship Development Program (EDP) helps accepted students—who want to hone their customer focus and entrepreneurial skills, and learn how to create a more favorable climate for innovation and entrepreneurship within their organization get the same educational quality students at MIT receive, but in a time-compressed fashion.

EDP sessions are led by senior faculty affiliated with the Trust Center and worldleading practitioners. They provide business professionals with a targeted and flexible means to advance their career development goals, while cutting-edge leadership training enables organizations to be better poised for future growth.

Students are also exposed to the MIT technology transfer system, the MIT culture, the Kendall Square entrepreneurial ecosystem, and the global MIT entrepreneurial network. In addition to covering the entire venture creation process from generating ideas to building viable global businesses—there has recently been an emphasis on the nurturing roles of corporations, universities, governments, and foundations. And in a very healthy way, EDP, much like the field of entrepreneurship itself, continues to evolve each year to reflect the new realities in the world and the new learnings of the MIT faculty.

executive.mit.edu/openenrollment

## BRINGING MIT ENTREPRENEURSHIP TO THE WORLD VIA EDX Technology is the lifeblood of MIT, and the Martin Trust Center loves tech that helps Since spring 2014, these courses have seen enrollment of over 300,000 students. This strong interest inspired us to create the MIT Global Entrepreneurship Bootcamp week-long program taught by MIT faculty. The impact these visitors have made since has been remarkable. Laurent Savaete was a water sanitation expert from France an Australian banker with a background in microfinancing. Together they founded water ordered via SMS messaging. CityTaps has signed on the world's largest utility, Veolia, and is conducting a pilot program in Nigeria. at Bootcamp around his drone startup idea. Elio won third place at Bootcamp Demo Day and used this validation to raise \$500,000 from investors in Brazil to use drones to map soybean fields. Without the knowledge gained from the edX courses and hold his own Bootcamp in Mexico City for high school students, but he was concerned their English comprehension might not be strong enough for the 101 course. He and language version of the classes. Renee Rock was a serial entrepreneur now teaching at California Lutheran University who used the online materials and videos from the edX courses to instruct her own students. This stimulated the idea that led to our first MITx Global Entrepreneurship Teachers Bootcamp, held in August 2015 with 13 teachers from eight countries taking part. renowned MIT professor and Trust Center faculty affiliate Eric von Hippel. "User Innovation: A Path to Entrepreneurship" covers how von Hippel's research can help offerings and supports our goal of producing the next generation of innovation-driven We can't wait to see what additional successes will come as our inaugural Bootcampers develop the ideas and companies spawned from our first cohort in 2014, as well as the in March 2016, MIT Global Entrepreneurship Bootcamp will truly be global as it will be held in Seoul, South Korea.



## REAP

Helping the world build entrepreneurs through entrepreneurial ecosystems

The MIT Regional Entrepreneurship Acceleration Program (MIT REAP) is a global initiative at MIT designed to help regions accelerate economic growth and job creation through innovation-driven entrepreneurship (IDE). Partner regions form multidisciplinary teams and commit to a two-year learning engagement with MIT. During this engagement, teams work with world-renowned MIT faculty and the broader REAP community through a series of action-learning activities to build and implement custom regional strategies for enhancing their IDE ecosystems.

MIT REAP admits eight to ten partner regions annually to participate in the two-year engagement. A typical REAP region has a population of three to ten million. Each partner region has a team comprised of five to seven highly driven and influential regional members and headed by a regional champion. All five major stakeholder groups are represented in an MIT REAP team: government, corporate, academia, risk capital, and the entrepreneurial community.

REAP launched its third cohort of participating regions in 2015, including Wales (UK), Santiago (Chile), Ashdod (Israel), Al Madinah (Saudi Arabia), Tokyo (Japan), Beijing (China), SW Norway, and Bangkok (Thailand).

The program represents not only a way for the Martin Trust Center to disseminate its knowledge to create impact in the area of entrepreneurship, but also a way to stay current on the international trends in entrepreneurship. REAP is an opportunity for our students who may be interested in becoming entrepreneurs and for students who wish to become entrepreneurship amplifiers (those who create the environment for entrepreneurship to thrive inside regions, companies, or other organizations). Interestingly, this is something that we have found a demand for among our students, with great synergy between the entrepreneurs and the entrepreneurship amplifiers.



## **SELECTED RESEARCH & PUBLICATIONS**

#### **CHRISTIAN CATALINI**

Christian Catalini, "Microgeography and the Direction of Inventive Activity", Working Paper, Rotman School of Management, June 2015.

Ajay Agrawal, Christian Catalini, and Avi Goldfarb, "Slack Time and Innovation", NBER Working Paper 21134, Cambridge, MA: National Bureau of Economic Research, April 2015.

Ajay Agrawal, Christian Catalini, and Avi Goldfarb, "Crowdfunding Science", Working Paper, Cambridge, MA: MIT Sloan School of Management, December 2014.

#### **ELAINE CHEN**

Elaine Chen, Bringing a Hardware Product to Market: Navigating the Wild Ride from Concept to Mass Production, CreateSpace, 2015.

#### **MICHAEL CUSUMANO**

David B. Yoffie and Michael Cusumano, Strategy Rules: Five Timeless Lessons from Bill Gates, Andy Grove, and Steve Jobs, HarperCollins, 2015.

Michael A. Cusumano, Steven Kahl, and Fernando F. Suarez, "Services, Industry Evolution, and the Competitive Strategies of Product Firms", Strategic Management Journal Vol. 36, No. 4, 559 – 575, 2015.

#### STEVEN EPPINGER

Product Design and Development. Steven D. Eppinger and K.T. Ulrich. McGraw-Hill/Irwin, New York, Sixth Edition.

#### **MATT MARX**

Matt Marx and David H. Hsu, "Strategic 'Switchbacks': Dynamic Commercialization Strategies for Technology Entrepreneurs", Research Policy, 2015.

Testified in front of the Massachusetts State Legislature on his research quantifying the harmful impact of noncompete agreements upon individuals, startups, and the entrepreneurship ecosystem.

#### **FIONA MURRAY**

Joshua S. Gans and Fiona Murray, "Credit History: The Changing Nature of Scientific Credit", in The Changing Frontier: Rethinking Science and Innovation Policy, edited by Adam Jaffe and Benjamin Jones, 107 – 131, University of Chicago Press, 2015.

Michaël Bikard, Fiona Murray, and Joshua S. Gans, "Exploring Tradeoffs in the Organization of Scientific Work: Collaboration and Scientific Reward", Management Science Vol. 61, No. 7, 1473 - 1495, 2015.

Fiona Murray and Julian Kolev, "An Entrepreneur's Guide to the University", in Handbook of University Technology Transfer and Academic Entrepreneurship, edited by Albert N. Link, Donald S. Siegel, and Mike Wright, 97 -132, University of Chicago Press, 2015.

Joshua S. Gans and Fiona Murray, "Markets for Scientific Attribution", Working Paper, Rotman School of Management, November 2014.

#### FIONA MURRAY AND SCOTT STERN

Joshua S. Gans, Fiona Murray, and Scott Stern, "Contracting Over the Disclosure of Scientific Knowledge: Intellectual Property Protection and Academic Publication", Working Paper, Quarterly Journal of Economics, 2014.

Dan Fedher, Fiona Murray, and Scott Stern, "Intellectual Property and the Evolution of Scientific Journals as Knowledge Platforms", International Journal of Industrial Organization Vol. 36, 83 - 94, 2014.

#### **SCOTT STERN**

Jorge Guzman and Scott Stern, "Where is Silicon Valley?", Science 347 (6222), 606 - 609, 2015.

#### **ERIC VON HIPPEL**

Jeroen P.J. de Jong, Eric von Hippel, Fred Gault, Jari Kuusisto, and Christina Raasch, "Market failure in the diffusion of consumer-developed innovations: Patterns in Finland", MIT Sloan School of Management Working Paper, 2014.

Alfonso Gambardella, Christina Raasch, and Eric von Hippel, "The user innovation paradigm: impacts on markets and welfare", MIT Sloan School of Management Working Paper, 2014.



# **COMMUNITY**

## **BIG DATES IN 2016**

The coming year will see two major events that spotlight the past and the future of the Martin Trust Center. In the spring the Center will undergo a dramatic remodeling, including nearly doubling the size of our space to better serve the growing needs of students. Our Grand Re-Opening will be held on Wednesday, June 1, immediately before MIT Commencement and Reunion Weekend.

And the weekend of November 12 and 13 will be the 25th Anniversary Celebration of the founding of the MIT Entrepreneurship Center. A number of events are in store for our Silver Anniversary.

Please mark these dates in your calendars!

What We Do 33

## STUDENT CLUBS AND INITIATIVES

MIT has more than 30 student clubs and initiatives with a focus on entrepreneurship. The Martin Trust Center provides programmatic advising to many of these clubs, and several of them use our E40-160 space to hold club meetings and events.

#### Specific to Entrepreneurship:

MIT \$100K Entrepreneurship Competition

Astropreneurs

CPW (Campus Preview Weekend)

MIT-China Innovation and Entrepreneurship Forum (MIT-CHIEF)

MIT Clean Energy Prize (CEP)

Discover Entrepreneurship and Leadership (DEAL) Freshman Pre-Orientation Program (FPOP)

The MIT Entrepreneurs Club (E-Club)

MIT Entrepreneurship Review (MITER)

MIT FinTech Club

MIT Global Startup Workshop (GSW)

Hacking Arts

Hacking Medicine

MIT IDEAS Global Challenge

MIT Sloan Entrepreneurs for International Development (SEID)

MIT Sloan Entrepreneurship & Innovation Club

StartLabs

MIT Venture Capital and Private Equity Club

VentureShips Club

#### With an Entrepreneurship Element:

MakeMIT

MIT Energy Club

MIT Energy Club at Sloan

MIT Sloan Business Club

MIT Sloan Data Analytics Club

MIT Sloan Healthcare Club

MIT Sloan Tech Club

MIT Sloan Women in Management (SWIM)

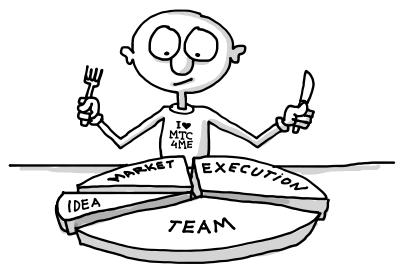
TechLink

TechX

MIT Undergraduate Association Innovation

Committee

MIT Water Club



THE ENTREPRENEURSHIP SUCCESS PIE

## **AWARDS**

MIT rewards and recognizes student excellence in entrepreneurship through awards overseen by the Martin Trust Center. An additional award recognizes commendable effort in entrepreneurship mentoring.

### The Patrick J. McGovern, Jr. Award

The McGovern Award is given at each year's MIT Awards Convocation to an individual or team that, in working closely with the Trust Center, has made a significant impact on the quality and overall spirit of entrepreneurship at the Institute. The objective of the award is to motivate future student leaders, raise the profile of student-led organizations, and reward individuals for outstanding achievement in building entrepreneurial excellence.

The McGovern Award recipients for 2015 are Dan Elitzer, MBA '15; Jeremy Rubin, '16; and Carlos Sanchez Altable, MBA '16 (advancement at MIT of innovation and entrepreneurship in the financial sector).

### The Ronald I. Heller Entrepreneurship Grant

The Heller Grant is presented annually by the Trust Center to a student group or individual students, working closely with our Center, who make a significant impact on the quality and overall spirit of entrepreneurship at the Institute.

The Heller Grant recipients for 2015 are Devin Cook, MBA '15; Lucia Kamm, MBA '15; Esteban Lubensky, MBA '15; and James McGovern, MBA '15.



Bill Aulet poses with McGovern Award winners Carlos Sanchez Altable, MBA '16: Dan Elitzer, MBA '15; and Jeremy Rubin, '16

### The Adolf F. Monosson Prize for Entrepreneurship Mentoring

Created to honor the memory of Adolf F. Monosson, '48. the award recognizes entrepreneurship mentors who have committed their time, energy, and/or capital toward future generations of entrepreneurs. Established at the Sloan School of Management and made possible by Mr. and Mrs. William S. Grinker, '56, the award continues Monosson's mission of providing mentoring to potential entrepreneurs.

The 2015 Monosson Prize was awarded to Senior Lecturer Jonathan Fleming, who defined and developed the Trust Center's courses in biotechnology strategy. Fleming's teaching and coaching have guided countless young entrepreneurs, especially from MIT, to develop their ideas and fledgling firms toward personal satisfaction and significant social and economic returns.

## **OUR STAFF**

What We Do

### Leadership Team



Managing Director



**Faculty Director** 



Founder & Chair

#### Staff



Elaine Chen, Entrepreneur in Residence & Senior Lecturer, MIT Sloan School of Management



Senior Administrative Assistant



Head of Operations



Trish Cotter, Entrepreneur in Residence & Program Director, MIT Global Founders' Skills Accelerator



Entrepreneurship Educators Forum



Sarah Jane Maxted, Executive Director, MIT Regional Entrepreneurship Acceleration Program (REAP)



Laurie Stach, Executive Director, MIT Launch



Program Coordinator



## ENTREPRENEURSHIP EDUCATORS' FORUM

Catalyzing an open-source community

While our primary mission is to serve the students at MIT, we also look for opportunities to share entrepreneurship education with the world. It often happens that if we join a community and give away what we know, we get great value and knowledge on ways to improve our offerings, ultimately benefitting our students.

The Entrepreneurship Educators' Forum (EEF) has been an important experiment that the Martin Trust Center has run over the past year to try to create just such an opportunity via a sustainable sharing platform. It is designed to utilize an open-source approach and online technologies to build an entrepreneurship educators' community that shares information and best practices, then integrates and improves upon these through open discussion and crowdsourced ranking of featured materials.

The spark for starting the EEF was the book Disciplined Entrepreneurship, written by Trust Center Managing Director Bill Aulet. On a regular basis, Bill would receive queries from educators and others outside of MIT regarding how they could teach the *Disciplined Entrepreneurship* method to their own students. In the fall of 2014, Bill hosted three webinars in which he presented his approach to teaching and shared his syllabi and presentations. Through these webinars it became clear that there was a broader, unmet need for rigorous entrepreneurship education.

As a result, the Center hired Michal Gilon-Yanai, who has set up the successful Innovation and Entrepreneurship MBA track at IDC in Israel. An initial tiled framework was built to organize the webinars (see the chart on page 37) focused around three pillars of the entrepreneurial process: nucleation, product definition, and venture development. This represented a more comprehensive curriculum for entrepreneurship education. It also customized the educational pathway for different student personas, such as the curious entrepreneur, the ready-to-go entrepreneur, the corporate entrepreneur, and the entrepreneurship amplifier. Using the tile system, a customized program can be designed for each persona and, in fact, each student.

This framework allows for continued refinement while remaining a comprehensive, actionable

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approach that helps both in addressing individual steps and topics in entrepreneurship, and in designing full entrepreneurship program offerings.

With the tile system and initial materials in hand, Michal began to run webinars centered on each tile with speakers from universities around the world who are considered experts and have developed excellent teaching materials related to the subject in question.

The webinar sessions quickly became popular and the EEF evolved into an open-source platform with a community forming around the content. This was part of Bill's vision from the start—a community that shares ideas, resources, content, knowledge, and best practices, with MIT as the initial catalyst. According to this vision, the community will help to improve the field of entrepreneurship education significantly by developing a high-quality, dynamic knowledge base around each of the three content pillars and the underlying tiles (which themselves evolve over time).

Over the past year, the EEF has hosted eight webinars featuring excellent speakers from both academia and industry. These webinars are recorded and available for viewing at www.

eef.io, along with additional teaching materials shared by speakers from MIT, Stanford, Harvard, NYU, Northwestern, Columbia, the University of Michigan, and more. While not yet actively marketed to a wider audience due to the "living experiment" nature of the platform, EEF has a base of around 400 active members who have provided very positive reviews. The EEF advisory council features leaders from the business and management schools at Carnegie Mellon, Northwestern, the University of Chicago, the University of Virginia, and the University of North Carolina.

Going forward, we will continue to enhance the platform and begin to market it more widely. The bold goal of EEF is to dramatically improve entrepreneurship education by creating a curated, open-source platform as well as a bridge between instructors, be they academics or industry practitioners. The Trust Center should and will continue to take a collaborative leadership position in working to achieve this goal. There is much still to be done, and 2015 – 2016 will be an important year for this initiative.

CORE ENTREPRENEURSHIP-SPECIFIC SKILLS												
PHASE 1 Nucleation	PHASE 2 Product Definition	PHASE 3 Venture Development										
Team Building 1	Primary Market Research	Key Founder's Decisions	Sector Deep Dives	Business Model & Pricing	HR							
Career Choice	Strategy	Basics of Finance	Product Design	Scaling: Manufacturing	Leadership & Culture							
Ideation	Defining & Refining Product	Legal	Product Development	Scaling: Process & Infrastructure	Work-Life Balance							
	Market Fit	Customer Acquisition	Product Management	Financing	Corporate E-ship							
					Building E-ship Systems							
ESSENTIAL SKILLS FOR ENTREPRENEURS (SEMI-CUSTOMIZED)												
Soft Skills		Sales	Communications	Dealing with Adversity	Negotiations							
GENERAL SKILLS TO ENTREPRENEURS												
		Project Management	Corporate Strategy									

# CHALLENGES AHEAD FOR THE TRUST CENTER

As mentioned in the overview on page 5, it has been a great year, but many challenges remain in our mission to change the field of entrepreneurship. Here are the key challenges we face to keep the Martin Trust Center on its upward trajectory.

## SCALING OUR OFFERINGS

We are confident in the quality of our entrepreneurship programs and especially in the progress that has been made over the past several years. But to meet the enormous demand attention, skill, and resources to effectively for entrepreneurship education, we have to maintain this quality as we scale our operations

on all fronts. This is a wonderful challenge and a great place for us to be, but we recognize it also carries dangers and requires significant manage. Scaling is at the heart of the rest of the

The Trust Center common areas and meeting rooms are some of the most-utilized academic spaces on campus. We are often full to beyond capacity, with every huddle room and co-working new footprint will not only be enthusiastically space occupied and people milling around in the common areas. We do not want to be the kind of place about which the late, great Yogi Berra once said, "Nobody goes there anymore because it's too crowded." Thanks to an additional gift from Martin Trust, we are thrilled to be expanding by

approximately 70% in the 2015 – 2016 academic year, as well as renovating our existing space. Based on the demand we have already seen, this welcomed, but also quickly filled to capacity. The energy and the nature of the space—unique, contiguous, and dedicated—is critical to creating the "home" that is so important for the Center. We cannot let space constraints affect our ability to promote student entrepreneurship.

## **KEEPING OUR SOUL**

Maintaining the special culture of the Center as we grow will be another challenge. Clarity surrounding our values is a great start, but we also need an increasingly large and talented team that fully buys into our mission. The professionals at the Center also have to be at the right point in their careers to do the work we require with a fresh perspective and energy, as well as with the vision that working at the

Center is a great career opportunity. Our model of hiring people, especially at the Entrepreneur in Residence level, for two- or three-year stints has proven to be excellent for meeting these requirements. But as we grow and need more staffing, it gets harder to continue the flow of staff who are highly energized and appropriately skilled in the most current technologies and trends.

## IMPROVING OUR INTERFACE WITH **EXTERNAL RESOURCES**

As our students increase in number and they become more developed as entrepreneurs, we are working on ways to provide appropriate training and platforms to gain access to this talent in an educational way, consistent with our mission and values. We will be experimenting in

the upcoming year with new programs such as the BU Law School Clinic @ MIT, but we can do even more to prepare our students to interact with other private-sector service providers and investors in a manner consistent with our educational and honest broker mission.

## RESOURCES

We will need to match the expansion of our various programs with funding sources. From the GFSA and Sector Practice Leaders to the Speaker Series and ProtoWorks space, to grants continued investment.

that support student projects and fellowships, none of these programs can scale to meet the burgeoning entrepreneurship demand without

These are but five of the major short-term challenges we face, but there are more in the longer term, including "How do we institutionalize the progress we have made so that it is a foundation that can be built upon and sustained?" We want the Trust Center to be invaluable here at MIT and beyond 20 years from now. Rest assured that we never stop pushing for greatness—just like the entrepreneurial ventures that we inspire and teach our students to build.

# SUPPORTERS

#### Individual Donors

We are thankful to those individuals whose generous donations to the Martin Trust Center help sustain our diverse entrepreneurship programming. These gifts, large and small, enable us to take on new challenges each year, continually improving the quantity and quality of our offerings.

In particular, we would like to thank Martin, SM '58, and Dena Trust, as well as the following individuals for their generous support to key aspects of the Trust Center's programming:

Darren Palmer Amundson, MBA '00 Charles B. Barr, '13 Matthew S. Barron, '13 David S. Benhaim, '13 Matthew William Bilotti, '03, MNG '04 Gabriel V. Blanchet, '13 Turner K. Bohlen, '14 Gerardo A. Borromeo, '82, SM '83 David K. Chan, MBA '98 Christina Chase

John Chisholm, '84, SM '87 Ryan Saemin Choi, MBA '12 Kelly A. Clonts, '11

Sharon B. Cohen, '04, MNG '05

Zoran J. Crnja, MBA '04 John, SM '84, and Pamela Cuming

Louis DeScioli, '15

Alan F. Dowling, PhD '81

Max Faingezicht Tarcica, MBA '11 William James Fienup, '03, SM '05

Calvin J. French-Owen, '12

Anne Goss Foundation Jean Hammond, SM '86, and Michael A.

Krasner, '74, SM '75, EE '75, PhD '79

Charles J. Huang, '13

Robert T. Huang, SM '79

Filip Ilievski, '03, PhD '08, and Adriana Tajonar, '06

Benjamin Jacob Israelite, MBA '15 Shambhavi H. Kadam, '06, MBA '12

Chuck Kane

Sonia W. Kim, '92

James M. Kanter, '15, MNG '15 Jacques Frederic Kerrest, MBA '09



MARTIN, SM '58, AND DENA TRUST

Stephanie N. Kivett Ohnegian, MBA '99 Eric and Yolanda Lau, '02 Douglas C. Ling, '87 Patrick K. Marx, Jr., '13 Scott M. Maxwell, SM '90, PhD '90 David T. Morgenthaler, '40, SM '41 Sunanda Narayanan, MBA '01 Andrea D. Nickerson, '14 Jason Norris, SM '14 Claire E. O'Connell, '14 Kevin Ohashi, MBA '06, SM '07 Anvisha H. Pai, '14 Jim Pallotta Bob Pozen Ed, '57, SM '58, SM '60, PhD '62, and Nancy Roberts Helen K. Shimbo Vivaek M. Shivakumar, '14 Colin D. Sidoti, '13 Aparna A. Sud, '13 Michael L. Telson, '67, SM '69, EE '70, PhD '73, SM '74 Charlie Tillett, SM '91 Carlo Tursi, MBA '10 Patrick J. Vatterott. '13 Michael Volpe, MBA '03 Allan Will, SM '81 Shan Wu, PhD '11

**Photographers** 

### A bit of history and context on the Trust Center logo

Our logo has come to be an important element of our center over the years and it draws much positive passion now from people worldwide. It was originally selected by the staff and students and spirit. It needed to have synergy with the MIT logo, as we are only able to achieve what the platform of the Institute. As such, the colors of the logo start with the MIT cardinal red and gray, and then ramp up to green, design our programs to start at any level and bring people up the educational process via our rich and diversified set of offerings. Finally the students appreciated placing stickers on their computers or phones, indicating membership in the Center's extended family emotionally, even if they can't be



