VENTUREWELL™
idea to impact

2019 YEAR in REVIEW

our work around the globe

20+
YEARS
of experience in supporting science & tech innovation and entrepreneurship (I&E)

90+
COUNTRIES
with participating program attendees

$970+
MILLION
in funding raised by early-stage ventures supported by VentureWell

8,400+
INNOVATORS
trained by VentureWell's programs and workshops

1,300+
VENTURES
have emerged from our early-stage innovator (ESI) training and workshops

$12+
MILLION
in faculty grants awarded

1,700+
REPRESENTATIVES
across the I&E spectrum have attended OPEN, our annual conference, since 2012

360+
INSTITUTIONS
have participated in our programs

PROGRAMS HELD IN 2019 GLOBAL LOCATIONS

VENTUREWELL™

our mission

VentureWell is on a mission to cultivate a pipeline of inventors, innovators, and entrepreneurs driven to solve the world's biggest challenges and to create lasting impact.

We foster collaboration among the best minds from research labs, classrooms, and beyond to advance innovation and entrepreneurship education and to provide unique opportunities for STEM students and researchers to fully realize their potential to improve the world.

Since our founding in 1995, we've directly supported or trained over 8,400 science and technology inventors and innovators and nurtured thousands of their startups, reaching millions of people in over 90 countries with groundbreaking technological advancements in fields such as biomedicine and healthcare, sustainable energy and materials, and solutions for low-resource settings.

letter from VentureWell ceo and president

Our commitment to, and passion for, solving increasingly complex problems through innovation and entrepreneurship are stronger than ever. Over the past year, we've actively scaled our work to further support innovators, faculty, and the broader entrepreneurial support ecosystem, with a focus on engaging and convening increasingly diverse voices and perspectives.

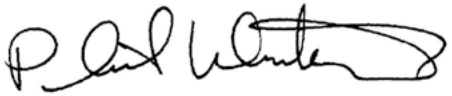
One highlight of the past year was bringing together recognized thought leaders to identify ways to integrate principles of environmental responsibility into science and engineering curricula, in partnership with our founding funder, The Lemelson Foundation. Through these collaborative efforts—we are now co-developing a framework for environmentally responsible engineering education—we're better positioned to influence higher education institutions to embrace teaching sustainability practices.

We broadened our thinking about how to best support early-stage innovators. As developers of model innovation and entrepreneurship training programs, we are in a unique position to leverage our learnings around what students and other young entrepreneurs need to succeed. We reflected on our programmatic strengths to tailor ways to ensure future student inventor-entrepreneurs have a successful idea to impact trajectory. To support this effort, we developed a tool to assess the progress of innovators and entrepreneurs along multiple stages of development, based upon our decades of work in this space. The Venture Development Framework can inform the development, implementation, and evaluation of programs supporting entrepreneurs.

This year at OPEN, we held a forum with our community to elicit a vision for the future of innovation and entrepreneurship education. We have a better understanding of how faculty envision moving that work forward and have started to identify the support needed to make that vision a reality, with acknowledgement and attention to equity and inclusion gaps that exist across the I&E ecosystem.

As we've learned over the years, our impact is not possible without the engaged support from funders, partners, and our community. Join us as we take on challenges to solve global challenges through innovation and entrepreneurship.

Sincerely,



Phil Weilerstein
President and CEO
VentureWell

our funders and partners

VentureWell is proud that leading institutions, from foundations to government agencies to major businesses, support our efforts to transform higher education and technology entrepreneurship.

Founding Partner:

The Lemelson Foundation
improving lives through invention

NSF

DEPARTMENT OF STATE · UNITED STATES OF AMERICA

BILL & MELINDA GATES foundation

USAID
FROM THE AMERICAN PEOPLE

Ewing Marion KAUFFMAN Foundation

NIH National Institute of Biomedical Imaging and Bioengineering
Creating Biomedical Technologies to Improve Health

NATIONAL ACADEMY OF SCIENCES

AUTODESK. FOUNDATION

USDA United States Department of Agriculture

OUR WORK

early-stage innovators

We work directly with early-stage innovators to help them bring their ideas to market through workshops and training, coaching and mentoring, and funding and awards. We work in a variety of contexts with innovators from many backgrounds and experiences. We support university students inventing solutions to real-world challenges and forming companies around them, researchers from academia and government learning how to transition their ideas from lab to market, and young entrepreneurs from emerging economies around the world who are applying their skills to create science and technology ventures.

Our Work & Programs:
E-Team Grants, Early-Stage Innovator Training Program (Pioneer, Propel, ASPIRE), DEBUT Challenge, BMEidea Competition, Innovate Egypt, I-Corps at NSF and NIH, GIST, and Accelerating Saving Lives @ Birth

faculty & change agents

We help faculty and staff at U.S. institutions to develop and implement programs that both cultivate student innovators and promote institutional change through grants, workshops, training, curriculum development, and more.

Our Work & Programs:
Faculty Grants, Lean LaunchPad Educators Seminar, Green Launchpad Educators Workshop, Environmentally Responsible Engineering Initiative

i&e networks & ecosystems

We create and build networks to strengthen the innovation and entrepreneurship ecosystem that supports science and technology innovators, globally, nationally, and within individual organizations and schools. We are committed to moving the field forward through convenings, communication, and workshops, and by leveraging our network of committed contributors who are working to transform i&e education.

Our Work & Programs:
OPEN Conference, GIST Investors, IUCRC, BME-IDEA Meeting, and Frontier Set

environmentally-responsible engineering

The innovations introduced by the engineers, entrepreneurs, and business leaders we support every day have an impact on the material world in which we live. That's why we helped pioneer the concept of environmentally responsible engineering—an approach that arrives at a time of surging interest among engineering students and faculty on minimizing the environmental impact of their work.

Today, this interest has not yet translated into modifications to science and engineering curricula on a broad scale—but, working with leaders in the field across technology, engineering, higher education, business, and venture funding, we are actively working to change that. In partnership with The Lemelson Foundation, we've expanded our commitment to helping educators integrate environmentally responsible principles into science and engineering curricula.

One of the most exciting, practical tools for initiating curriculum-level progress on environmental issues in engineering and innovation is our new Green Launchpad Educators Workshop, which launched in the fall of 2019. This interactive workshop equipped faculty leaders with the knowledge and skills they need to integrate sustainable invention and innovation curriculum and practices into both existing core courses and those that are sustainability-specific. VentureWell has identified environmentally responsible engineering outreach as a key part of our strategy to support the integration of sustainability into engineering education in the coming years.

building angel networks in emerging economies

To create sustainable investment networks in emerging economies, VentureWell, as the implementation partner for the U.S. Department of State's Global Innovation through Science and Technology (GIST) Initiative, created the Investor Mobilization Training program (GIST Investors) in 2017. To date, we have worked with in-country stakeholders in six entrepreneurial ecosystems across the globe—from Mexico to Vietnam—to bolster local financial support for startups. The year-long program, which includes in-country workshops and seminars, fills a funding gap often seen in emerging startup ecosystems.

This work has promoted the emergence of stronger angel investor networks in Kuala Lumpur, which is quickly becoming a financial tech powerhouse in Southeast Asia. As a result of the GIST Investors Malaysia training, in-country partner →

SizzleScience was able to form two new angel investment networks, both of which were endorsed by key stakeholders within the ecosystem. This resulted in the soft launches of the Angels in Science Angel Network, which targets high-net-worth scientists interested in investing in Malaysian science-based startups, along with the University of Malaya Alumni Angel Network, a group focused on alumni of the University who are interested in investing in technology from the University.

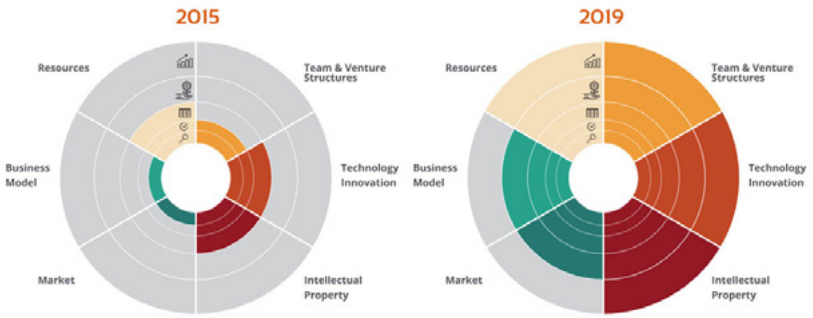
In addition to bolstering the existing angel investor network in Malaysia, these in-country partners are helping to build a strong ecosystem through additional, sponsored investor training workshops.

venture development framework

How can programs supporting science- and technology-based entrepreneurs measure and support participant success, from the earliest idea stage through launch of a scalable venture? What support do teams need when they enter an entrepreneurship support program? What does progress look like as ventures begin to develop? And how can all those who support them—not just funders, but universities, incubators, and other venture-focused organizations—deliver programs and resources to support them in the right ways at the right times?

Historically, the venture community has operated without a map to answer these questions about science & technology startups in the earliest stages of commercialization. These early days of venture development, however, are a critical point in the trajectory of for-profit ventures that are seeking equity investments. In 2019, we developed and launched the Venture Development Framework—a unique, practical, guide to the key dimensions of venture development at this pivotal early phase, informed by our deep hands-on experience and practice-based evidence.

Example assessment of an E-Team at 2015 and 2019



Supported by a technical brief and interactive online tools, the Venture Development Framework has introduced new levels of focus and definition for a potentially wide range of stakeholders invested in the success of science and technology-based ventures. This precedent-setting framework will guide VentureWell programming for years to come.

EARLY-STAGE INNOVATORS

expanding our impact

In 2019, we continued to make valuable connections with early-stage innovators and entrepreneurs. In addition to awarding over $600,000 in Stage 1 and Stage 2 E-Team grants, more than 80 teams took part in the VentureWell ESI Training Program, which includes the Pioneer and Propel training workshops (formerly known as our E1 and E2 training workshops), as well as our landmark investment readiness program, ASPIRE. These training modules combine to address the innovation business and investment growth arc for early-stage innovators who are targeting pre-investment and investment opportunities. Our work also focused on global issues, like the challenge of scaling up groundbreaking healthcare solutions to improve birth outcomes in under-resourced regions worldwide through the Accelerating Saving Lives @ Birth Program. Seven GIST startup trainings delivered programming to catalyze entrepreneurship ecosystems in six countries—Uzbekistan, Egypt, Australia, Vietnam, Argentina, and North Macedonia—enabling young science and technology entrepreneurs to develop the skills to grow and scale their ventures.

EARLY-STAGE INNOVATORS 2019 IMPACT NUMBERS

64

teams participated in our Pioneer and Propel training workshops

18

teams attended the Innovate Egypt program

30 U.S. programs and events

18 global programs and events

930+

participants in **287** teams attended **13** NSF I-Corps workshops

194

teams participated in GIST programming across the globe

$600K

in grants awarded to **64** E-Teams

23

teams participated in the Xcelerator workshop in Durham, NC

EARLY-STAGE INNOVATORS 2019 IMPACT NUMBERS

126+

participants in **42** teams attended **2** NIH I-Corps workshops

91

resulting new businesses incorporated in 2019

48

training courses held with over **1,650+** individuals in **655** teams

19

startups attended our ASPIRE workshops in Baltimore and Salt Lake City

$260M

in funds raised in 2019 by ESI teams

$45M

in SBIR/STTR grants raised by **110+** teams

maria artunduaga, respira labs

Chronic Obstructive Pulmonary Disease (COPD) is the umbrella term for a number of lung diseases such as emphysema, chronic bronchitis, and refractory asthma, and is the third leading cause of U.S. deaths.

It's also the inspiration for the innovation developed by Respira Labs. "My grandmother died as a result of a COPD attack," says Maria Artunduaga, MD, MPH, MTM, founder and CEO of Respira Labs. "Her doctors had no idea how to leverage technology to improve her prospects while she was alive. We need more ways to prevent unnecessary COPD-related deaths. It's an issue we are tackling head-on at Respira, which I launched as a way to quickly and effectively help people suffering from COPD."

Among medical professionals, COPD testing is known for being extremely time-consuming and expensive. To accelerate this process in a cost-effective manner, Respira Labs has invented a wearable device that uses low-cost, off-the-shelf technology working in tandem with AI algorithms running on smartphones to continuously monitor a patient's lung function. The device collects lifestyle and medical data to help doctors and patients more effectively combat COPD. The device consists of a biomarker not currently found in any other respiratory device, and it tracks lung resonance using digital signal processing and machine learning algorithms. The result of all this practical innovation? Providers and COPD patients will be able to intervene earlier, preventing unnecessary ER and hospital visits.

Artunduaga's invention, which was developed during her time at the University of California at Berkeley, benefitted from $25,000 in Stage 1 and Stage 2 E-Team grants, as well as through her team's participation in VentureWell's Pioneer and Propel training workshops. Her innovation was also featured at the 2019 OPEN Minds showcase in Washington, DC, a reception that takes place during the VentureWell annual OPEN conference.

Respira Labs is currently in the prototyping phase and was recently awarded a $225,000 SBIR Phase I from the National Science Foundation (NSF) grant to further support its work. **www.respiralabs.com**

HEALTHCARE/MEDICAL

De Oro Devices

California Polytechnic State University San Luis Obispo

Programs:
E-Team Stage 1 (2019) // E-Team Stage 2 (2019) // OPEN Minds Showcase (2019) // ASPIRE (2019)

A debilitating symptom of Parkinson's disease called "freezing of gait" limits patients' ability to walk, taking away their independence and greatly decreasing their quality of life. De Oro Devices developed Nexstride, an attachment that is secured to mobility assistive devices and uses physical therapy techniques that have been known to reduce time frozen, number of falls, and the number of freezing episodes that occur. **www.deorodevices.com**

ENVIRONMENTAL HEALTH

NUMiX Materials

Northwestern University

Programs:
E-Team Stage 1 (2018) // E-Team Stage 2 (2019) // OPEN Minds Showcase (2019) // ASPIRE (2018)

Current industrial water treatment options do not efficiently remove heavy metals from aqueous streams. NUMiX Materials is creating a product that efficiently reduces the concentration of dissolved heavy metals from water systems across a wide range of pH levels.
https://sites.google.com/view/numixmaterials

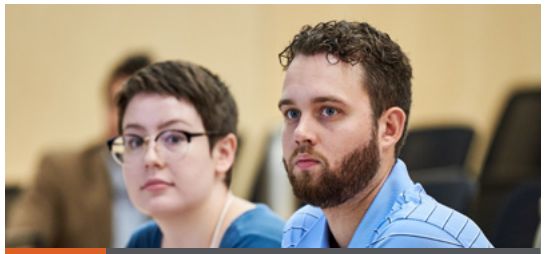
ENERGY & MATERIALS

Sunthetics

New York University

Programs:
E-Team Stage 1 (2018) // E-Team Stage 2 (2018) // OPEN Minds Showcase (2019)

Nylon production is a significant contributor to greenhouse gas emissions because it uses petrochemicals as a manufacturing input and fossil fuels as an energy source. Sunthetics has developed a solar-powered device to use during the chemical input phase of nylon production, helping eliminate greenhouse gas emissions from the manufacturing process. **https://sunthetics.org**



SANITATION/WATER

Contraire

Oklahoma State University
Main Campus

Programs:
E-Team Stage 1 (2019) // E-Team Stage 2 (2019)

Current municipal wastewater treatment plants often over-aerate wastewater as a safety precaution to ensure federal and state regulatory water compliance, resulting in increased energy usage and costly electricity bills. Contraire is developing an automated control system that provides wastewater treatment plants with real-time feedback to optimize the aeration process and reduce energy usage.

HEALTHCARE/MEDICAL

Burnflex

University of Puerto Rico-Mayaguez

Programs:
E-Team Stage 1 (2018) // OPEN Minds Showcase (2019)

Burnflex is creating a novel burn wound dressing using a film-forming foam that is portable and easy-to-apply, and enables more patient mobility, protects against outside elements, and accelerates healing.
www.rethinkfirstaid.com

FLUX MARINE

CLEAN TECH

Flux Marine

Princeton University

Programs:
E-Team Stage 1 (2019)

Operating a family-sized gas boat for one hour releases the equivalent pollution of driving a car for 800 miles. Flux Marine has set out to design and manufacture zero-emission electric boat motors that beat industry performance standards. Their ground-up design utilizes all the advantages of electric power, eliminating common failure points of existing gas engines.

HEALTHCARE/MEDICAL

MedsForAll

University of Washington Seattle Campus

Programs:
E-Team Stage 1 (2019) // E-Team Stage 2 (2019) // ASPIRE (2019)

Underinsured and uninsured patients are impacted by the rising costs and frequent product shortages of emergency autoinjectors like the EpiPen. MedsForAll is developing a universal autoinjector technology that uses the existing ampule medication cartridges used in hospitals and clinics, reducing cost and waste compared to combination product autoinjectors.

HEALTHCARE/MEDICAL

Tempo

Stanford University

Programs:
E-Team Stage 1 (2019) // E-Team Stage 2 (2019) // ASPIRE (2019)

Currently, many women do not have peace-of-mind that their tampons will adequately stop leakage or hold up for an extended period of time. Tempo developed a tampon that incorporates principles of fluid mechanics to allow fluid to be redirected in a spiral orientation and absorb more evenly.

Aeronics

ABOUT

How do you store oxygen efficiently? It's more challenging than you might think, just as with any gas. Today, most solutions rely on high pressure and heavy cylinders, which makes it difficult to transport oxygen easily and presents serious safety issues. For those who suffer from respiratory diseases and rely on medical oxygen, the result is a significant financial and physical burden—heavy tanks that require frequent, expensive refills.

Aeronics is a technology startup focused on finding innovative new ways to make oxygen more portable, at lower pressures. The company has developed a portable, convenient oxygen therapy device with a microporous storage container that provides a safe, low-pressure supply of medical oxygen. Using advanced materials, the tanks are lighter and safer than those currently in use, with benefits that go well beyond medical uses, extending into aviation and recreational applications.

Aeronics continues to work on the development of its medical oxygen device, mediPO. The company has launched its first recreational oxygen product for athletes, EverydayOxygen, a highly portable canister that contains three times more oxygen than its leading competitor. The company has seen the most traction with its veterinary application, Pawprint Oxygen, a portable, cost-effective system for providing oxygen to animals during transport, in hospital settings, and at home.

INVESTMENT:

Aeronics received $640,000 of angel funding in a deal led by BlueTree Allied Angels. VentureWell, Investors' Circle, and other angel investors also participated in the round.

KEY AWARDS:

- → 2018 AUSA Annual Meeting xTechSearch Competition Winner ($150,000)
- → 2016 Randall Family Big Idea Competition First Place Prize ($25,000)
- → 2016 Michael G. Wells Student Healthcare Competition First Place Prize ($25,000)
- → 2016 Kuzneski Innovation Cup Second Place Prize ($5,000)
- → Pitt Innovation Challenge (PInCh) Prize ($25,000)

VENTUREWELL PROGRAM PARTICIPATION:

palmm

ABOUT

Excessive sweating (hyperhidrosis) is a common disorder that can lead to debilitating embarrassment and professional challenges. Approximately 6 million people in the U.S alone suffer from palmar hyperhidrosis—excessive sweating of the hands. Treatment can be costly, inconvenient, and time consuming.

Emerging from the prestigious Stanford Biodesign program, palmm has developed a convenient at-home treatment for palmar hyperhidrosis patients—a wearable electric current delivery system that has been shown in clinical studies to significantly reduce sweat levels. palmm developed this wearable device in conjunction with bioengineers, dermatologists, and plastic surgeons, and is moving toward commercialization. palmm has secured several grants and closed a seed round in 2019.

KEY AWARDS:

→ UCSF-Stanford Pediatric Device Consortium's second annual Pediatric Innovation Showcase Platinum Winner ($50,000)

INVESTMENT:

VentureWell invested in palmm in 2019 alongside several angel investors. palmm is currently a company-in-residence at the Fogarty Institute for Innovation, and also took part in Stanford University's StartX program.

VENTUREWELL PROGRAM PARTICIPATION:

Pathware

ABOUT

Diagnosing biopsies is a surprisingly inefficient process—1 in 5 biopsies fail to make a diagnosis, despite advances in imaging capabilities. The cumulative effect on the healthcare system is significant. At more than $3,000 per repeat procedure, U.S. hospitals alone lose approximately $2.7 billion each year due to repeat biopsies. And for patients, this challenge has a direct impact on the speed and efficacy of cancer treatment.

Pathware is creating hardware and software to address this challenge, seeking to simplify digital pathology workflows and reduce the rate of repeat procedures. Pathware's Bioptic platform is an automated biopsy assessment tool that allows care providers to verify sample quality before the patient even leaves the hospital—using Bioptic, clinicians and technicians can assess biopsy quality in less than 2 minutes. The result: more efficient, effective early-stage cancer detection.

INVESTMENT:

VentureWell invested in Pathware in 2018. The team secured $1.46M from angels in 2019.

KEY AWARDS:

- → 2018 Oregon New Venture Championship ($1,500)
- → 2018 GreenLight Michigan Pitch Competition Third Prize ($10,000)
- → 2018 Valley Venture Mentors Startup Accelerator cohort
- → National Science Foundation I-Corps grant funding ($50,000)

VENTUREWELL PROGRAM PARTICIPATION:

promethean power systems

In 2007, graduate student Sorin Grama was working with a team of fellow classmates from the Massachusetts Institute of Technology when he met Sam White, a business professional brought on to help them create a new solar technology aimed at bringing electricity to rural villages in underdeveloped countries. The duo—and future founders of Promethean Power Systems—traveled to India to evaluate where they could apply their innovation. They discovered, to their frustration, that they weren't able to find many takers—a classic case of a technology looking for a market instead of identifying a problem in need of a solution.

Grama and White were discouraged, but while in India they identified a challenge that they believed could be solved through invention. While still in India, they learned more about a challenge facing low-income countries: keeping milk cool and sanitary in geographies where weather, infrastructure, and access to energy sources are persistent obstacles.

Dairy companies in India must collect milk from over 10,000 villages, twice a day, without reliable access to the electricity needed to keep it at a safe temperature. Traditionally, milk in these villages is chilled with diesel generators. Enter Promethean, whose systems rely on advanced "phase change" thermal batteries—specialized units that store and release thermal energy instead of electrical energy—that can chill milk in minutes. Using thermal batteries is not only cheaper than relying on diesel, but it is also more efficient—and it's having a bigger impact as Promethean grows to serve more villages. The company has installed 1200 of its refrigeration systems to serve more than 60,000 farmers, saving approximately 3 million liters of diesel in the process.

In 2007, the team behind Promethean received a VentureWell Sustainable Vision grant at a critical point in the development of their venture, allowing them to continue to grow and scale their invention. Since then, Promethean has raised more than $5 million from angel investors, venture capital funds, government grants, and private companies, including VentureWell, who invested in the company in 2012. In October 2019, Acumen Fund invested $1 million in Promethean, which will fund a new business line providing dairy companies with technical support and data analytics along with the rental of a chiller unit.

Today, the company, based in Pune, India, sells refrigeration systems for cold-storage and milk-chilling applications in off-grid and partially electrified areas of low- and middle-income countries. Promethean is focusing its efforts in India, the largest producer and consumer of milk in the world. "Of the roughly 130 million tons of milk produced by India each year, over ten million tons go to waste, and additional milk reaches the market as low-quality dairy products that pose health hazards," says CEO Jiten Ghelani. This significant inefficiency is due in part to persistent power supply problems in India—intermittent power and frequent power cuts exacerbate the challenges of keeping milk fresh in a cost-efficient manner.

Promethean's growing list of clients includes many of the largest national and global dairy companies operating in India, like Nestle, Mother Dairy, Parag, and Heritage. Today, Promethean has its sights set on other geographies and has already exported units to Tanzania, Bangladesh, and Sri Lanka. The company's ultimate goal: becoming an end-to-end cold chain solution provider.

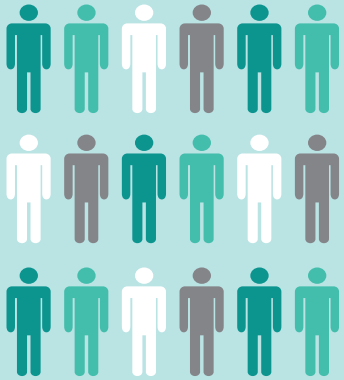
FACULTY & CHANGE AGENTS

delivering on the demands of tomorrow's world

Student inventors and innovators are increasingly concerned about the negative impact that inventions—even those being developed for social impact—can have on the planet. Faculty leaders and other critical partners are seeking tools for teaching their students and mentees about this key aspect of innovation—and we are responding to this growing need, developing the concept of environmentally responsible engineering in our innovation community. Our Sustainable Design Faculty Grants emerged directly from our hands-on work with grantees to identify practical ways to embed sustainability principles into innovation and entrepreneurial-focused academic engineering programs. In 2019, working with The Lemelson Foundation, we also convened a roundtable of leaders focused on environmentally responsible engineering. Our Green Launchpad workshop for sustainable design grantees expanded on our work in this area and dovetailed further work with The Lemelson Foundation and other partners and experts.

OVER $565K

in grants awarded to **27** faculty grantees



12.9K

students are engaged in invention education activities through faculty grants

50

faculty attended the Lean LaunchPad Educator's Seminar

92

I-Corps members attended the Northeast regional meetup

240

new courses & programs reported by faculty grantees in 2019

25

institutions represented with 2019 grantees

khanjan mehta, lehigh university

Khanjan Mehta is Vice Provost for Creative Inquiry and Director of the Mountaintop Initiative at Lehigh University. He's also an active member of the VentureWell community, serving as a principal investigator for teams participating in the 2019 E-Team grant program, as well as several faculty grants, in addition to appearing as a frequent presenter at our annual OPEN conference.

Mehta traces his interest in entrepreneurship to his experiences in Kenya. "In 2004, I was mentoring a student group that was trying to design and build a windmill in western Kenya," he says. "While on a site visit, I noticed that many existing windmills were dysfunctional. I realized we were doing it all wrong. An entrepreneurial approach was necessary to help keep existing windmills working, to empower local businesses, to reach more people, and to truly transform life in the village. That's exactly what we did—and it worked!"

It's that practical approach that has led to Mehta's inspiring teaching journey. "I'm not satisfied by light bulbs in the head," says Mehta. "I need to see the fruits of innovation out in the world, fulfilling their destiny." Mehta is pressing for a similarly practical approach to entrepreneurship education—not only at Lehigh, but around the world. "Entrepreneurship education should focus as much on education as it does on ideation," says Mehta. "Ideas, presentations, patents, and prototypes don't necessarily solve problems. The best way to deliver this education to students is to partner with them and actually do it."

WomenLead in Entrepreneurship and Innovation

Georgia State University
Principal Investigator: Isabelle Monlouis

This program supports female students through the process of building a profitable and scalable solution to a validated customer problem. Through innovation-focused academic programs, co-curricular workshops, speaker series, and incubator programs that provide mentorship and access to funding, it challenges students to use emerging technologies to innovate on business models they create to solve a problem. GSU is a new VentureWell Member Institution and a first-time grantee.

Developing STEM-Business 'Global Supply Chain Innovation' Concentration with a Focus on Sustainability and Entrepreneurship

University of the District of Columbia
Principal Investigator: Amit Arora

A new global supply chain innovation concentration with a focus on sustainability and entrepreneurship. The goal of the concentration is to expand the scope of STEM education by infusing supply chain, innovation, sustainability, and entrepreneurship curricula into the UDC School of Business & Public Administration and the School of Engineering and Sciences. UDC is a new VentureWell Member Institution and a first-time grantee.

Using IP from Southern Maryland's Navy Labs to Promote Entrepreneurship/ Innovation Education for Lower-Level Undergrads

College of Southern Maryland
Principal Investigator: John Short

A follow-on course to an existing technology transfer entrepreneurship course. Building on previous coursework to develop business models based on federal lab-generated intellectual property, students collaborate with experienced product developers and Navy Lab Principal Investigators to develop minimum viable business products (MVBPs) for previously identified beachhead markets. CSM is a first-time grantee.

Earth System Science Entrepreneurship and Innovation

San Jose State University
Principal Investigator: Carlie Pietsch

A year-long design challenge designed to develop students' knowledge of the ever-changing connections between Earth's systems of water, life, atmosphere, and rock. The program brings sustainable design principles and entrepreneurship into earth sciences, an area ripe with innovation possibilities.

Waste=Food: Innovation for the Circular Economy in Rural Communities

Western Colorado University
Principal Investigator: Taryn Mead

A new experiential course that allows upper-division and graduate students to develop new business opportunities for the circular economy. It is part of a larger, community-wide project to improve the local rural economy in Gunnison Valley, Colorado, and links together sustainability and innovation.

Introduction to Circular Entrepreneurship

ArtCenter College of Design
Principal Investigator: Mateo Neri

A new course, open to all majors at ArtCenter, that combines principles of environmental responsibility and entrepreneurship. It is co-taught by an entrepreneurship faculty member and a sustainable design faculty member, with a focus on team-based invention using new plant-based materials and upcycling.

I&E ECOSYSTEMS & NETWORKS

creating new models for innovators, entrepreneurs, and funders

With each passing year, the innovators and entrepreneurs we support come from an increasingly diverse range of backgrounds—and their progress is no longer limited by the bounds of traditional Silicon Valley-based approaches to venture funding. Our experiences show that these emerging leaders benefit from access to an equally diverse group of mentors and funders, and we will continue to focus on developing these ecosystems across the globe in the coming year. In 2019, we also amplified our efforts to build and nurture a wide variety of innovation communities, both domestically and abroad. For example, our work implementing the U.S. Department of State's GIST Investors program took us to five countries, where we conducted seven workshops—expanding our global footprint with new initiatives and new partnerships. Our active cultivation of these ecosystems continues to lead the way in showing how the next generation of venture-funded innovators will make their impact.

2019 IMPACT NUMBERS

OPEN 2019

320 representatives across the I&E spectrum attended OPEN 2019 in Washington, D.C.

55 combined attendees across 2 pre-conference workshops

95% say they would collaborate with a contact from OPEN on research or practice

GIST INVESTORS

7 GIST Investor workshops in 5 countries

401 individuals trained

IUCRC

48 centers assessed research and innovation outcomes

62 individuals attended **2 customer** discovery boot camps with **13** new IUCRC grantees

OPEN 2019

One of the most powerful ways to build and sustain a community of innovators is simply to bring them together. That's one reason our annual OPEN conference, held in Washington, D.C. in March 2019, was such a success, and a key part of our network and ecosystem building strategy. The convening engaged current and future leaders in innovation education to discuss the most important issues and opportunities they face each year. This year's OPEN was organized around five key themes, ranging from the impact of innovation on societal problems to expanding innovation ecosystems through off-campus and cross-campus partnerships. The topic of sustainability figured prominently at OPEN 2019, with Melanie Nakagawa, Head of Climate Initiatives for investment firm Princeville Global, delivering an inspiring keynote at our Sustainable Practice Impact Award Luncheon. This year's Sustainable Practice Impact Award went to Hazel Technologies, which is helping improve efficiency in agricultural supply chains and reducing food waste.

OPEN Minds, our annual showcase of VentureWell E-Teams, gave student entrepreneurs the opportunity to showcase their technologies and ideas to leading entrepreneurship educators and compete for cash prizes based on popular vote. This year's winner, Burnflex (University of Puerto Rico-Mayaguez), which has created an innovative burn wound dressing currently being developed for home use, took home the $3,000 top prize.

MISSION 2025

What are some of the most important issues and challenges in I&E education that must be addressed by 2025? That is the critical conversation we sparked at Mission 2025, a special forum at OPEN 2019 that brought together leaders in education, venture funding, and innovation to actively brainstorm solutions to move the field of I&E education forward. In this session, we facilitated a conversation with participants to understand their vision for I&E education, identify practical ways to achieve that vision, and determine what type of support is needed to make it a reality. The valuable insights we received were wide-ranging, from equity and inclusion issues to ethics, cross-disciplinary collaboration, and more. These insights are already shaping VentureWell's work in other areas such as programming and grant support.

GIST 2019

The U.S. Department of State's Global Innovation Through Science and Technology (GIST) initiative supports young innovators around the world through networking, skill-building, mentoring, and extending access to financing to help develop startup solutions that address economic and development challenges. Since 2015, VentureWell has played an important role in delivering this program, reaching more than 135 emerging economies around the world.

In 2019, we attained new heights in programming for GIST, hosting investor trainings, pitch competitions, webinars, and global entrepreneurship summits—24 programs in total, many of them in Southeast Asian countries, as well as in Mexico and Egypt. Our extensive work in these areas has positioned us well to expand our reach to more funders, innovators, and entrepreneurs all over the world.

what's next

As we look toward the coming year, we are well-positioned to scale our work. Moving forward, we will broaden our efforts to support and partner with a diverse group of members in the I&E community to ensure tomorrow's inventors are prepared to address pressing issues through invention and entrepreneurship.

We will continue to actively engage with faculty practitioners, researchers, and entrepreneurship support organizations to better understand what training and resources early-stage innovators need to succeed. We will gather input and best practices from key stakeholders to share with the broader community.

Our efforts to provide resources and convenings to help educators integrate principles of environmental responsibility into science and engineering curriculum will continue to increase. We will keep working to ensure that one day, all students will have the opportunity to develop this important skill set.

We look forward to taking action with peer organizations and institutions to ensure the pipeline of innovator-entrepreneurs reflects the makeup of society. We will continue to engage in deep conversation about what it means to be truly inclusive, diverse, and equitable in I&E education and STEM entrepreneurship, and will begin to enact new approaches and strategies that put these discussions into action.

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THANK **YOU**

OUR WORK AND THE SUCCESSES OF OUR COMMUNITY OF INNOVATORS ARE MADE POSSIBLE THROUGH THE SUPPORT OF VISIONARY PARTNERS—FROM ENGAGED FACULTY GRANTEES AND DEDICATED MENTORS AND REVIEWERS TO GENEROUS, COMMITTED FUNDERS. TOGETHER, WE ARE AMPLIFYING EFFORTS TO MAKE A LASTING POSITIVE IMPACT AROUND THE WORLD.


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2019 YEAR IN REVIEW

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