

**101 Edu****Carnegie Mellon University | 2017 | www.101edu.co**

101 is a venture-backed startup that is transforming the college STEM education with a next-generation active learning platform that promotes student engagement and improves student outcomes. Their first product for chemistry, Chem101, has quickly grown from 8 to over 200 higher ed institutions in the span of the past two years. Their unique approach focuses on elegant, discipline-specific assessment tools, such as molecular structure drawing, that triumph over generic multiple-choice tools and outdated online homework.

The company was the winner of Inc. magazine's 2017 Coolest College Startup and the Student Startup Madness 2017 @ SXSW Interactive competitions. They won third place at the McGinnis Venture Competition 2017 @ Carnegie Mellon University. 101 was featured by CNBC, Inc., Cheddar, Royal Society of Chemistry, and Edtech Digest. They are based in New York City.

**AC Biode****The University of Cambridge | 2019 | www.acbiode.com**

AC Biode is developing the world's first-ever AC (Alternating Current) battery by "Biode", which has both the characteristics of Anode and Cathode. With offices in Tokyo, Japan and Cambridge, England, the company has won a number of competitions in the past 12 months, including the Monozukuri Hardware Cup 2020, Tech Briefs' Create the Future, and the Mitaka Business Plan Competition.

**AcceleDent****Formerly OrthoAccel Technologies | University of Illinois at Chicago | 2006 | www.acceledent.com**

Based in Houston, AcceleDent is a privately owned medical device company developing, manufacturing and marketing products to enhance dental care and orthodontic treatment. AcceleDent is the first FDA-cleared clinical approach to safely accelerate orthodontic tooth movement by applying gentle micropulses (SoftPulse Technology) as a complement to existing orthodontic treatment. Used daily by patients for approximately 20 minutes, it can reduce treatment time by 50 percent.

The company and its product, which is offered at more than 2,000 orthodontic locations nationwide and distributed in over 20 countries, have been featured in a number of news outlets including The Business Makers show and ABC News.

**Acera Surgical****Washington University in St. Louis | 2014 | www.acerasurgical.com**

Acera Surgical is a bioscience company developing and commercializing a portfolio of fully synthetic electrospun scaffolds for regenerative medical applications. With technology licensed from Washington University, Acera's products exhibit a structure similar to native extracellular matrix (ECM) and thus support rapid and effective healing. The FDA cleared Acera's first product, Cerafix® Dura Substitute, in 2016 and its second product, Restrata™ Wound Matrix, in 2017.

Headquartered in St. Louis, Missouri, Acera raised a new equity round in October 2018.

**Acoustic Wells****Massachusetts Institute of Technology | 2020 | <https://acoustic-wells.com>**

Acoustic Wells is focused on democratizing Industry 4.0 innovations through use of novel signal processing & physics know-how with easy-to-use IoT hardware & software, starting in the legacy oil & gas space. Their initial products include a series of sensors to monitor both

tanks and the wellhead that connect to their cloud platform, allowing operators to run their assets smarter and cleaner than ever before, all at a price point order of magnitude below the cost of traditional monitoring or control options.



Active Energy Systems

Cornell University | 2018 | <https://www.activeenergysystems.com>

Knoxville, Tennessee-based Active Energy Systems is leveraging its scientific expertise to create and commercialize an enhanced form of ice thermal energy storage. Such an enhancement will not only further open up the current ice energy storage markets such as comfort cooling and process cooling, but also help enable an upcoming form of electricity storage: pumped thermal energy storage. They received an Energy Efficiency and Renewable Energy (EERE) SBIR grant in May 2020.



Adhesys Medical

Formerly Medical Adhesive Revolution | RWTH Aachen University, Germany | 2014

Adhesys Medical developed novel polyurethane-based medical adhesives. Their topical adhesive, CUTIS was designed for wounds and surgical incisions. Their biodegradable surgical sealant, VIVO was used internally to stop bleeding, seal wounds, and reinforce suture lines. It was the first hemostatic sealant that worked in a wet environment. The company won the Rice Business Plan Competition in 2014 and MassChallenge Boston in 2016.

Adhesys announced its acquisition by the Grünenthal Group at the 2017 RBPC. Based in Aachen, Germany, Grünenthal is an entrepreneurial, science-based pharmaceutical company specializing in pain, gout, and inflammation.



Advano

Tulane University | 2015 | www.advantotech.com

Founded in 2014, Advano is a nanoparticle manufacturing and processing company that is applying fundamental chemical engineering principles to lithium-ion battery technology. The startup features an innovative four-in-one step nanoparticle manufacturing process that is rapid, simple, efficient, and highly scalable. Their process produces high quality, functionalized silicon nanoparticles that are more affordably made than those at the current market price.

The company has a new, 30,000 square foot headquarters within the University of New Orleans Research & Technology Park. Advano partners with the Argonne National Laboratory to create silicon nanoparticles for lithium-ion batteries.



AeroShield Materials

Massachusetts Institute of Technology | 2019 | www.aeroshield.online

Aeroshield Materials is making the next generation of energy-efficient windows possible by manufacturing super-insulating aerogel sheets. AeroShield's material is designed to drop inside existing double-pane manufacturing to create a window 50% more insulating – reducing energy use and improving comfort. Developed by the founders at MIT, this patent-pending porous glass offers state-of-the-art performance in a lightweight and affordable form-factor.

AeroShield is part of the Wells Fargo Innovation Incubator, the Activate Boston, MA 2020 cohort, and was featured in Forbes 30 Under 30: Energy. They were recently selected for Activate Boston 2020 Fellowship.



Aerospec

Northwestern University | 2018 | www.aerospec.us

Aerospec Technologies is a software company that makes aerial thermography inspection of solar farms easier, faster, and more cost effective. Their proprietary data analysis solutions allow operators to plan and execute missions and receive a comprehensive report in hours. Unique to its technology, Aerospec uses video thermography as data input, which the algorithm can deliver batches of reports to the user-friendly AeroSolar platform as soon as data is uploaded. Because of Aerospec's industry leading turnaround time, asset owners, EPCs, O&M providers can repair anomalies faster, leading to a higher and faster ROI. Their turnkey inspection solutions have collectively helped owners of over 15 GW on inspections.

**AlgenAir****University of Maryland | 2020 | <https://algenair.com>**

AlgenAir developed the Aerium, a natural air purifier that uses algae to reduce carbon dioxide indoors. They have sold hundreds of units to customers in 27 states and four countries. They are in the process of scaling the technology to clean the air in an entire home or office space. They are headquartered in Baltimore, Maryland.

**Alleviant Medical****Rice University | 2017 | <http://alleviantmedical.com>**

Alleviant Medical is a privately held medical device company that is dedicated to developing novel therapies for patients suffering from heart failure. The company has developed a transcatheter technology intended to decompress the left atrium without a permanent cardiac implant or open-heart surgery. The procedure is designed to be performed under fluoroscopy (x-ray) and ultrasound guidance using a minimally invasive approach and leverages standard interventional cardiology techniques. The company's mission is to alleviate the significant clinical and economic burden of heart failure and to improve the lives of millions of patients suffering from this debilitating disease. Alleviant Medical's investment partners include Vensana Capital, Broadview and Longview Ventures, TMC Venture Fund, S3 Ventures and an undisclosed strategic investor.

The technology was developed at the TMC Biodesign program. The company is based out of TMCx in Houston, Texas.

**Alva Industries****Formerly Alva Motor Solutions | Norwegian University of Science and Technology | 2018 | www.alvaindustries.com**

Alva was founded to meet the growing global energy demand with green technologies. They develop electric generators for production of clean energy and electric motors to convert this energy into motion. Founded in 2016, Alva's reputation in the industry has grown alongside an ingenious and patented production technology with proven superiority over conventional alternatives. FiberPrinting™ enables production of low-weight, high-efficiency electric motors and generators for a wide range of applications, reflecting their true purpose. They do not just enhance electric motors and generators. They enhance cars, ships and airplanes, UAVs, medical equipment, robots, satellites, and so much more.

In 2020, the company secured a development contract with Lockheed Martin to develop an electric motor for next-generation marine vehicles. They are headquartered in Trondheim, Norway.

**Ambiq Micro****University of Michigan | 2010 | www.ambiqmicro.com**

Ambiq was founded in 2010 with the mission to foster a cleaner, greener, and safer environment where mobile and portable devices could either reduce or eliminate their total power consumption from the batteries. They laser-focused on inventing and delivering the most revolutionary microcontroller (MCU) and System-on-Chip (SoC) solutions in the market

for the last ten years. Through the advanced Subthreshold Power Optimized Technology (SPOT™) platform, Ambiq has helped many leading manufacturers worldwide create products that can operate for days, months, and sometimes years with a lithium battery or a single charge.

Over 75 million devices are embedded with an Ambiq chip. The Austin, Texas-based company was named IoT Semiconductor Company of the Year™ Award in 2021 IoT Breakthrough Awards Program. Ambiq Micro was a finalist in the 2010 Rice Business Plan Competition and is based in Austin, Texas.



Aqdot

University of Cambridge, England | 2013 | www.aqdot.com

Aqdot is a Cambridge (UK)-based supramolecular chemistry company with a focus and expertise in developing, licensing and selling novel proprietary products. At the core of Aqdot is Aq™Bit, a novel and versatile performance chemistry that has exceptional capability at capturing, holding and releasing materials. In unique and proprietary formulations, this chemistry is game-changing in a wide range of industries, including household and personal care products, fragrances, industrial chemicals, agrochemicals, and pharmaceuticals. Identifying unmet needs in these sectors, Aqdot develops products that enable their customers to introduce novel and differentiated brands and make a positive impact on the environment.

In 2020, the company new distribution licenses with Biobax, a UK-based owner of an environment-friendly biological professional cleaning brand and with an Italian company. Aqdot was a finalist at the 2010 RBPC.



Arctic Sand

Massachusetts Institute of Technology | 2011 | www.arcticsand.com

Arctic Sand is a fabless semiconductor company with a high-quality, high-volume and cost-effective supply chain. Its supply chain partners include TSMC and the world's leading players in wafer production, test and packaging technology.

The company's initial product roadmap is focused on power conversion for LED display backlighting and microprocessors for mobile applications such as smartphones, tablets and ultrabooks. Its technology is highly flexible and will soon be applied to broader applications such as servers, storage and networking, and integrated within processors and ASICs.

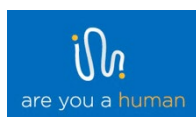
To date, they have amassed 15 patents and completed their Series B funding round. The MIT spinout received the Best Venture Award at the National Renewable Energy Laboratory's 24th Industry Growth Forum and was an of EE Times Silicon 60 – Hot Startups to Watch. The company was also a Northeast Regional Cleantech Open Winner.

In October 2016, Arctic Sand signed Wikeng as an Asian distributor and released their ARC2C0608 LED Boost for notebooks and tablets. This release will reduce power loss by half. A graduate of the North Shore InnoVentures'– incubator, Arctic Sand is headquartered in Cambridge, Massachusetts. They have a second design center in Santa Clara, California.

Japan's Murata Manufacturing acquired Arctic Sand in March 2017. Murata is an existing investor in Arctic Sand, leading a Series B round in 2016.

Are You a Human

University of Michigan | 2011



Are You A Human enables any website to be sure they are addressing a real human before serving content, services, or ads. Each day they analyze hundreds of millions of interactions across millions of websites to verify real human users and eliminate bots. Founded in 2010

with offices in Detroit and New York, Are You A Human are the foremost experts in online human behavior.

The company placed second at the 2011 Rice Business Plan Competition and has been featured in PC Magazine, VentureBeat, Rolling Stone, and Forbes and on CBS News (Detroit). The Detroit, Michigan, company counts automakers Chevrolet and Ford among its clients. In March 2016, the company sold their video platform, TruEngage to PK4 Media.

Are You a Human was purchased by Distil Networks in May 2017. Distil Networks is a global leader in bot detection and mitigation headquartered in San Francisco, California.

**Arovia**

Rice University | 2016 | www.arovia.com

Arovia creates and owns the IP to enable expandable displays. In 2020, the company launched new product: Splay. Splay doubles as the world's largest ultra-portable display and as a projector. The company is based in Houston, Texas.

**Ascent Technologies**

The University of Chicago | 2016 | www.ascentregtech.com

Ascent Technologies is a RegTech firm that helps customers simplify and automate their regulatory compliance programs. Its IntaaS (Intelligence-as-a-Service) platform uses a proprietary vertical AI and automation processes to convert the rules and documents of a regulatory body into units of intelligence that are distributed to customers online. Ascent's RegTech products allow customers to automate their regulatory compliance function by helping them to identify, monitor, and manage their regulatory obligations, saving time and money and reducing regulatory risks.

Chicago-based Ascent has filed 14 patents and provisional patents. They recently completed a successful pilot for the Commonwealth Bank of Australia and ING, turning 1.5 million paragraphs of regulations into a series of actionable tasks. The Ascent team are using the funds from a March 2018 Series A to improve automation, swell the number of regulatory channels for their customers, and for additional hires.

**Astorian**

Yale University | 2018 | www.astorian.com

Astorian is an online marketplace that connects property managers and contractors for repair and maintenance work. It is being successfully used in over 900 buildings in New York City. The team is currently raising a seed round.

**Astrolabe Analytics**

University of Washington | 2019 | www.astrolabe-analytics.com

Astrolabe analytics provides a software solution for battery companies and their partners. they enable their clients to efficiently use their battery data to make batteries that work better, longer, and more reliably using a suite of cloud computing, data management, and machine learning techniques. Their initial product automates tedious battery data parsing, visualization, and statistical analysis. future development will focus on their maturing data management and data science toolkit. They are headquartered in Seattle, Washington.

**ATDynamics**

Formerly Advanced Transit Enterprises | Dartmouth College | 2006

ATDynamics is the leading global supplier of semi-trailer, rear-drag trailer aerodynamics technology. The company is reducing the fuel consumption and associated greenhouse gas emissions of leading North American trucking fleets by 12 percent. Its TrailerTail® rear-drag

aerodynamics technology will deliver over \$20 billion in fuel savings to trucking companies and consumers over the next decade by streamlining the airflow at the back of two million long-haul semitrailers pulled on U.S. and international highways.

ATDynamics was named to the Inc. 500, Inc. magazine's annual list of America's fastest growing private companies in 2013. Based in Hayward, California, ATDynamics won first place at the 2006 Rice Business Plan Competition.

In 2015, ATDynamics was acquired by Stemco, maker of commercial vehicle wheel end, braking and suspension components. Stemco is a subsidiary of EnPro Industries, Inc. EnPro is a leader in sealing products, metal polymer and filament wound bearings, components and service for reciprocating compressors, diesel and dual-fuel engines and other engineered products for use in critical applications by industries worldwide.



Ateios

University of California, San Diego | 2018 | <https://ateios.com>

Ateios provides conformal energy solutions, specifically flexible batteries for medical wearables and IoT. They aim to drive innovation to new heights that humanity has not yet seen in the world of conformal energy by changing the key limitation: the rigid battery.



Auditude

The University of California, Los Angeles | 2005

Auditude was the leading video advertising technology and monetization partner for premium content owners and distributors. They maximized the value of video content while decreasing operational cost and ensuring a positive advertising experience for consumers anywhere they view video. Auditude worked with marquee broadcast and professional content companies including Comcast, Major League Baseball and Fox News.

In 2011, Auditude spun out a social TV app business called IntoNow. Based on the SoundPrint platform, IntoNow gives users the ability to almost instantly recognize TV content and then helps them share and discuss those shows with friends, both within the product and through social networks such as Facebook and Twitter.

In November 2011, Auditude was acquired by Adobe Systems. Adobe is based in Palo Alto with offices in Chicago, Los Angeles, New York City, and London.



Aura Biosciences

Massachusetts Institute of Technology | 2008 | www.aurabiosciences.com

Aura Biosciences is developing a new class of therapies to target and destroy cancer cells selectively, while leaving surrounding tissue unharmed – an approach they call molecular surgery. By safely eliminating cancer locally, they can treat early and transform the lives of people with a wide range of cancers that are poorly managed today. Their ad program in ocular melanoma (OM), also known as choroidal or uveal melanoma, is designed to remove cancer cells in the back of the eye as a first-line therapy, while allowing for the potential of preserving patients' vision. The goal is to treat small ocular melanomas potentially long before the disease progresses and metastasizes to the liver, where it almost always is fatal. Development of a first-in-class, non-radioactive treatment option to selectively destroy cancer cells would create the possibility to transform the treatment of this and other cancers where the disease can be detected early.

Aura's headquarters are located in the biotech cluster in Cambridge, Massachusetts.



Aurign

Georgia State University | 2020 | <https://www.aurign.com>

Aurign is a music publishing database that collects royalties and captures accurate metadata for PRO's, Publishing companies, and record labels ease the use of licensing publishing rights through A.I. and blockchain technology. Their technology captures metadata for music rights and verifies the accuracy of those rights and automates publishing agreements. Rights, permissions, and licenses are recorded on blockchain ledger to simply transactions to different stakeholders.

Aurign won the 2020 RBPC. They headquartered in Atlanta, Georgia.

Avanti Metal Company **Harvard University | 2006**

Avanti Metal produced titanium to sell at one-tenth of the current price, using one-half of the current capital and with one-hundredth of the hazardous waste and pollution of other producers. This lightweight, white metal is used in aircraft, ships and spacecraft. Avanti's technology is based on Sadoway processes developed by Dr. Donald Sadoway, a expert in electrochemistry at the Massachusetts Institute of Technology. The small startup's early capital was funded through a grant from the MIT Deshpande Center for Technological Innovation.

Avanti Metal Company was sold to an international company specializing in metal production.



Avesta76 Therapeutics **Johns Hopkins University | 2019 | www.avesta76.com**

Avesta76 Therapeutics is developing novel therapeutics for treating many types of cancer. They recently brought numerous individuals onto their advisory boards who are very actively involved in their company's progress and development and also added several key partners to their team. Avestra76 is based in Pasadena, California.



Avitus Orthopaedics **Formerly BOSS Medical | Johns Hopkins University | 2011 | www.avitusortho.com**

Avitus Orthopaedics Inc. is a medical device company developing novel instruments for minimally invasive surgery. The company is developing a novel surgical device that will enable surgeons to use gold standard autologous bone graft material. Current bone graft solutions are suboptimal in terms of efficacy, safety and cost. Avitus will provide the optimal bone grafting solution in order to improve the lives of its patients worldwide.

In 2016, The Avitus Bone Harvester was approved by the U.S. Food and Drug Administration. The company is launching a Series B round to foster sales in international markets. They have been awarded additional grants from the National Science Foundation, the Johns Hopkins Technology Accelerator Fund, the Maryland Innovation Initiative, the Coulter Translational Partnership Award, the Maryland University Development Technology Fund (TEDCO) and the NCIA.

Based in Baltimore, Avitus Orthopaedics was founded in 2011 by spine surgeons and biomedical engineers at Johns Hopkins University.



Bennu **Baruch College | 2010 | www.bennuworld.com**

Bennu is the leader in green social media marketing. Their sustainability solutions increase enterprise value by aligning clients' business objectives with consumer demand and environmental resources. Bennu's mission is greening the standard for a new lifestyle.



Headquartered in New York, their clients range from multinational corporations to startups that embrace business sustainability as a competitive advantage.

BetaGlide/rention.ai

Indian Institute of Technology, Kharagpur, India | 2014

BetaGlide created retention.ai, a mobile app testing platform. The platform allowed other app developers to gather real-time information about their systems usage and app behavior to improve stability and performance. retention.ai's testing platform tracks users uninstalls and events and can measure the marketing efficiency of acquisition channels.

In 2015, BetaGlide was acquired by Inshorts, creator of a content distribution app. The acquisition amount was not disclosed.



BetterLife

Nanyang Technological University | 2019 | www.goblm.com

BetterLife Medical Technology Co., Ltd., located in Jiangsu Province, is led by a specialist from the Chinese Recruitment Program of Global Experts. The company was invited by the provincial government's global talent program to set up its headquarter in Jiangsu. With many years' experience in microelectronic medical device in leading multinational corporation, and more than thirty years' working experience in the united states in clinical medicine, satisfying the market demand, engaging in strategic product differentiation and multi-channel business model, the company integrates and optimizes leading biomedical engineering and mobile Internet technologies, and owns more than 50 domestic and international patents. Many products are a first in the Chinese market. Adopting both traditional and cutting-edge health cloud big data medical models, the company has developed an advanced mobile tinnitus medical device system, which is in a leading position both domestically and internationally. The mobile tinnitus medical device system enjoys a unique competitive advantage in both domestic and international markets and starts to conquer the Chinese market with an estimated market size of roughly 50 million patients.

BetterLife has Obtained Jiangsu Province Food and Drug Administration Class II medical device production license and permit for market access.



BioAesthetics

Tulane University | 2016 | www.bio-aesthetics.com

BioAesthetics was founded in 2015 as a Tulane University spinout with the mission to improve reconstruction options for breast cancer patients after they undergo mastectomies.

The BioAesthetics' initial product is a tissue-engineered nipple-areolar complex (NAC). This product will be provided to plastic and reconstructive surgeons as an off-the-shelf ready, acellular, NAC graft. During the breast reconstruction phase, after a mastectomy, the surgeon would engraft the NAC graft in position onto the patient's reconstructed breast. The patient's body would then use this NAC graft as a building frame to regenerate their own NAC. This patent-pending product is currently in the pre-clinical phase.

In 2020, the company raised an over-subscribed Series A to advance development of their graft product for breast reconstruction for cancer patients. BioAesthetics is a National Science Foundation I-Corps company based in New Orleans, Louisiana



BiologicsMD

University of Arkansas | 2010 | www.biologicsmd.com

Based in Fayetteville, Arkansas, BiologicsMD™ is an early stage therapeutic development company focused on developing highly-targeted treatments for hair loss diseases and conditions, as well as severe bone disorders. The company is developing a series of

recombinant fusion proteins that provide powerful stimulatory effects directly to the target receptors at the point of disease – and do so with sustained therapeutic exposure in either a single dose or very infrequent dosing regimens. The company is working on formulation and delivery vehicles that can accommodate parenteral, local, and topical administration.

Grand prizewinner of the 2010 RBPC, Biologics holds two key patents and is funded in part by a grant from the U.S. Department of Defense. BiologicsMD is a VIC Technology Venture Development™ portfolio company.

**BioLum Sciences****Southern Methodist University | 2015 | www.biolumsciences.com**

BioLum Sciences is the developer of the BioSense AMD (pending FDA clearance). The BioSense AMD is a point-of-care, low cost device that works with their proprietary biomarker technology to analyze airway inflammation in real time. Their technology will provide doctors with invaluable information to better treat individuals with respiratory conditions such as asthma and COPD.

The company received a National Science Foundation grant in 2020 and is a current resident of Johnson & Johnson Innovation's JLABS@TMC in Houston, Texas.

**BIOMILQ****Duke University | 2020 | <https://www.biomilq.com>**

BIOMILQ is leveraging their patent-pending technology to produce nutritionally equivalent breastmilk from cultured human mammary cells. With Biomilq, families can achieve the recommended six months of exclusive breastfeeding while alleviating the climate impacts of bovine-based infant formula. They've received press mentions in Forbes, The New York Times, and The Guardian. The Durham-North Carolina company is funded by Breakthrough Energy Ventures.

**BlackLocus****Carnegie Mellon University | 2011**

BlackLocus developed a SaaS (software as a service) price optimization platform, offering powerful and affordable e-commerce competitive pricing analysis to customers ranging from small businesses to those on the Internet Retailer 500.

Powered by collaboration with industry experts and human-computer interaction researchers, BlackLocus deployed sophisticated machine learning and revenue management techniques in a pricing-as-a-service model, enabling small and mid-sized online retailers to compete with larger and/or more established players.

In 2012, BlackLocus was acquired by Home Depot, a mere 20 months after competing in the 2011 Rice Business Plan Competition. Black Locus has become The Home Depot's Innovation Lab and remains in Austin, Texas.

**BLUEWAVE****Formerly Ivy Creative Labs | University of Florida | 2016 | www.bluewave.tech**

BLUEWAVE Technologies makes a water free, detergent free, and chemical free ozone infusion device to treat orthotic and prosthetic and other healthcare items to revolutionize the quality of the work environment and patient satisfaction.



Bold Diagnostics

Northwestern University | 2016 | www.bolddiagnostics.com

Bold Diagnostics is a medical device company developing an intelligent, diagnostic platform for blood pressure monitoring. They are designing a comfortable monitoring system provides patients with their blood pressure trends. The comprehensive reports generated by Bold's system will be seamlessly uploaded to a patient's electronic medical record (EMR), allowing clinicians to have honest conversations with their patients about their actual cardiovascular disease risk while comfortably integrating into a patient's everyday life.

Bold was created within Northwestern University's Center for Device Development Graduate Fellowship Program (CD2). The company is managed by a well-qualified team of engineers, clinicians and entrepreneurs, with extensive business and medical device experience.

After finishing fourth at the 2016 RBPC, Bold was awarded a Small Business Innovation Research Phase I Research grant from the National Science Foundation to finance a next phase prototype. They placed third in the Phillips Wearables Challenge in 2017. Headquartered in Chicago, Illinois, they have an exclusive license with Northwestern University and have two patents on file.



Boomalang

Vanderbilt University | 2015 | www.boomalang.co

Boomalang is a conversation platform and international team of native speakers, trained to guide 15-min. and 30-min. conversations in Spanish, French, Portuguese, ESL, German and Italian. Serving 100+ universities and schools each semester, Boomalang provides educators a way to integrate authentic, one-on-one immersive experiences for students in beginner, intermediate and advanced courses.

Founded in 2014, Boomalang is one of the fastest-growing language learning platforms. Educators cite Boomalang as the ideal bridge between the classroom and total immersion; often, the Boomalang native speaker is the first with whom the student has ever spoken.

Boomalang is an alumnus of the Jumpstart Foundry Technology Accelerator, SEC Symposium, AWS EdStart, and the NYU StartEd Incubator. They are based in Nashville, Tennessee.



BrewBike

Northwestern University and University of Chicago | 2019 | www.brewbikecoffee.com

BrewBike provides college students coffee in the most convenient way, every day. They serve cold brew coffee at lean retail locations and through wholesale accounts. And by empowering students to launch BrewBike at their schools, they will dominate college campuses across the country, leaving big barriers behind them.

After placing sixth at the 2019 RBPC, BrewBike is now launched at four colleges in three states, with many more on the way. They have sold over 100,000 cups of coffee.



Briteseed

Northwestern University | 2013 | www.briteseed.com

Briteseed is a Chicago-based medical device company developing SafeSnips™. SafeSnips is a forward-thinking technology that puts sense into surgical cutting tools. By integrating blood vessel detection technology with existing surgical cutting tools, SafeSnips can find vessels at risk of uncontrolled bleeding even where tactile feedback is unavailable. By utilizing near-infrared spectroscopy sensors integrated into the tips of cutting tools, such as energy devices, SafeSnips identify the presence and diameter of blood vessels in the immediate cutting area. Surgeons are alerted via video monitors currently used in the operating room.

The company was born out of the 2011–2012 NUvention at Northwestern University. They have been featured in the Chicago Tribune, FORTUNE, Tech Cocktail, Crain’s Chicago Business and the Chicago Sun-Times. Since the RBPC, Briteseed has developed and validated industry-leading surgical imaging technology that employs artificial intelligence to help make operations safer and faster. This technology development will be available to operating rooms in early 2020.

The company is one of the ten U.S. laureates of the 2018 Yei Start in France accelerator. Briteseed placed second in the 2013 Rice Business Plan Competition.



C3Nano

Stanford University | 2010 | www.c3nano.com

Founded in 2010 as a spinout from Stanford University, C3Nano is an advanced materials company focused on developing new materials and chemistries for a wide range of electronic applications. C3Nano’s investors and partners include GSR Ventures, Nissha Printing Co., Ltd., Phoenix Venture Partners, Hitachi Chemical, Lens Technology, Nagase America, and several undisclosed investors, including a top global mobile and internet technology company headquartered in Silicon Valley.

C3Nano’s funding rounds have enabled the company to quickly achieve best in class ink formulations and expanded production capabilities. They have a total of 20 patents in their portfolio, including 13 international patents issued in 2018. An additional 45 patents are pending. C3Nano is headquartered in Silicon Valley with an industry leading manufacturing base in Korea.



CalWave Power Technologies

University of California, Berkeley | 2013 | <http://calwave.org>

CalWave's solution and IP represents the next generation of transformational ocean energy technologies needed to finally unlock the vast carbon-free energy resources that exist in oceans all around the world. CalWave spun out from Cyclotron Road and was awarded a multi-million open ocean demonstration contract by the Department of Energy.

In 2019, CalWave received two additional awards from the DOE to 1) build a commercial scale drive train in parallel to their open water demo and 2) design the next generation of their technology. In 2020, CalWave’s “xNode” was awarded the Grand Prize of the discovery stage of the Ocean Observing Prize to enable the “Ocean of Things”. The company is planning their first open-ocean demonstration later this year in California and will offer xNode devices to their first customers in 2021 for AUV recharging and other entirely novel ocean science missions.

Forbes named CalWave’s project lead, Marcus Lehmann, to the 2016 list of 30 Under 30 in Energy.



CamGaN

University of Cambridge | 2011

A spinout from the Department of Materials Science at the University of Cambridge, CamGaN developed low-cost, gallium nitride white LEDs (light-emitting diodes) for use on standard and readily available silicon substrates.

In 2012, CamGaN was acquired by Plessey, which manufactures semiconductor products used in sensing, measurement and control applications. The company will produce LEDs based on CamGaN’s proprietary GaN-on-silicon technology at its processing facility in Plymouth, England.

**CaptainU**
University of Chicago | 2009

CaptainU helps millions of athletes compete at the next level. CaptainU was founded in 2008 by Avi Stopper & Michael Farb at the University of Chicago, and has offices in Denver, Colorado and San Francisco, California. The CaptainU platform provides athletic development and recruiting tools for millions of athletes, youth and club teams, events and college programs.

The company has never taken any outside capital. They are fully bootstrapped and profitable. The company has been featured in The New York Times, CNN and Fox Business News.

In December 2016, Captain U was acquired by Blue Star Sports. Based in Frisco, Texas, Blue Star manages youth sports through its platform for youth leagues, clubs, associations and their national governing entities. As part of the merger, RBPC alumni Avi Stopper and Michael Farb will step into executive roles at Blue Star Sports while continuing in their existing roles as CaptainU's CEO and COO.

**Cardiosense**
Northwestern University | 2020 | <https://cardiosense.com>

Cardiosense is medical device company developing a platform combining wearables and AI to enable hemodynamic monitoring wherever a patient goes. Cardiosense monitoring and analytics can detect early signs of cardiac decline before any symptoms appear. This will allow care teams to prioritize at-risk patients, implement proactive therapeutic interventions, and monitor recovery.

Finalists in the 2020 RBPC, the team joined TMCx's fall 2020 cohort. Cardiosense is based in Chicago, Illinois.

**CatheCare**
Columbia University | 2018 | www.cathecare.com

CatheCare's mission is to eliminate CRBSIs in the United States and the world. To this end, they seek to achieve several goals: efficacy, safety, and ease-of-use. They have developed CASS (CatheCare Sterilization System), a first-of-its-kind, attachable device that eradicates 99.9% of bacteria, continuously sterilizes even during line access, and does not contribute to bacterial resistance.

New York-based Cathecare is a unique, compatible, and easy-to-use device that save lives.

Cemsica
University of Pennsylvania | 2016

Cemsica is an advanced material startup company founded with the goal of commercializing a novel nanoparticle technology for custom industrial, materials, and biomedical applications. Cemsica's research was a major payload on a 2018 resupply mission to the space station. They are based in Houston, Texas.

**Citrine Informatics**
Formerly Big Science | Stanford University | 2013 | www.citrine.io

Citrine Informatics builds a data platform that enables the efficient optimization of chemicals and materials. Their award-winning materials informatics platform won the 2017 World Materials Forum Start-up Challenge, the 2018 AI Breakthrough award as the "Best AI-based Solution for Manufacturing," and 2020 Cleantech 100 honors.

The Citrine Platform combines smart materials data infrastructure and AI, which accelerates development of cutting-edge materials, facilitates product portfolio optimization, and codifies research IP, enabling its reuse and preventing its loss. Citrine's customers include AGC, BASF, LANXESS, and some of the biggest and most respected names in the materials and chemicals industry in Asia, North America, and Europe.

Founder and CEO Greg Mulholland was recognized in Forbes' 2015 list of 30 Under 30 in Energy. Citrine is based in Redwood City, California.



ClearCam

The University of Texas at Austin | 2018 | www.clearcam-med.com

ClearCam had developed the Kelling Laparoscopic Cleaning System. It is an intraoperative lens cleaning, which eliminates the need to remove the laparoscope from the body cavity for lens cleaning. The device was granted 510(k) clearance from the US Food and Drug Administration in February 2020.

ClearCam has been undergoing early evaluations in hospitals with new users in live human cases, and preparing for augmented commercial efforts in early 2021. They raised a follow-on seed round in August 2020 and handled their first human case in September 2020. ClearCam first patent issued in October 2020 and expect an additional 5+ patents to be issued in 2021. They are based in Austin, Texas.



ClearCount Medical Solutions

Carnegie Mellon University | 2004

Pittsburgh-based ClearCount Medical Solutions developed a radiofrequency identification (RFID) tracking system for the surgical operating room. They assembled an extendable RFID-based platform to improve efficiency while preventing medical errors. ClearCount's SmartSponge and SmartWand-DTX systems are the only RFID-enabled systems for counting and detecting surgical sponges.

ClearCount's technology was recognized by Popular Science as one of the top 100 innovations of 2009. It received both The Wall Street Journal Technology Innovation Award and the International Design Excellence Award. The company has received additional recognition from Time and WIRED magazines.

In 2014, ClearCount was acquired. Details concerning the sale have been kept confidential.



Colonai

Columbia University | 2019 | <http://colonai.com>

Colonai has developed two patent-pending solutions for these two problems. Their products use AI as a second set of eyes to help physicians accurately detect and remove tumors during colonoscopy by finding and highlighting tumors as they appear during the procedure.



Contraire

Oklahoma State University | 2020 | www.linkedin.com/company/contraireservices/

Contraire deploys a retrofit control system to manage the aeration process within mid-sized municipal wastewater treatment plants through utilization of proprietary non-biological surrogate real-time testing techniques. The proactive predictive analysis system has the ability to decrease total energy use by up to 45%, attributable to current Municipal Plant Operators over-aerating the wastewater as a safety precaution to ensure federal and state regulatory water compliance. Progressing towards commercialization while working in Oklahoma State University's entrepreneurial incubator, accelerateOSU.

**CorInnova**Texas A&M University | 2005 | www.corinnova.com

CorInnova is developing a non-blood contacting biventricular cardiac assist device for the treatment of acute heart failure that would eliminate many adverse events associated with existing cardiac assist devices due to blood contact. The device, initially for the fast-growing short-term cardiac assist market (up to 7 days' use), will expand addressable market to \$6B+. The self-expanding, pneumatically driven device consists of collapsible thin-film polyurethane chambers with a nitinol wire frame that deploys within the pericardial sac and surrounds both ventricles. The device gently compresses the heart to increase output using a pneumatic driver that operates in synchrony with the heartbeat.

They have received funding from funding and grants from the National Science Foundation, the National Institutes of Health, and the TMC Venture Fund. CorInnova participated in the fall 2018 cohort at gBETA Medtech, Minneapolis, MN, sponsored by Boston Scientific and the TMCx Medical Device Cohort X9. The company is a resident of Johnson & Johnson Innovation's JLABS @ TMC in Houston, Texas.

**Crystal Sonic**Arizona State University | 2019 | www.xtalsonic.com

Crystal Sonic has developed and patented a technology known as Sonic Wafering. Their technology harnesses the power of sound to dramatically reduce the waste material by 20 times during the manufacturing of microchips.

**Curenav**University of Houston | 2019 | www.curenav.com

Curenav's mission is to help solve the greatest pains of cancer patients – the need to know what is going on in their bodies, what they can do about it, and what their best chance of success looks like – and use this knowledge to reduce cancer mortality for everyone dealing with this disease today and in the future. With incidence rates increasing, cancer affects virtually everyone, and Curenav understands the journey of patients and how critically important it is to find answers to the questions that remain unanswered.

The team has issued their Beta Release and is in pilot negotiations with major medical providers.

**Curiva**Formerly dermadiagnostic | University of Notre Dame | 2019 | <https://www.curiva.co>

Curiva is developing a non-invasive, wearable platform product, diapatch for same-day detection of gynecologic oncology malignancies. Their product, diapatch is a patch for detection of cervical cancer.

The South Bend, Indiana-based company is currently involved with the Association for Behavioral and Cognitive Therapies and is applying for a SBIR Phase I grant.

**cycleWood Solutions**

Formerly cycleWood Plastics | University of Arkansas | 2011

Using their patented technology, cycleWood Solutions modified lignin, an abundant, natural byproduct of the paper manufacturing process, and blended it with other compostable polymers to create their signature product, the Xylobag™. The bag breaks down into humus in approximately 180 days once it has reached the natural environment, improving soil structure and leaving a cleaner environment. They placed fourth in the 2011 Rice Business Plan Competition.

The cycleWood technology was sold to CAPCOR in 2016.



Cytex Therapeutics

Duke University | 2006 | <http://cytextherapeutics.com>

Cytex Therapeutics is Cytex is a mid-stage startup focused on developing regenerative medicine therapies for orthopaedic conditions.

Cytex founders received the 2021 Lanier Award for research in musculoskeletal disease or injury from the American Academy of Orthopedic Surgeons. Cytex has received several new patents, as well as funding from Phase II National Institutes of Health SBIR grants. Additional funding and support is provided by the North Carolina Biotechnology Center, the National Science Foundation, and NC IDEA and by the Duke StartUp Challenge. Cytex is headquartered in Durham, North Carolina.



D-Orbit

Santa Clara University | 2010 | www.deorbitaldevices.com

D-Orbit is the global market leader in the space logistics and transportation service industries with a track record of space-proven technologies, successful missions, and customer outcomes. The company has developed proprietary space logistics technology and transportation solutions to accelerate the growth and development of a trillion-dollar space economy through an incremental strategic approach to the space marketplace to deliver successful customer outcomes today while developing advanced products and services for the needs of tomorrow.

D-Orbit was founded in 2011. With a manifest of future missions fully booked by new and returning customers, the company has already successfully flown 44 payloads. D-Orbit is the first company to address the logistics needs of the space market. Its forward-thinking view has enabled it to consistently create solutions for its customers that save them money and time, like ION Cargo Spacecraft, a vehicle that can transport satellites in orbit and release them individually into distinct orbital slots, and a proprietary cloud-based mission control software suite designed to control entire satellite constellations. On September 3, 2020, they launched their first satellite carrier, ION SCV Lucas, from the Guiana Space Center in French Guiana atop an Arianespace Vega launcher. The mission, named Origin, has been the first commercial flight of ION Satellite Carrier, a small spacecraft deployer designed, manufactured, and operated by D-Orbit. ION's ability to perform orbital maneuvers enabled this first version of the Carrier to quickly release Planet's Superdoves into precise and independent orbital slots, allowing their customer to start its missions sooner and in optimal operational conditions. The first part of the Origin mission consisted of the smart deployment of a flock of Planet's 12 small satellites into a 500km sun-synchronous orbit. Subsequently, they performed IOD/IOV of dedicated payloads.

Based in Milan, Italy, the company has additional offices in Portugal, the United Kingdom, and the United States.



D&P Bioinnovations

Tulane University | 2016 | www.dpbioinnovations.com

D&P Bioinnovations is a regenerative medicine company focused on repairing damaged organs with engineered biomaterials and stem cells. The company has developed a platform absorbable immunomodulatory medical device implant to regenerate damaged organs: gastro-intestine, blood vessels, nerves, tendons/ligaments, and muscle. This platform technology can address the global regenerative medicine market that is expected to accrue over \$110 billion by the mid 2020s. However, D&P's first therapeutic indication is developing an implantable, bioresorbable medical device to regenerate a damaged esophagus (organ providing food to the stomach).

D&P Bionnovations is based in San Diego, California.



Datafiniti

Formerly 80legs | Rice University | 2009 | www.datafiniti.co

Datafiniti provides instant access to web data. The company compiles and indexes product, business and property data from the entire Internet, and using their proprietary technology, transforms it into a single database so businesses can access the web data they need. Data that can be used for a wide variety of business applications like lead generation, pricing intelligence and competitive analysis.

Datafiniti's exhaustive yet scalable data collection and quality control process provides customers with industry-leading coverage and accuracy. They help business take the next step in developing data-driven applications and conducting insightful market research.

Headquartered in Austin, Texas, the company was a finalist at the 2009 Rice Business Plan Competition.



DATTUS

Formerly Bearing Analytics | Purdue University | 2013

DATTUS provided a platform (hardware + software) to make industrial machinery "smarter" and helps industrial facilities compete in the rapidly evolving industrial environment through data-driven intelligent decision making. DATTUS' customers included Faurecia and Wabash National. Dattus Founder Anurag Garg was recognized on Forbes 30 Under 30 in 2017 (Manufacturing & Industry).

The company was acquired by Plex Systems of Troy, Michigan in July 2018. Plex is the Manufacturing Cloud, delivering industry-leading ERP and manufacturing automation to nearly 600 companies across process and discrete industries.



DC Energy Systems

Auburn University | 2017 | <https://dcenergysys.com>

DC Energy Systems electronic power distribution panels deliver a process that allows for monitoring, regulating, switching, and controlling of low voltage direct current commercial power. The system adheres to strict National Electrical Code regulations for design and installation as it gives the ability to blend with current electrical wiring methods and solar integration with the elimination of DC/AC power inverters and adaptors.

Their distribution system will expand direct current markets and direct current usage with existing and potential uses in Personal devices, Lighting, Appliances, Renewables (electric vehicles & storage), Telecommunications, Data Centers, and IT Networks. The system enables competitiveness within the market alongside AC energy companies and solves a need for a safe low voltage commercial DC power distribution panel for controlling and switching DC voltage that was lacking in the consumer market.

DC Energy has two approved utility patents and is based in Alexandria, Virginia.



DDMotion

Formerly Differential Dynamics | Columbia University | 2005 | www.ddmotion.com

DDMotion is a team of engineers dedicated to harnessing clean energy from the immense power of rivers. Using their mechanical, infinitely variable motion-control devices, they have created the first scalable water turbine that uses a speed converter assembly to change variable water flow into constant frequency, grid-compatible electricity. Unlike wind and solar energies, rivers flow continuously, delivering an abundant yield. DDMotion's infinitely

variable motion control technology platform offers a simple solution to a vexing engineering problem: how to efficiently transform rotational speed and torque from variable input to constant output and back. The technology is based on a mechanical system that converts a fluctuating input rotational speed to a constant output.

At the heart of the platform is the Transgear™ gear assembly, a mechanical device consisting of gears, shafts and carrier brackets. Similar to transistors in electronics, Transgear assemblies have three variables. The difference is that Transgear controls torque and rpm instead of voltage and current to eliminate power interruption.

The company holds an array of patents on its innovative variable motion controls. DDMotion is supported in part by the Maryland Industrial Partnerships Program and the Maryland Technology Development Corporation.



Delta Band

Carnegie Mellon University | 2019 | www.deltatrainer.fit

Pittsburgh-based DeltaTrainer is a mobile and smartwatch platform that delivers a full personal training experience for just \$100 per month. They have built powerful tracking and motion analysis technology for the Apple Watch that allows us to offer accountability, live feedback on form/tempo, and completely adaptive workouts. Their real personal trainers use this live feedback in conjunction with their suite of trainer tools to deliver an experience that makes clients feel like their trainer is right there with them in the gym – something no other personal training company has achieved.



Dermadiagnostics

Notre Dame | 2019 | www.dermadiagnostics.co

Dermadiagnostics is a medical device company developing and commercializing a diagnostics patch for cervical cancer prevention – diapatch™. A noninvasive, wearable patch that allows doctors, healthcare professionals, and people to appropriately test for high-risk biomarkers leading to the rise of malignant gynecologic cancer health. A NSF I-Corps grant allowed the company to find product market fit in the are of gynecologic oncology and to define the regulatory strategy. Additional funds supported further milestones of the IP portfolio. The team has obtained designs and quotes from a supplier for the MVP. Currently, dermadiagnostics is establishing the correct collaborations at the University of Notre Dame and with local health systems, physician groups, and key opinion leaders to pilot the diapatch MVP.

They are headquartered in South Bend, Indiana.



DexMat

Rice University | 2015 | <http://dexmat.com>

DexMat manufactures high performance fiber and film products made from carbon nanotubes (CNTs) for a new generation of consumer and commercial applications. Their products are primarily being developed for applications in the aerospace, automotive, and wearable technology industries.

DexMat's clients include NASA, U.S. Army, U.S. Air Force, and the Naval Air Warfare Center. Forbes named co-founders Dmitri Tsentlovich and Francesca Mirri to their 2016 list of 30 Under 30 in Manufacturing and Industry. DexMat was awarded Phase II SBIR grants from both NASA and the U.S. Air Force. The Houston-based company placed fifth overall in the 2015 RBPC.

**Diagenetix**University of Hawai'i | 2011 | <http://diagenetix.com>

Honolulu-based Diagenetix develops mobile, accurate, gene-based (molecular) diagnostic technologies. By enabling diagnostics outside of a centralized lab, they help industries and people more quickly prevent or minimize the spread of harmful pathogens and diseases.

Improving upon the company's original Smart-DARTTM products, the BioRanger is a handheld biology lab, engineered to detect any gene marker. It is controlled by an Android app to facilitate record keeping and sharing of test results. Currently, the device is used by research communities, federal agencies and agricultural producers and processors for on-site detection of microbial contamination and diseases.

In January 2017, the company's Smart-DART Platform for portable molecular diagnostic screening was acquired by Douglas Scientific. The company's original DART technology was originally developed for the detection of select agricultural agents and funded by the United States Department of Agriculture. Their technology has caught the eyes of media outlets such as The Wall Street Journal, TechCrunch and AlleyWatch.

Currently Diagenetix is working on developing the web-based dashboard system and cloud sever to manage their customer's test data generated by BioRanger.

**Disease Diagnostic Group**Case Western Reserve University | 2013 | www.diseasediagnostic.com

Disease Diagnostic Group (DDG) is a medical device company specializing in screening, tracking and diagnosing highly infectious or neglected tropical diseases through portable and reusable devices. Its flagship product is RAM (Rapid Assessment of Malaria).

DDG was founded in 2012 to create products that address the most pressing challenges in global health. These problems include not only better diagnosis of disease but also the communication of data throughout the health care system. The diverse team of engineers, scientists, physicians and global health experts is uniquely dedicated to making high-performance products specifically designed for resource-poor markets.

With offices in Boston, Massachusetts, Buffalo, New York and London, England, DDG is the recipient of numerous grants and awards including Launch NY, the MIT \$100K Pitch Competition and the Harvard Life Science Accelerator. They have been featured in media outlets including CNN Money, The Boston Globe, The New York Times and The Plain Dealer.

Founder John Lewandowski was named to Forbes' list of 30 Under 30 in the social entrepreneur category in January 2017.

**Divert**Formerly FEED Resource Recovery | Babson College | 2007 | www.divertinc.com

Since 2007, Divert has been helping retail supply chains save costs and see greater returns on resource recovery efforts. From trackable food waste bins to organics backhauling—and from energy generation to uncovering untapped opportunities, every customer presents an opportunity to break down old assumptions and create new solutions toward eliminating waste. Their innovative technology and custom-designed solutions bring accountability to retail recycling operations worldwide. Their flexible tools integrate seamlessly into existing workflows, helping customers exceed diversion goals, report on individual store performance and save money—all while making a lasting environmental impact.

Clients include major grocery chains such as Kroger, Ralphs, and Giant. Divert is based in Boston, Massachusetts.

**DMF Medical**Formerly Purisorb | Dalhousie University | 2011 | www.dmfmedical.com

DMF Medical Incorporated was founded with the sole purpose of making anesthesia safer. The company's lead product – memsorb - will be the next generation in CO2 removal for anesthesia circuits. Their patented technology uses membrane separation technology to remove CO2, rather than a traditional chemical reaction. This device will provide a game changing solution to the known dilemma associated with current chemical CO2 absorbers, and aims to provide safer anesthesia, protect the environment and save money.

memsorb is currently under development and is not yet commercially available. DMF's funding comes in part from the Atlantic Innovation Fund. They are headquartered in Halifax, Nova Scotia.

**Drivemate**

Ohio University | 2020

Drivemate offers an affordable Integrated Advanced Driver Assistive System (I-ADAS), which can be either employed by automotive manufacturers as an alternative vehicle Electronic Control System (ECS) or retrofitted on to existing vehicles as an after-market product and service.

**Droice Labs**Columbia University | 2017 | www.droicelabs.com

Droice Labs is an AI/Big Data company that helps match patients to the right therapies by delivering personalized medicine at scale. The company's proprietary technology makes sense of messy, real world patient data including free-form clinical text to offer some of the world's most advanced applications for providers, payers, and life science companies. By organizing and digesting different patient data elements, Droice AI can identify which interventions are working for which patient populations, thereby enabling personalization of care for patients. Apart from patients, payers, providers and life sciences directly benefit from their offerings.

The company was named one of the Ten Most Promising companies at the 2020 Texas Life Science Forum. They placed fifth place at the 2017 RBPC and are headquartered in New York, New York.

**Dynamics**Carnegie Mellon University | 2009 | www.dynamicsinc.com

Dynamics has three business units – an intelligent card, value-added processing, and phone payment technology business unit. The company's intelligent card division has introduced market defining card products such as the world's first multiple account card (Canada), the world's first password protected card (Asia), and the world's first multiple co-brand card (USA). The company's value-added processing division provides real-time loyalty or purchase notification to millions of consumers and includes customers such as Tim Hortons and the Upper Deck Company. They also produce pay-by-phone technology that is used in cell phones. LG Electronics leverages Dynamics technology in LG Pay.

Dynamics has raised over \$110 million dollars in funding from investors including Mastercard, CIBC, Adams Capital Management, and Bain Capital Ventures. Dynamics operates multiple manufacturing facilities, physical card personalization, and remote data trusted service manager (TSM) facilities, with its Global Headquarters in Pittsburgh, Pennsylvania, APAC headquarters in Singapore, LATAM headquarters in Sao Paulo, Brazil, and EMEA headquarters in New York.

Dynamics won the 2009 Rice Business Plan Competition.

EcoLight**Formerly Cirquility/House | Dartmouth College | 2012**

EcoLight installed and managed energy efficient systems for residential and commercial businesses. In partnership with Dartmouth College, EcoLight installed energy efficient systems in the Thayer School of Engineering. After competing in the 2012 Rice Business Plan Competition as House Inc., the founders reorganized, first as Cirquility, then as EcoLight.

In April 2013, EcoLight's founder sold the company. It is still operating under the same name in New Hampshire.

**Educational Vision Technologies****University of California, San Diego | 2020 | <http://evt.ai>**

EVT autonomously generates online classes and study material that enables students to excel academically and save universities money. By autonomously generating notes they give independence to the 70% of students with disabilities who rely on university provided notetakers. EVT is based in La Jolla, California.

**EEme****Carnegie Mellon University | 2013**

EEme was an energy analytics company providing a scalable machine learning platform that converts raw smart meter data into appliance-level and equipment-level insights using proprietary algorithms. It provided demand-side management stakeholders with appliance-level insights leveraging existing smart meter data and without relying on new hardware investments or user intervention."

In January 2019, EEme was acquired by Tendril, the leading provider of Home Energy Management solutions to the utility industry. Details of the sale were not disclosed.

**Elegus Technologies****University of Michigan, Ann Arbor | 2015 | www.elegustech.com**

Elegus Technologies is commercializing nanotechnology enabling safer, longer-lasting batteries. Their aramid-based, ultra-strong battery separator made from high-performance nanoscale fibers was developed at the University of Michigan.

With significant support from the likes of the University of Michigan, MEDC and the National Science Foundation I-Corps program, Elegus has continued to develop its patent-pending battery separator technology. The company headquarters in Ann Arbor, Michigan.

**Elemental Enzymes****University of Missouri | 2012 | www.elementalenzymes.com**

Elemental Enzymes Ag and Turf, is a life sciences company that discovers, develops and produces innovative products to increase crop yields. Elemental Enzymes was founded in 2011 on technology to make and stabilize novel enzymes and has grown to address the agriculture market with enzyme and chemical technologies that have an "outside in" approach to address crop needs. Elemental Enzymes is delivering world class products to top agricultural companies through license and sales opportunities.

Out of 32 scientific positions at Elemental Enzymes, 19 are held by women, and 5 out of the 11 members of their leadership team are female. Elemental Enzymes is based in Columbia, Missouri.

**Elevate K-12**Formerly Elevate Learning | University of Michigan | 2007 | www.elevatek12.com

Since COVID caused shortage of quality teachers and school districts struggle to find certified teachers to fill all content areas in every classroom, Elevate K-12 is offering high-quality teachers the opportunity to teach from anywhere and everywhere. By eliminating zip code barriers, the top-notch education brand is able to bring passionate, engaging teachers who make learning fun, to classrooms across the country through the brand's unique Elevate Live® Technology, built specifically to engage and empower K-12 students.

Elevate K-12' has new offices in their Chicago, Illinois headquarters and in Mumbai, India.

Encapsulate LLC

EncapsulateUniversity of Connecticut | 2020 | www.encapsulate.bio

Encapsulate BioChip technology grows patient-derived cancer cells ex vivo, and screens them against chemotherapeutic drugs. With this technology the oncologist can choose the most effective chemotherapy drug prior to treatment on an individualized basis. Nov. 23, 2020: Encapsulate was named as one of the "5 Top BioTech Startups" Encapsulate is selected as the "Scalable Venture" in the Entrepreneur of the Year ceremony of CT Entrepreneurship Award in February 2021. They are headquartered in Farmington, Connecticut.

**EnKoat**Arizona State University | 2019 | www.enkoat.com

EnKoat is an advanced materials company developing sustainable solutions for the construction industry in an effort to combat climate change. EnKoat's founders have been featured in the 2020 Forbes 30 under 30 list for Energy. They were one of 10 companies in housing selected in the 6th cohort of the Wells Fargo Innovation Incubator (IN2) and selected as one of eight companies in the 6th cohort of the Joules accelerator. EnKoat finished runners-up at the EarthX Cleantech Pitch Competition among 250 startups from all over the world and won the prestigious and the highly competitive Phase I SBIR funding from the National Science Foundation. The company was featured in the 50 to Watch list for 2020 by the Cleantech Group.

They are based in Casa Grande, Arizona.

**Envirobe**George Washington University | 2020 | <https://envirobe.com>

Envirobe is engineering environmental microbes to degrade human waste products and are designed to be environmentally friendly, human-safe, and cost-effective. They work with only naturally occurring, non-pathogenic microbes to breakdown and turnover otherwise non-biodegradable waste in landfill and recycling center settings.

They are based in Bethesda, Maryland.

**Epistemix**Formerly FRED | University of Pittsburgh | 2018 | <https://www.epistemix.com/>

Epistemix is a startup based out of Pittsburgh, Pennsylvania that is a leader in modeling and simulating how things spread or emerge in populations. They use an agent-based modeling platform that combines location, behavioral, environmental, and policy data to provide predictive and prescriptive analytics to users. They work with public and private clients in public health, healthcare, government, and other industries that make decisions impacting populations of people. Their users look to forecast complex social phenomena and complex contagions to create positive change in industry and society.

In October 2018, they received a multi-year grant from the Centers for Disease Control to use FRED's modeling and big data to test approaches to the opioid crisis.

essDOCS

essDOCS

Formerly Electronic Shipping Solutions & eShipping Solutions | University of Pennsylvania | 2004 | www.essdocs.com

essDOCS' mission is to enable paperless trade. Their CargoDocs platform digitizes, automates and accelerates trade operations, finance and logistics. CargoDocs digitizes key trade documents such as original bills of lading, warehouse warrants, certificates of origin, invoices and more. Over 55,000 companies, ranging from 31% of the Fortune Global 100 to innovative SMEs, use their solutions across 203 countries in warehouses as well as bulker, tanker, container and barge movements. Customers are supported from their offices in London, Athens, Galway, New York, Shanghai, Kolkata, Adelaide and Singapore.



Farapulse

Formerly IOWA Approach | The University of Iowa | 2014 | <http://farapulse.com>

The FARAPULSE PFA system, which includes FARAWAVE, FARASTAR and FARADRIVE, received CE mark approval in January 2021 and is commercially available across Europe. FARAPULSE is the midst of an ADVENT trial. Over 150 patients have been treated. Boston Scientific has an exclusive acquisition option agreement with the company.

They headquartered in Menlo Park, California.



Fifth Season

Formerly RoBotany | Carnegie Mellon University | 2017 | www.fifthseasonfresh.com

Fifth Season is a consumer tech company and indoor farming pioneer with Carnegie Mellon University roots that is creating a new era of fresh foods. Its commercial-scale indoor vertical farms use proprietary robotics, AI, and smart operations technology to grow leafy greens and herbs at affordable prices year-round. All Fifth Season food is grown without pesticides and is delivered to local grocery retailers, restaurants, and consumers at maximum freshness.

In 2020, Fifth Season opened its first full-scale farm in Braddock, an historic steel town near Pittsburgh. The company is evaluating sites for similar farms in cities across the U.S.



Flat Medical

National Taiwan University, Taiwan | 2016 | www.flatmedical.com

Flat medical, established in May 2015, is a venture-backed medtech startup focusing on safety issues in clinical practices. The first product, EpiFaith, is a physician-centered safeguard for epidural, preventing the risk of accidental puncture, which leads to serious headache, nausea, prolonged admission time and even paralysis.

In 2020, the company announced that EpiFaith was launched in the Asia Pacific market.

They are based in Taiwan.



Fluency Lighting Technologies

University of California, Santa Barbara | 2015 | www.fluencylighting.com

Fluency designs and creates robust phosphor chips for use with single- or multi- laser diode light engines or high-power LEDs.

Headquartered in Santa Barbara, California, Fluency was started in 2014 by founder, Dr. Kristin Denault, to develop and commercialize technology based on research at UC Santa Barbara. Since then, Fluency has worked to develop robust phosphor conversion materials

to enable the next-generation of laser-based light source technology. They strive to advance light sources from traditional xenon/halogen bulbs through improved LEDs and towards laser lighting.



Fluid-Screen

Yale University | 2015 | www.fluid-screen.com

A spinout of Yale's Reed Lab, Fluid-Screen has developed a revolutionary bacterial detection system for quality assurance testing for municipal water supplies, medical applications and food processing. Fluid-Screen's patent-pending, portable device produces test results in about 30 minutes with over 99 percent accuracy.

In the midst of its research phase, Fluid-Screen has three current pilots: two at major pharmaceutical companies with the third focusing on environmental applications. This last pilot uses grant funding from the Massachusetts Clean Energy Center to test water at beaches, lake and rivers to determine whether they are safe for recreation.

The company won the Grand Prize in NASA's Create the Future Design Contest, a Gold Award from the MassChallenge Accelerator and the M2D2 Becton Dickinson Award. Fluid-Screen is based in Cambridge, Massachusetts.



Flux Marine

Boston University | 2019 | www.fluxmarine.com

Flux Marine is a high-growth marine technology company. They are working to disrupt the marine industry through development of high-performance electric propulsion systems that are designed from the ground up to maximize efficiency, minimize maintenance, and provide a true alternative to gas engines. Their headquarters are located on the water in East Greenwich, Rhode Island.

In 2020, they closed a seed round and ran a successful paid pilot.



Forest Devices

Carnegie Mellon University | 2017 | www.forestdevices.com

Based in Pittsburgh, Pennsylvania, Forest Devices is developing AlphaStroke (AS), the first stroke screening device that can be used by all medical personnel in any environment.

Durable, portable, and easy to use, AS alerts users to possible strokes within minutes. By triaging of stroke and stroke negative patients to the correct level of care, AS dramatically reduces the average delay of 110 minutes that 50% of stroke patients experience. This minimizes time-to-treatment, the critical factor in improving stroke patient outcomes.

In February 2021, the results of their EDGAR study were published in the prestigious journal Stroke. It is the only peer-reviewed study that has shown a device specifically designed for prehospital out-perform the standard of care in the intended population. Forest Devices won the grand prize at the 2017 RBPC.



Formally

Brown University | 2019 | www.formally.us

Formally is an intuitive form-filler for immigration papers. It is designed to guide displaced people through applications for asylum, visas, and citizenship. They believe in breaking bureaucratic barriers to make their world more accessible. Formally deconstructs forms into their base parts and reorders, groups, and explains these parts into a translated question flow that avoids confusion, provides examples, and warns of risk.

They are based in Providence, Rhode Island.

**Four Growers**University of Pittsburgh | 2018 | <https://fourgrowers.co>

Four Growers was founded to provide healthy, affordable, local produce by reducing the production costs of greenhouse growers through robotics technology. They are positioning themselves to be the automated solutions provider for greenhouse crop management.

The team is working closely with various greenhouse growers to develop a tomato harvesting robot. Their technology relies on two layers of protection, patents filed protecting the physical design of the robot and a proprietary algorithm that controls the robot's decision making. Four Grower's solution is not only capable of harvesting the tomatoes, but also of performing a quality check and of packaging.

The August 2018 graduates of Y Combinator were awarded prize money from Atlantic Coast Conference as part of the ACC InVenture Prize and from the University of Pittsburgh Innovation Institute as part of the Randall Family Big Idea Competition. Four Growers is based in Pittsburgh, Pennsylvania.

Fractal**Fractal**Harvard University | 2020 | www.fractalcomputers.com

Fractal leverages their high-fidelity streaming tech to run and stream apps from the nearest AWS server. Using an app on Fractal is as easy as using the app normally. They handle all the complexity so that your experience is seamless. All that is required to run Fractal is an 8 Mbps Internet connection.

The company, based in New York City, joined MassChallenge in September 2020. Fractal placed third at the 2020 RBPC.

**Fruitdee**Formerly AGcerez | Chulalongkorn University, Thailand | 2013 | www.fruitdee.com

Fruitdee is a provider of processed Thai fruit; frozen, dehydrated, and organic herbs. In addition to supplying one of the largest food conglomerates in Thailand, Fruitdee is rapidly expanding into the China market.

**Gecko Robotics**Carnegie Mellon University | 2016 | www.geckorobotics.com

Gecko Robotics performs robotic inspections for energy and cogeneration plants across the United States. They build and operate robots to perform inspections on industrial equipment, specifically coal, biomass, natural gas and recovery boilers as well as storage tanks and piping.

Gecko's robots eliminate dangerous working conditions by removing humans from confined and inaccessible places. Inspections are completed in a fraction of the time and cost compared with traditional methods. Inspected areas are evaluated in real-time with best practice inspection methods such as ultrasound, magnetic induction and visual, enabling plant managers to quickly know where and how to make targeted repairs.

In 2021, the company signed for a 70,000 square foot space in their hometown of Pittsburgh. They also have two offices in Texas. Gecko Robotics placed third at the 2016 RBPC.

**GestVision**Yale University | 2014 | www.gestvision.com

GestVision is a biotechnology company that is committed to securing safer pregnancies by fearlessly challenging the status quo for women's health. They promise to deliver confidence

to healthcare providers to make sound clinical decisions. Their aim is to address the unmet medical needs in women's health by bringing forth premium products based upon robust scientific discoveries.

A grant from the U.S. Agency for International Development will make GestVision's diagnostic available for testing in low resource communities such as Bangladesh and Mexico City. GestVision was the recipient of a Patents for Humanity Award from the U.S. Patent and Trademark Office. The Connecticut Technology Council the 2017 Women of Innovation® Entrepreneurial Innovation and Leadership Award was given to founder Wendy Davis. GestVision is based in Groton, Connecticut.



Hazel Technologies

Northwestern University | 2016 | www.hazeltechnologies.com

Hazel Technologies is a USDA-supported company based in Chicago, Illinois. The company helps growers, packers, and shippers of produce extend the shelf-life of their fruits and vegetables, which reduces produce rejections, can extend seasonal availability, and expand geographic markets. Hazel Technologies develops products in the form of packaging inserts that slow ripening of produce due to ethylene and use a blend of essential oils to reduce to inhibit microbial growth.

In 2020, Hazel Technologies expanded their international footprint and entered into a number of new partnerships with domestic growers.



Heart I/O

University of Pittsburgh | 2019

HEART I/O is a digital diagnostic startup that uses artificial intelligence to help physicians identify heart abnormalities.

In November 2020, the FDA granted 'breakthrough designation' to HEARTio's flagship product. The Breakthrough Devices Program accelerates up development, assessment, and review of new medical devices, while preserving the statutory standards for premarket approval, 510(k) clearance, and De Novo marketing authorization.

The company is based in Pittsburgh, Pennsylvania.



Helix Steel

Formerly Polytorx | Georgia Institute of Technology | 2003 | www.helixsteel.com

Polytorx LLC manufactures and sells Helix, a steel fiber additive used in varying dosages to reinforce construction concrete. It replaces rebar in concrete. Subjected to more than 10,000 tests both in laboratories and in the field, Helix has been proven to meet or exceed rebar performance in every application of concrete.

Originally designed at the University of Michigan for applications in earthquake and blast resistance, Helix is now used in a broad spectrum of projects ranging from commercial to infrastructure, residential to heavy industrial, shotcrete to precast.

In February 2016, Helix Steel was chosen for New York City's Metro Transit Authority's East Side Access Project. Helix is reinforcing the tunnels that connect Long Island to Manhattan's Grand Central Station. It is the biggest transportation project in the nation and the first expansion of the Long Island Railroad in more than 100 years. The company has garnered major entrepreneurial awards, and it was featured on ABC's Extreme Makeover: Home Edition. Helix was used to rebuild homes in Joplin, Missouri destroyed by the 2011 tornado. In the past year, the company has filed new patents and received ISO 9001-2015 accreditation.

Helix is manufactured in the United States but sold worldwide from offices in the United States, Canada, Mexico, Brazil, Australia and Singapore. Located in Ann Arbor, Michigan, the company operates two manufacturing facilities, using its own proprietary, high-speed machines for manufacturing.

Helix Steel was acquired by their leading investor, Pensmore Reinforcement Technologies in January 2017. RBPC alumnus and founder Luke Pinkerton will remain CTO of Helix Steel.

**Husk Power Systems****University of Virginia | 2008 | www.huskpowersystems.com**

Husk is one of the world's leading distributed utilities. Founded in 2008, the company provides reliable power to rural communities and businesses, entirely from renewable energy sources, 24 hours a day, 7 days a week, at affordable prices. It offers customers a flexible "pay-as-you-go" energy service, using a mobile-enabled smart metering system. It provides low-cost energy that matches the growing needs of their customers. Its grid-compatible solution can be rolled out quickly and cost-effectively to support national electrification plans.

Husk Power had a record business year in 2020 despite the Covid-19 pandemic with exceptional growth in revenue (90%), business customers (300%). The company expects to become the first profitable minigrig company in 2021.

**Hyliion****Carnegie Mellon University | 2015 | www.hyliion.com**

Headquartered in Austin, Texas, Hyliion designs, develops and sells electrified powertrain solutions that are designed to be installed on most major Class 8 commercial vehicles. Leveraging advanced software algorithms and data analytics capabilities, Hyliion offers fleets an easy, efficient system to decrease fuel and operating expenses while seamlessly integrating with their existing fleet operations.

They placed third in the 2015 Rice Business Plan Competition.

In October 2020, Hyliion merged with Tortoise Acquisition Corp., a publicly traded special purpose acquisition company. The combined entity was named Hyliion Holdings Corp. and is traded on the New York Stock Exchange (NYSE) under the ticker symbol "HYLN." Hyliion will use the proceeds from the merger to develop and commercialize its Hybrid and Hypertruck ERX electrified powertrain solutions.

**Iconic Air****West Virginia University | 2020 | www.iconicair.io**

Over the past five years, the leak detection and repair market has seen a rapid advancement in hardware innovation. Current emissions software leaders are antiquated and lack the capability of processing data from these new systems now being implemented. Iconic Air is a SaaS platform that automates the data analytics process for these cutting-edge devices and provides insight on asset risk and performance.

In 2020, Iconic Air joined the Austin Technology Incubator and received an Air Force Phase II Small Business Innovation Research (SBIR) contract. They are headquartered in Morgantown, West Virginia.

**Illusense****Formerly AME (Agile Monitoring Equipment) | The University of British Columbia, Canada | 2013 | www.illusense.com**

Illusense is developing leak detection and prevention technology to mitigate the environmental damage and heavy costs caused by oil pipeline leaks.

Their ultra-high resolution, laser-based, internal oil and gas pipeline inspection technology enhances integrity management by proactively prioritizing pipeline maintenance. The resulting 3D data sets allow pipeline operators to capitalize on unprecedented intelligence, enhance the understanding of the condition of their assets and deliver on their zero-leak goals.

Illusense recently raised a seed round. Additional funding was secured from Sustainable Development Technologies Canada (SDTC). The company is headquartered in Richmond, British Columbia.



ImagineOptix

The University of North Carolina at Chapel Hill | 2007 | www.imagineoptix.com

ImagineOptix creates innovative solutions for optical and opto-electronics challenges in displays, telecommunications, imaging, optical storage and spectroscopy. In collaboration with organizations across a wide range of industries, ImagineOptix applies proprietary technologies to control and capitalize on the properties of light in unexpected ways, resulting in dramatic improvements to optical efficiency and performance. Its patented thin-film wavefront and spectrum control technologies have been successfully applied to imaging systems, telecom switches and liquid crystal displays. They have enabled the world's smallest, most battery-efficient projectors.

Since signing its first major development contract in 2012, the company has grown rapidly and now counts many FORTUNE 500 businesses among its customers. With their impressive array of almost 60 patents and pending patent applications, ImagineOptix is one of North Carolina State University's Fast 15 startups.

Founded in 2004, ImagineOptix is headquartered in Cary, North Carolina. The company placed fourth in the 2007 Rice Business Plan Competition.



Immersed Games

University of Florida | 2015 | www.immersedgames.com

Based in Gainesville, Florida, Immersed Games is harnessing the engaging power of video games to create a hands-on experiential learning platform.

Their flagship product, Tyto Online (www.tytoonline.com), is a video game for middle school students to learn science content and skills — designed for the new science standards that are being implemented across the country. The student experience includes activities like building complex ecosystems from scratch to learn ecology or working with a botanist to solve a food shortage as they learn genetics.

Immersed Games is supported by grants from the Department of Education and the National Science Foundation. Their products were purchased by educational agencies for over 4,000 students this school year.



Impel NeuroPharma

University of Washington | 2009 | www.impelneuropharma.com

Impel NeuroPharma is a privately held, Seattle-based biotechnology company devoted to creating life-changing, innovative therapies for central nervous system (CNS) diseases. Impel NeuroPharma is currently investigating INP104 (POD-DHE) for acute migraine headache, INP103 (POD-levodopa) for reversal of OFF episodes in Parkinson's disease and INP105 (POD-olanzapine) for acute agitation in schizophrenia and bipolar disorders. Impel's products

utilize its novel, nasal drug-delivery Precision Olfactory Delivery, or POD™, device technology to deliver liquid or dry powder forms of drug to the upper nasal cavity in a consistent and predictable manner.

The company is in Phase 3 of their clinical trials. They have service agreements with Camargo Pharmaceutical Services for regulatory consulting and strategic development. Impel has an existing licensing agreement with the Centre for Addiction and Mental Health.

Based in Seattle, Washington, Impel NeuroPharma is supported by top pharmaceutical companies, the U.S. Department of Defense, Washington's Life Sciences Discovery Fund, the National Institutes of Health, and the Wings medical device network.

**Inanovate****Babson College | 2005 | www.inanovate.com**

Inanovate was founded in Massachusetts by two Babson MBA graduates, after winning first prize at the Babson Business Plan competition. The company has since grown operations in Massachusetts, North Carolina and the United Kingdom, forming close alliances with leading commercial and academic institutions.

Inanovate has combined expertise from nano-scale physics, bioengineering, biochemistry and biotechnology to create a unique multiplexed protein screening technology called Longitudinal Assay Screening (LAS), designed to help advance the development and implementation of next generation therapeutics and clinical diagnostics.

Inanovate completed testing and demonstration of the world's first protein detection and measurement platform to integrate LAS - The Bio-ID 400. The company has been awarded government grants through the National Institute of Cancer and the United Kingdom's Technology Strategy Board and are partnering with Sanford Research.

**Incept BioSystems****University of Michigan | 2005**

Incept BioSystems developed innovative, microscale technologies to provide fertility specialists with breakthrough capabilities. Its technology improved in vitro manipulation, performance and viability of high value cells.

Like many specialized cells, human embryos typically behave much differently while in vitro than they would in the body; this performance gap can limit their developmental growth and viability. Incept's System for Microfluidic Assisted Reproductive Technology (SMART) platform was the first to deliver unique control of in vitro cell culture environments so that fertility specialists can offer patients new hope in starting a family.

In 2011, Incept BioSystems was acquired by ORIGIO, a Danish company specializing in assisted reproductive technologies. In turn, ORIGIO was purchased by CooperSurgical.

**InContext Solutions****University of Chicago | 2009 | www.incontextsolutions.com**

Chicago-based InContext Solutions offers a cutting-edge 3D and Mixed Reality (XR) software for total retail optimization and shopper engagement.

Founded in 2009, InContext provides a unique, in-depth perspective on what consumers see on the shelf, how this impacts their purchase behavior, and why. Their virtual solutions are powered by ShopperMX™, an enterprise simulation, collaboration, and decision-support platform for retail merchandising. InContext takes a holistic approach to brand and retail challenges, and provides the solutions and insights needed to make faster, smarter, more profitable business decisions.

**Infinite Cooling****Massachusetts Institute of Technology | 2018 | www.infinite-cooling.com**

Infinite Cooling drastically reduces water consumption at industrial facilities by capturing cooling tower plumes. Industrial plants are one of the largest users of water, mostly for cooling. We have an MIT-developed, patent-pending technology that uses electric fields to recover and re-use water from cooling towers, cutting water and treatment costs and reducing dependence on water resources. The technology has been deployed on two industrial sites. The market is over \$20B in power generation, data centers and other industries.

Their first patent was issued in January 2021. The Somerville Massachusetts-based company was awarded a Phase II National Science Foundation SBIR grant to conduct research and development work on its patent- pending technology to reduce power plant water consumption.

Cofounders Maher Damak & Karim Khalil were recognized on the 2018 Forbes 30Under30 (Energy). Based in Somerville, Massachusetts, Infinite Cooling won the MIT \$100K Grand Prize, MassChallenge Grand Prize, Department of Energy Cleantech Grand Prize, MIT Clean Energy Prize, and the grand prize at 2018 Rice Business Plan Competition.

**Innoblative Designs****Northwestern University | 2014 | www.innoblivedesigns.com**

Innoblative is developing products to innovate and improve the way surgeons ablate surgical margins post excision. The company's first product is a radiofrequency ablation applicator to effectively coagulate and ablate soft tissue beds intra-operatively.

Innoblative has received grants from the National Science Foundation and VentureWell and was in the 2017 cohort at iCatalyst. Named one of the 15 Chicago Startups to Watch in 2015, Innoblative has been featured in FORTUNE, CNN Money and the Chicago Tribune. They are partnering with Insight Product Development to build a pre-clinical prototype to test in an animal model. The Innoblative team placed fourth at the 2014 RBPC and are based in Chicago, Illinois.

**Instapath****Tulane University | 2018 | <https://instapathbio.com>**

Instapath has developed a microscopy system that provides an exact picture of cancer biopsies within seconds, providing essential biopsy quality evaluation to ensure an accurate final diagnosis. Their system is capable of imaging biopsy samples immediately upon removal in seconds at subcellular resolution, all while preserving the tissue for future analysis.

Based in New Orleans, Louisiana, they are supported by VentureWell, the National Science Foundation, and MassChallenge.

**Intellidemia****Rensselaer Polytechnic Institute | 2009 | www.intellidemia.com**

Intellidemia celebrates a decade with its core product, Concourse. In 2007, Concourse was the first-to-market syllabus management solution. Concourse is a proven, simple-to-use platform that currently handles millions of syllabi each month.

Founded by two MBA students at Rensselaer Polytechnic Institute, Concourse solved a variety of syllabus management problems Rensselaer was encountering. Today, Concourse

has become the market-leading syllabus management solution at every type of college throughout the United States and abroad.

In a period of steady growth, Intellidemia is headquartered in New York City.



Intelligent Flying Machines

Northwestern University | 2017 | www.ifm-tech.com

Chicago-based IFM develops state of the art Computer Vision and Deep Learning systems for fully automated data capture in large warehouses. Their systems enable logistics and manufacturing companies to improve the efficiencies of their manual processes by several orders of magnitude.

IFM has a new product, OneTrack, is a Computer Vision platform that connects the physical to the digital world. They've built lift-mounted devices that rely on onboard algorithms & sensors to capture data far beyond the capabilities of conventional telematics systems and built-in LTE connectivity enables every device to connect anywhere, any time.



Iterative Scopes

Massachusetts Institute of Technology | 2018 | www.iterativescopes.com

Iterative Scopes is developing a first-in-class pipeline of AI-driven clinical decision support tools for gastroenterologists and life science researchers enabled by real world data, Iterative Scopes is organizing the world's gastrointestinal data. This data enables their team of physicians and engineers to develop a pipeline of AI tools to provide real-time actionable insights. Their first-to-market product, Skout™, is a best-in-class SaMD algorithm that detects polyps during colonoscopy and has been validated to improve procedure quality.

Currently, their focus is on pre-sales of Skout™ and signing collaborations with pharma to co-develop disease prediction models for IBD studies.



Klymit

Formerly Argon Technologies | Brigham Young University | 2008 | www.klymit.com

Klymit is a solutions company that challenges traditional approaches to the conception and fabrication of outdoor goods and apparel. Part engineers, part gear junkies, part mad scientists, and all outdoorsmen, Klymit was conceived under the idea that the experience of outdoor enthusiasts can be enhanced with new technologies and a different approach that yield quantifiably superior products. Klymit continues to expand their product line, offering sleeping pads and two series of tents.

After winning numerous awards and notice from the likes of Business Week, Popular Science and Gear Junkie, the company reportedly sold the apparel side of its business in 2013. The spinoff is Reno-based nudown. Klymit is based in Kaysville, Utah.



KnoNap

Georgetown University | 2020 | www.knonap.com

KnoNap is a cocktail napkin that is capable of testing for specific rape-drug presence. All someone has to do is place a few drops of their drink on a designated part of the napkin. If there is drug presence, there will be a color change around the saturated area. The KnoNap is patent pending.

The company is a 2021 Global Good Fund Fellow and founder Danya Sherman on the 2020 Forbes 30 Under 30 Social Entrepreneur list.

**Kosmik Energy**Texas State University | 2019 | <https://www.kosmikenergy.com>

Kosmik Energy is working on the platform product called “SunLyt”, an optical fiber daylighting system designed to vertical farming. Optical fiber daylighting systems work by capturing sunlight, concentrating that light into fiber optic cables, and distributing it deep into the interior of a structure. Our cabled three degree of freedom (3-DOF) solar tracker has a superior strength-to-weight ratio and greater optical area providing more light.

The company is piloting their SunLyt technology at container farm in Houston. In addition, they intend to have a vetted product by July 2021 for a pilot in the UAE (the world’s largest tomato vertical farm). Kosmik Energy has passed the technical review in the Wells Fargo IN2 program and awaits the Board of Directors review. The company also participated in the SPIE startup challenge.

**Lapovations**University of Arkansas | 2018 | www.lapovations.com

Lapovations is a medical device company creating a platform of innovative products that improve laparoscopy.

Lapovations was awarded a SBIR Phase II grant in September 2020 and a matching grant from the Arkansas Economic Development Commission in January 2021. The company registered with the U.S. Food & Drug Administration (FDA), launched the first generation of their flagship product AbGrab®, and recorded their first U.S. sale of the product.

The company placed second in the 2018 RBPC.

**Lark Health**Massachusetts Institute of Technology | 2010 | www.lark.com

Lark Health is the leading virtual chronic disease management and prevention platform. Lark helps people stay healthy and in control of their conditions, such as Diabetes, Prediabetes, Cardiovascular Disease, and Anxiety from the comfort of their homes.

Fast Company named Lark one of the Top 10 Most Innovative Consumer Electronics Companies. It has received broad coverage in the national press including The Wall Street Journal, The New York Times, InStyle magazine, Oprah Magazine, ABC News and CBS News. Forbes named founder Julia Hu one of 20 Female Entrepreneurs to Follow on Twitter. Lark is a venture-backed company based in Mountain View, California.

**Leuko**Massachusetts Institute of Technology | 2016 | www.leuko.io

Boston-based Leuko is developing the first non-invasive white blood cell device. White blood cell assessment is a first-line indicator for various medically relevant situations, ranging from chemotherapy management to the detection of life threatening infections worldwide. This test is currently invasive and not readily accessible - it requires patient travel, blood draws and laboratory infrastructure.

The company joined the I-Corps @ NIH Winter 2020 Program in February 2020.

**Light Line Medical**Formerly Veritas Medical | The University of Utah | 2015 | www.lightlinemedical.com

Light Line Medical, Inc. is a medical device company developing novel light-based therapeutic technologies to reduce device-associated infections. Founded in 2011, it is based out of Salt Lake City, Utah.

The Light Line™ visible light phototherapy (VLP) system uses a non-UV light to disinfect catheters and reduce bacteria, which cause urinary tract infections (CAUTI), bloodstream infections, ventilator associated pneumonia, and wound and hemodialysis/peritoneal dialysis infections. This technology is translatable to several markets. These products are pre-FDA approval, and are currently undergoing testing.

Light Line Medical won fourth place at the 2015 Rice Business Plan Competition.



Lilac Solutions

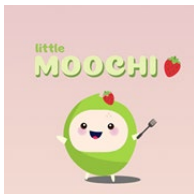
Northwestern University | 2017 | www.LilacSolutions.com

Lilac Solutions is a mining technology company based in Oakland, California. They developed a new ion exchange technology to address the challenges faced by lithium producers. Lilac's technology cuts capital and operating costs, accelerates project startup, boosts lithium recovery, and unlocks new resources. Their process is modular and can be ramped up quickly through pilot and commercial projects.

The company's unique ion exchange beads and continuous brine processing system together enable a simple and robust process yielding concentrated high-purity lithium solutions from a wide variety of resources. These solutions can be fed into conventional downstream processes for production of battery-grade lithium chemicals. Their process can access brines with low concentrations of lithium while rejecting large amounts of impurities including divalent ions. Lilac holds multiple patents related to lithium extraction and processing.

Lilac is a mining technology company and is building partnerships with brine developers and operators around the world.

In January 2021, the company was named on the 2021 Global Cleantech 100 and is funded in part by Breakthrough Energy Ventures.



LittleMoochi

Carnegie Mellon University | 2020 | www.littlemoochi.com

LittleMoochi is a mobile app that encourages children to form healthy eating habits through an AI-powered virtual pet. A child adopts a little Moochi pet and feeds it by simply snapping a photo of what the child eats. Moochi's growth and interaction with the child, in turn, motivates him/her to learn about healthy foods and develop positive eating habits.

The Pittsburgh, Pennsylvania company participated in the Ascender Incubator and TiE Pittsburgh BMR Startup Awards event.



LoanSense

Formerly Dough | University of Michigan | 2019 | www.dough.com

LoanSense is a home buyer preparation tool that helps consumers crush debt and close on a house. They plug into the lending application process and support both sides of the mortgage process. They work with networks in mortgage technology and mortgage brokerages to help close more mortgages more quickly for student loan borrowers.

LoanSense identifies student loan borrowers and reduces their student loans an average of \$600 per month and increases affordability for a home by \$100,000 in three weeks. They increase the total addressable market by saving the seven out of ten loans that are turned away due mostly to Americans' high debt burden and gets them back to the lender in three to twelve months.



LorCan Technologies

University of Waterloo | 2020 | www.lorcantech.ca

At LorCan Technologies their non-invasive solutions provide access to crucial environmental data and are uniquely designed to function within the diverse climates of remote ecosystems.

LorCan was winner of the French Chamber of Commerce Entrepreneur of the year. They are participating in initial partnership conversations with a large utility company in Canada and working on partnership agreements with IBM. They were one of the seventeen companies accepted to Earth Tech Accelerator and are working on sustainable battery technology with the University of Waterloo.



Lumedyne Technologies Formerly Omega Sensors | San Diego State University | 2007

Lumedyne Technologies specialized in next generation, micro-electrical-mechanical systems (MEMS)-based displacement sensors for a variety of markets.

The company won much recognition throughout its history, winning awards for leadership (Lumedyne's CEO was selected as a regional finalist for the Ernst & Young Entrepreneurs of the Year award), teamwork (Excellence in Technology Transfer "Success through Collaboration" with SPAWAR) and for technology. Lumedyne's technology was recognized as one of the "World's Best Technologies" at the annual World's Best Technology Showcase.

Lumedyne Technologies was acquired by Google in 2015. All details and terms of the sale are confidential.



Luso Labs Columbia University | 2017 | www.lusolabs.co

Luso Labs will help stop cervical cancer by providing automated, accurate and accessible screening worldwide. Founded by Columbia and Stanford University engineers, Luso Labs addresses critical problems encountered during visual inspection with acetic acid testing through the cerVIA system. Coupling a custom camera with a lesion detection algorithm in an Android-compatible device, the cerVIA screening system detects precancerous lesions on the cervix in a manner that integrates easily into existing clinical practices.

The company participated in Cisco Global Problem Solver Challenge. Luso Labs also won \$200,000 in in the Vodafone Wireless Innovation Project in 2018. They are based in New York City.



LymphaTech Georgia Institute of Technology | 2014 | www.lymphatechnology.com

LymphaTech is a healthcare technology company focused on innovative 3D measurement solutions to enable optimal clinical care and well-being for patients and providers. Their digital measuring platform is fueled by proprietary algorithms that measure human geometry accurately and consistently in a quick and easy to use mobile platform. LymphaTech provides value throughout the healthcare continuum by serving doctors, physical therapists, medical compression garment manufacturers, and patients.

In August 2020, the company received its European patent protecting their method for making medical compression garments.

Based in Atlanta, Georgia, the company placed sixth overall at the 2014 Rice Business Plan Competition.



Medical Informatics

Rice University | 2013 | www.medicalinformaticscorp.com

Houston-based Medical Informatics Corp. (MIC) is revolutionizing healthcare by transforming the way patients are monitored. As a software-based monitoring and analytics company, their revolutionary Sickbay™ platform archives, aggregates, and transforms otherwise not-recorded, high-resolution waveform data across disparate devices to enable real time, anywhere, anytime remote monitoring across the entire continuum of care. The same platform can then be leveraged to use machine learning and AI to deploy real-time, predictive analytics that get ahead of deterioration and risk and enable data-driven medicine and patient centered care.

In January 2019, MIC announced an agreement to deliver MIC's Sickbay platform using Dell's server and storage solutions.



Medical Magnesium

RWTH Aachen University, Germany | 2017 | www.medical-magnesium.com

Medical Magnesium develops metallic bioabsorbable implants for orthopaedic and trauma surgical therapy, based on its mm.X implant technology. The mm.X implants are mechanically stable and will be physiologically absorbed by the body after the fracture has healed. Their goal is to provide users and patients customized and highly functional solutions made of magnesium and to shape a next generation of implants to provide more therapy options with just a single surgery.

As a startup from RWTH Aachen University, they bring results from interdisciplinary research in engineering and medicine into the surgical theaters. After extensive testing, they developed the product technology mm.X, and the first products were transferred into the clinic. They are committed to publishing all data with high clinical evidence.

In 2021, Medical Magnesium was awarded the European Commission's Seal of Excellence, indicating ideas worthy of funding. They placed third in the 2017 RBPC.



Membrion

University of Washington | 2017 | www.membrion.com

Membrion has developed breakthrough Molecular Self Assembly (MSA) technology that uses readily available, non-toxic and low-cost materials to produce advanced ceramic ion exchange membranes which perform better and cost significantly less than today's ceramic and polymer options. Membranes are at the heart of solutions to enable more cost-effective solutions for clean energy, fresh water supplies and human health challenges. Membrion's affordable, high-performance membranes will help unleash a new wave of innovation and market penetration for these technologies.

In 2020, the Seattle-based company raised Series A funding to begin commercial production of their membranes in a new production facility.



MeshTek Labs

Formerly ilumi Lighting Solutions | The University of Texas at Dallas | 2011 | <https://meshtek.com>

MeshTek is building the roads that will connect the IoT world of tomorrow. Enlightening Things to Enlighten People.

They make the world's best wireless IoT infrastructure based on Bluetooth Mesh, called MeshTek. MeshTek enables other Manufacturers to make more reliable, scalable, and faster connected devices that naturally connect the world around us.

MeshTek also powers their award winning series of LED Smart lighting products help you find, set, and schedule exactly the right light for you, with the ease of screwing in a light bulb. Wake up to a scheduled Maui sunrise in the morning, improve your sleep cycle with Circadian lighting, and enjoy special occasions with colorful effects. Available at Best Buy, Target, Amazon, and ilumi.co.

MeshTek is a Mark Cuban Company as seen on ABC's Shark Tank. They are based in Dallas, Texas.



Microlution

University of Illinois at Urbana-Champaign | 2005

Microlution Inc. pioneered the development of integrated micro manufacturing solutions for precision parts. Traditional machines are too slow and too expensive to create the micro parts required for today's advanced automotive, consumer, medical and aerospace products. Microlution's micromachining products use both laser and milling technologies.

Microlution has been featured in trade publications including Micro Manufacturing Magazine, Commercial Micro Manufacturing and Engineering TV. With its partners, Microlution was awarded a grant from the U.S. Department of Energy to develop an energy efficient method for micromachining complex shapes using ultrafast laser technology. Additionally, the University of Cincinnati BioMicroSystems Labs successfully used Microlution to machine precision microfluidic channels for particle separation and electrochemical solutions. Based in Chicago, Illinois, Microlution proudly designs and builds every machine in the United States.

In May of 2016, Microlution was acquired by GF Machining Solutions. At the time of sale, Microlution was generating \$10 million in annual sales and had a workforce of 30 people. Microlution continues to be run by founders and RBPC alumni Andy Phillip and Andrew Honegger. Lincolnshire, Illinois-based GF Machining Solutions intends to use their purchase to broaden their technology portfolio and better serve clients in the medical and aerospace industries. Details of the sale remain confidential.



MicroTransponder

The University of Texas at Dallas | 2008 | www.microtransponder.com

Headquartered in Texas, MicroTransponder has developed the Paired Vagus Nerve Stimulation System (Paired VNS™ System) based on decades of neuroscience research. The Paired VNS™ System has been developed to treat two separate neurological conditions. The first is the Serenity® System for the treatment of chronic tinnitus. The second is the Vivistim® System for treatment of post-stroke upper limb mobility issues.

MicroTransponder's funding comes from venture capital groups as well grants from the U.S. Department of Defense and the National Institutes of Health. Founded in 2007, the company is based in Austin, Texas.

Midway Biome

Formerly Midway Pharmaceuticals | University of Chicago | 2005 | www.midwaypharma.com

Midway Biome is a privately held specialty company located in Philadelphia. Midway was founded by gastrointestinal scientists at the University of Chicago in the Departments of Surgery, Digestive Diseases, Infectious Disease and an experienced gastroenterologist and biotech entrepreneur. The initial observations leading to products to maintaining health through gut integrity was extended by a scientist in bone physiology at Michigan State University in collaboration with Midway.

Midway Pharmaceuticals, Inc.

Midway is focused on developing proprietary agents for enhancing health and wellness in people suffering gastrointestinal and systemic disorders. Gut bacteria are increasing thought to influence bone density, obesity, inflammatory bowel disease, irritable bowel syndrome, radiation injury to the gut during cancer therapy, neonatal necrotizing enterocolitis in premature infants, gut bacteria-derived sepsis.



MITO Material Solutions

Oklahoma State University | 2017 | www.mitomaterials.com

MITO Materials formulates hybrid polymer modifiers to enhance thermoplastic and thermoset materials to make them stronger, lighter, and more durable. Their flagship product, E-GO, utilizes graphene oxide to create an additive that has shown mechanical property increases of 135% beyond more expensive materials with only 0.1 percent weight of the polymer without interrupting the customer's current manufacturing process.

The founders were on the 2021 Forbes 30 under 30, Manufacturing/Industry list. They have received National Science Foundation Phase II funding and matching state grants. The team participated in the Techstars accelerator powered by The Heritage Group. They have applied for provisional patents and are in the midst of a pilot with the nation's largest semitruck manufacturer.

Headquartered in Indianapolis, Indiana, MITO Materials came in second at the 2017 Rice Business Plan Competition.



mobius

Formerly Grow Bioplastics | The University of Tennessee | 2016 | www.mobius.co

Lenoir City, Tennessee-based mobius is developing biodegradable and compostable materials that can replace fertilizers for improved plant and soil health. They're a mission-driven company focused on eliminating waste by leveraging industrial organic waste streams from agriculture, forestry, paper and biofuel & biorefining industries to create new materials and chemicals.

Their first product is a proprietary, biodegradable polymer made from lignin, a natural material found in all grasses and trees that is produced as waste at a rate of over 50 million tons each year by the paper and biofuel industries. With this biopolymer, they are creating a bio-based, biodegradable plastic pellets for applications in horticulture, agriculture, food service packaging, and beyond. They've recently been accepted into the NREL's IN2 program.

ModulusTech

Formerly Modulus Housing Solutions | IIT Madras | 2019 | www.modulus-tech.com



ModulusTech provides environment friendly, innovative flat-packed housing solutions, making it possible to set up houses in as little as three hours. The houses come with integrated utilities and provide superior energy efficiency and thermal comfort. ModulusTech is working on solving housing problems for displaced people through its one of a kind flat-packed house design. Helping refugees and IDPs get back to their normal lives as soon as possible. The houses can be assembled in as little as three hours, making it possible to build large, cost effective colonies within a month. They have plumbing and electricity included, while offering protection in harsh climates and more.

Based in Karachi, one of their products has been deployed to help doctors on the front line during the global #covid19 pandemic.

**Modvion**Chalmers University of Technology, Sweden | 2016 | www.modvion.com

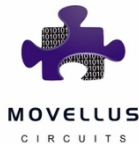
Swedish wood technology company Modvion develops demanding designs made of laminated wood, nature's carbon fibre, for large-scale applications. Wooden designs enable radical reductions in emissions by replacing emission-heavy material such as steel and concrete. Thanks to their patented module system, Modvion has been able to develop wind towers at decreased manufacturing costs and more efficient transportation for installations of tall towers.

The company's latest investment comes from leading global wind turbine manufacturer Vestas Wind Systems. Modvion is based in Göteborg, Sweden.

**MODX**Formerly Enterprise Theory | Southern Methodist University | 2009 | www.modx.com

MODX is the company that backs the opensource Content Management System and Web Application Framework. MODX Revolution is the world's fastest, most secure, flexible and scalable OpenSource CMS. Their cloud platform, MODX Cloud, is the ultimate hosting for modern PHP applications, especially MODX. They've released 80 versions and support 16 languages.

Founded in 2004, the company bootstrapped its way into profitability. Based in Dallas, their operations are supported by employees and contractors in the United States (Dallas, Portland, Taos), Canada (Nova Scotia, British Columbia) and the United Kingdom.

**Movellus Circuits**University of Michigan | 2014 | <https://www.movellus.com>

Movellus provides customer-optimized intelligent clock network solutions for SoCs. The company's Maestro platform enables system architects to achieve quantum leaps in energy efficiency, accelerating the move to carbon-neutral data centers, crypto mining farms, and factory automation. Movellus products enable ultra-low voltage operation for edge AI and IOT devices and reduce radiation risk in satellites.

Founded in 2014, Movellus is headquartered in San Jose, California. In February 2021, Syntiant Corp. announced that it was adopting Movellus' Maestro platform for its Syntiant® NDP120™ Neural Decision Processor™.

**NABACO**Texas State University | 2019 | www.nabacoinc.com

Nabaco is developing a proprietary coating technology to extend produce shelf life (NatuWarp®) With low production costs and easy application methods, Natuwrap is a potentially transformative solution for some of the most pressing matters relating to food shortages. Natuwrap triples the shelf life of the fruits and vegetables that they have tested. This product is also environmentally friendly and can be applied with either spraying or dipping methods which eliminates packaging waste.

Headquartered in San Marcos, Texas, Nabaco has received endorsements from H.E.B. Grocery and raised a seed round. The company has secured a registered U.S. Patent. They've met FDA requirements and earned Organic OMRI certification They are also now working with plantain farmers in Ghana, Africa and with a bottle company in Italy.

**Nano Precision Medical**University of California, San Francisco | 2009 | <http://www.nanoprecisionmedical.com>

Nano Precision Medical is developing a very small subdermal implant for long-term delivery of medicine to improve the compliance of chronic diseases. The rice-grain sized device is designed for easy implantation under the skin.

Their all-titanium capsule provides long-term, constant-rate delivery of therapeutic molecules using a proprietary titania, nanoporous membrane technology called NanoPortal. Multiple drug candidates can be delivered using NanoPortal. Exenatide was selected as the first drug candidate because of the unmet medical needs in Type 2 diabetes mellitus, and there is room for improvement with currently available treatments. The combination of device/drug will improve outcomes by ensuring compliance, with the potential to lower overall costs of care.

Nano Precision Medical's first application is a six-month implant to treat Type 2 Diabetes. In 2017, they were awarded two significant patents covering the company's nanoporous membrane technology. The company was founded in 2009 and has funding from experienced angel investors and a large pharmaceutical company. The company was featured in the UCSF Magazine, the Berkeley BioEngineering Graduate Newsletter, and the San Francisco Business Times.

After spending its early years within the QB3 incubator network, Nano Precision Medical is now based in Emeryville, California.



NanoGraf

Formerly Sinode Systems | Northwestern University | 2013 | www.nanograf.com

Founded in 2012, NanoGraf Corporation (formerly SiNode Systems) is an advanced materials company developing silicon-graphene materials for the next generation of lithium-ion batteries. NanoGraf materials enable increased battery energy and power density, all while being produced via a low-cost, solution-chemistry-based manufacturing process. NanoGraf seeks to change the landscape for lithium-ion batteries so they can meet the demands of a wide range of industries, from consumer electronics to electric vehicles.

Department of Defense recently awarded NanoGraf a SBIR grant to develop silicon anode-based lithium-ion portable batteries to replace the graphite anode lithium-ion batteries currently used by the military. The goal is to develop batteries with a 50-100 percent increase in runtime.

NanoGraf was named a Rising Star finalist for the @1871Chicago 2020 Momentum Awards. Co-founder Cary Hayner was named as one of Forbes' 2016 30 Under 30 in Energy. His co-founder and company CEO, Samir Mayekar was listed as one of Midwest Energy News' 40 under 40. The company won first place in both the 2013 Rice Business Plan Competition and the 2013 U.S. Department of Energy Business Plan Competition.



Nanopath

Dartmouth College | 2020 | www.nanopathdx.com

Nanopath has developed a platform for rapid, point-of-care biomarker purification and characterization from a patient sample. Their technology was originally developed at Dartmouth as part of their PhDs and harnesses advances in bioengineering and nanotechnology to reduce noise and improve signal in diagnostic systems. This allows for an integrated system that takes a complex patient sample, isolates key biomarkers, and analyses them without the need for lengthy clinical workflows. They believe that this new diagnostic paradigm has applications to a range of disease indications including bloodstream infections, cancer liquid biopsy, urinary tract infections, respiratory infections, and wound infections.

The company recently closed their seed round of funding and are beginning to participate in the NSF I-Corps Customer Discovery Program. Headquartered in West Lebanon, New Hampshire, Nanopath placed second at the RBPC in 2020.

**Neopenda**Columbia University | 2016 | www.neopenda.com

Neopenda is a global health social enterprise innovating medical devices to improve newborn health outcomes in low-resource settings.

Their first product is a wearable, vital signs monitor that continuously measures four crucial vital signs, and alerts nurses of a newborn in need of immediate attention. Neopenda re-engineered clinically validated technologies into a simple, multiparameter sensor array that measures heart rate, respiratory rate, blood oxygen saturation and temperature. The low-power sensors use rechargeable batteries and wirelessly transmit data to a central monitor, which alerts nurses when a newborn is in distress. The team will use the funds from a recent grant from the Efficiency for Access Research and Development Fund Foundation to scale their wireless monitor.

Neopenda has been featured in several articles in Forbes, The Washington Post, Fast Company, and Global Citizen, Cofounders Sona Shah and Teresa Cauvel were named to Inc.'s 2017 list of 30 Under 30. The company is based in Chicago, Illinois.

**Neurable**University of Michigan | 2016 | www.neurable.com

Neurable is developing software based on breakthrough brain-computer interface (BCI) research and novel insights in neuroscience. Its patent-pending technology interprets intention based on brain activity, providing users with reliable real-time control of software and software-controlled devices using only their minds. As a platform for human-computer interaction, Neurable is targeting virtual and augmented reality, licensing its software development kit (SDK) to content developers and headset manufacturers to enable completely new and immersive experiences.

Boston-based Neurable is partnering with Trimble to advance brain-computer interface technology solutions for the transportation and architecture, engineering and construction industries.

Neurable placed second at 2016 Rice Business Plan Competition.

**Nikola Labs**The Ohio State University | 2015 | www.nikola.tech

Nikola Labs, Inc. is a leader in sensor-based reliability solutions for manufacturers. Their rapidly deployable, full-service, remote monitoring solution, Vero, monitors the health of critical manufacturing equipment through a network of wireless vibration and temperature sensors while machine learning and certified vibration experts analyze the data and create prescriptive and predictive maintenance alerts so machines can be repaired before failure.

A spinout of the Ohio State University, Nikola Labs was founded in 2014 as part of the Ilove Startup Nursery. The company has secured Fortune 500 clients and was named one of Ohio's top 50 startups to watch. They are supported by The Ohio State University, ANSYS, and Texas Instruments. The company is headquartered in Westerville, Ohio.

**Niricson Software**University of Victoria | 2019 | www.niricson.com

Niricson helps civil engineers to inspect civil structures using Robotics and Computer Vision. The Vancouver-based company is partnering and has received investment from one of the largest European engineering consulting companies.

In 2020, they joined the B.C. Fast Pilot Program funded by National Research Council Canada/Conseil national de recherches Canada and Innovate BC. Niricson Software is headquartered in Vancouver.

**Noleus Technologies**Rice University | 2018 | www.noleustechnologies.com

Noleus Technologies is a Houston-based medical device company focused on developing and commercializing innovative technologies based on a platform to reduce swelling and to improve outcomes post-surgery. Our first product aims to establish a new standard of care for post-operative ileus through their differentiated and proprietary technology to reliably accelerate the return of bowel function after abdominal surgery.

The company is finalizing their IP, has raised a pre-seed round, has a working prototype, which has proven safe in large animal studies.

**NOMA AI**University of Pittsburgh | 2020 | <http://noma.ai>

NOMA AI is developing a new automated and improved patient monitoring and alerting solution for real-time assessment and stratification of risk of maternal hemorrhage. The NOMA AI Platform is designed to facilitate rapid-development and deployment of real-time predictive models at the bedside. They are based in Pittsburgh, Pennsylvania.

**Novira Therapeutics**

Formerly Molecmo Nanobiotechnologies | Harvard University | 2007

Based in Doylestown, Pennsylvania, Novira Therapeutics Inc. discovered and developed first-in-class therapies for the treatment of chronic hepatitis B (CHB) infection, a global disease with a high level of unmet medical need.

Novira Therapeutics built a world-class team with a proven track record of success in drug discovery and development combined with a deep expertise in HBV virology. The research and development team employed innovative chemistry and biology technologies to discover small molecule inhibitors of the HBV Core or capsid protein as well as other drugs with novel modes of action. The company's novel therapeutic antivirals overcome the limitations of current CHB therapies when used either as mono-therapy or in combination with existing standards of care.

Novira Therapeutics was acquired by Johnson & Johnson in December 2015.

**NovoThelium**The University of Texas at San Antonio | 2017 | www.novothelium.com

NovoThelium is developing a tissue engineered nipple so that patients can regenerate a nipple made from their own cells after mastectomy that maintains shape, has natural pigmentation, and the potential for improved sensation.

The San Antonio company is one of the ten U.S. laureates for the 2018 Yei Start in France accelerator. The team was awarded a National Science Foundation Innovation Corp grant and featured on National Public Radio, PBS, Xconomy, the Rivard Report, the San Antonio Express News, and Nasdaq. The San Antonio, Texas-based team placed sixth at the 2017 RBPC.

**NuMat Technologies**Northwestern University | 2012 | www.numat-tech.com

NuMat Technologies is a U.S. technology company innovating at the intersection of high-performance computing, chemistry, and engineered systems. The company works with leading partners in the microelectronics, life-sciences, defense, industrial, and energy sectors to design, build, and deliver molecularly engineered products and systems. NuMat is a recognized pioneer in the field of metal-organic frameworks — MOFs — an emerging class of nanoporous materials.

NuMat's customers include the U.S. Department of Defense, which funded early research; Versum Materials, a specialty gas and chemical producer for computer chip manufacturers, and Germany's Linde, the world's largest industrial gas company. In February 2021, Lux Research named NuMat Technologies a key disrupter in the chemicals industry.

Co-founder Chris Wilmer was named on the 2012 Forbes' list of 30 Under 30 in Energy. Featured in the Chicago Sun-Times, The Wall Street Journal and FORTUNE, NuMat won both the 2012 Rice Business Plan Competition and the U.S. Department of Energy's National Clean Energy Business Plan Competition. NuMat is headquartered in Skokie, Illinois.



NuMiX

Northwestern University | 2018 | www.numixmaterials.com

NuMix provides services to quantify challenges with metal contamination of industrial water streams and sorbents to treat streams to acceptable limits.

They participated in the VentureWell Stage 1 and Stage 2 E-Team program, as well as the ASPIRE investment readiness workshop. NuMix completed the NSF I-Corps program in November 2020 and continue with customer interviews. The company has two provisional patents and is based in Chicago, Illinois.



NVBOTS

Massachusetts Institute of Technology | 2014

Spun out of MIT by a team of four MIT engineers, New Valance Robotics (NVBOTS) provided enterprise and industrial 3D printing solutions that delivered high throughput production of parts in metals, composites, ceramics, and polymers for functional applications. The NVPro, with patented auto part ejection technology, was the only 3D printer Built to Share™. It offered the first automated part ejection in the industry and was paired with NVCloud software that allows users to print parts anytime, from any device – while providing administrators with full control of print queues and workflows typical in a shared-use scenario. The NVPro was uniquely suited for continuous 24-7 operation in multi-user environments and production 3D printing environments.

In January 2017, NVBOTS spun out a metal printing company, Digital Alloys. Digital Alloys raised a Series A in their first couple months of operation and is headquartered in Burlington, Massachusetts. NVBOTS was one of Fast Company's Top 10 Most Innovative Companies in Education for 2016. Co-founder, Chris Haid, was named to Forbes' 2015 list of 30 Under 30 in Manufacturing and Industry.

Cincinnati Incorporated acquired NVBOTS in November 2017. Based in Harrison, Ohio, Cincinnati Inc. manufactures laser cutting systems, powdered metal presses, and additive manufacturing machines.



Ocean Access

Norwegian University of Science and Technology | 2020

Ocean Access is a Norwegian startup addressing the increasing need for remote ocean monitoring across different industries.

They are developing a fully submersible ocean data buoy that can move up and down the water column. This enables the buoy to be submerged and placed subsea, where it is protected from vessels and damaging waves and wind on the ocean surface. The solution will significantly reduce the cost and provide increased reliability for accessing our oceans remotely.

In 2021, Ocean Access was accepted to Techstars' accelerator program.



Odin Technologies

Northwestern University | 2019 | www.odinhealthtech.com

Odin Technologies is a smart medical device company based out of Chicago, IL. With the intent to stop patients from unnecessarily getting recommended for emergency fasciotomies, Odin Technologies is developing a non-invasive diagnostic tool to monitor compartment pressure and tissue perfusion in trauma patients.

Currently, they are in pre-clinical trials. They were semifinalists in the 2020 ASU Innovastion Open.



OmniLife

Formerly HealthTech Solutions | The University of Iowa | 2017 | www.omnilife.ai

OmniLife is a mobile health information technology company that provides patient-centric software as a service to the organ failure care continuum. Their products and services facilitate seamless comprehensive care delivery for organ failure patients by optimizing clinical communication among payors, providers, and patients. OmniLife data are used to fuel recommendation and prediction engines for increasing quality of care and lowering costs.

Cofounder Dalton Shaull was named to the 2018 Forbes's list of 30 Under 30 in Healthcare. The company is headquartered in Lexington, Kentucky.



OmniVis

Formerly PathVis | Purdue University | 2017 | <https://purdueiris.wixsite.com/pathvis>

OmniVis is a biotechnology company that develops rapid disease diagnostic devices for communities around the world battling infectious disease. Its technology platform provides a quick, scalable and user-friendly approach to proactive disease detection with the ability to have the power of the lab in the palm of your hand to detect the presence of cholera bacteria in water in under 30 minutes. The company was founded based on CEO Katherine Clayton's PhD research done at Purdue University.

OmniVis was awarded a National Science Foundation grant to work on rapid detection process for COVID in July 2020. A few months later, they were awarded an additional SBIR grant from the U.S. Department of Commerce. The company won first place at the Vodafone Wireless Innovation Program and was second runner up on the Cisco Global Problem Solver Challenge.



Oncolinx

Dartmouth College | 2016 | www.oncolinx.com

Oncolinx is developing the next generation of antibody-drug conjugates (ADCs)--powerful, targeted cancer therapies that are more effective and have dramatically fewer side effects than current methods of cancer treatment. These therapies can be targeted to nearly any type of cancer and are rapidly becoming the state-of-the-art in cancer treatment. Drawing on the scientific innovation of the National Cancer Institute, the world's leading biotech and life sciences companies, Oncolinx is redefining the paradigm of cancer therapy.

The company won the grand prize at the 43North competition and placed fifth at the Rice Business Plan Competition.



OpenLoop

Formerly Apollo | University of Iowa | 2020 | <https://www.openloophealth.com>

OpenLoop is a web-platform designed to help match healthcare providers with hospitals and other facilities that require extra staffing assistance.

They help make the search easy by collecting all the current job needs, centralizing the provider database, and notifying you based on your location and specialty when opportunities arise.

Their mission is to improve community health through accelerated delivery of patient services. Their matching system ensures that more time is spent practicing medicine and saving lives. OpenLoop is a Techstars portfolio company.



Opharmic Technology

Formerly Sonikure Technology | The Hong Kong University of Science and Technology | 2015 | www.opharmic.com

Opharmic Technology (former Sonikure Technology) is a privately held medical technology company developing novel ocular drug delivery technology and devices. The company was founded in 2016 based on a patented ultrasound-mediated ocular drug delivery technology from the Hong Kong University of Science and Technology. With safety and feasibility well-demonstrated in pre-clinical studies, the technology non-invasively delivers large molecules to the posterior eye segment through the sclera.

With the vision to replace invasive intravitreal injections, Opharmic is currently in preparation of two large-scale pre-clinical studies to streamline product development, and to validate additional technology applications.



OPUS 12

Formerly Obtainium | Stanford University | 2015 | www.opus-12.com

Opus 12 has developed a device that recycles CO₂ into cost-competitive chemicals and fuels. Their technology bolts onto any source of CO₂ emissions, and with only water and electricity as inputs, transforms that CO₂ into some of the world's most critical chemical products. They can reduce the carbon footprint of the world's heaviest emitters, while creating a new revenue stream from what is discarded today as a waste product.

The Opus 12 team has won the U.S. Department of Energy's Transformational Award plus a number of grants from the National Science Foundation, NASA and the U.S. Department of Energy. Nicholas Flanders was named on 2016 Forbes' list of 30 Under 30 in Energy.



Owlet

Brigham Young University | 2013 | www.owletcare.com

Owlet Baby Care is a health technology company founded by a team of parents in 2013. The company's flagship product is the Smart Sock Baby Monitor, which uses pulse oximetry technology to track a baby's heart rate and oxygen levels during sleep.

Owlet has been featured in numerous publications including The Wall Street Journal, The Washington Post and ABC News. The company, based in Lehi, Utah, was a finalist at the 2013 Rice Business Plan Competition.

In February 2021, Owlet announced their intent to merge with Sandbridge Acquisition Corporation, a publicly traded special purpose acquisition company. The merger will take Owlet public on the New York Stock Exchange with the anticipated ticker symbol of "OWLT."



OZÉ

Massachusetts Institute of Technology | 2018 | <https://www.oze.guru>

OZÉ is a platform that equips small business owners in Africa to make data-driven decisions to improve their performance, tap into networks, and access capital.

OZÉ's platform is comprised of two components. On one side is an Android app for small business owners that aggregates and analyzes transaction data to push context-specific recommendations and reports. On the other side is a portal for financial institutions that combines the app's crowdsourced data with alternative data sources to assign a credit risk score to each OZÉ user. Through the portal, banks can source and support a small-business loan portfolio.

Based in Ghana, they were finalists at the 2018 RBPC.



PathoVax

Harvard University | 2016 | www.pathovax.com

PathoVax is a private biotechnology startup focused on the development of a universal Human Papillomavirus (HPV) vaccine to provide prophylaxis against all HPV-related cancers and diseases. Their pilot vaccine, RGVax, promises to provide protection against all 15 oncogenic HPVs and many others that cause various warts.

The company was one of the ten U.S. laureates accepted into the 2018 Yei Start in France accelerator.



Pathware

Formerly MedKairos | University of Michigan | 2018 | <https://pathware.com>

Seattle-based Pathware is a startup medical device company located in the heart of Seattle focused on creating custom hardware and software solutions for digital pathology. Pathware aims to become the leader in automated on-site cancer screening and diagnostics by assessing the quality of biopsies in real-time, thereby enabling pathologists to increase their volume of work without sacrificing quality of care. Their Bioptic® System provides rapid, whole-slide imaging paired with cloud-based slide management for seamless EHR integration and frictionless hospital adoption.

Currently, they are in pre-clinical trials.



Perception Robotics

Formerly Somatis Sensor Solutions & Somatis Technologies | University of Southern California | 2011

Perception Robotics was a sensor technology company focused on biologically inspired, material handling systems. They build bio-inspired robotic hands for industrial automation. They sold a compliant, human-like gripper and a gecko inspired gripper for large, flat objects.

In 2018, Perception Robotics was acquired by On Robot. On Robot combined Perception with Hungary-based OptoForce, and Denmark-based On Robot to become OnRobot.



PhoneSoap

Brigham Young University | 2012 | www.phonesoap.com

PhoneSoap is a device built to safely sanitize and clean cell phones with powerful, ultraviolet germicidal (UV-C) light. It is a small box that simultaneously charges and sanitizes cell phones using UV-C light, an electromagnetic radiation used in hospitals and clean rooms around the world.

To date, PhoneSoap has sold over one million units and continues to grow at a rapid speed. In the past three years, another version of the smartphone sanitizer has been released as well as two more models – PhoneSoap Wireless and PhoneSoap Go, as well as screen-cleaning accessories like the PhoneSoap Shine and Microfiber Pad 3-pack. Their headquarters are in Provo, Utah.



Phylomics Diagnostics

Georgetown University | 2020 | <https://phylomics.com>

Phylomics Diagnostics is developing a blood test empowered by metabolomics and phylogenetic to detect cancer earlier. The Washington D.C.-based company is part of the NSF I-Corps Customer Discovery program.



PolarPanel

University of Houston | 2018 | <http://www.polarpanel.co>

PolarPanel is a renewable energy startup focused on bringing clean, reliable, and low-maintenance refrigeration technology to the commercial cold chain. They retrofit existing refrigerated railcars with solar technology to eliminate diesel fuel and generator costs and reduce emissions. As a low-cost and green alternative to commercial trucking, rail is the perfect match for PolarPanel's mission to promote efficiency and slash maintenance with a solar-powered solution to refrigerated transportation. Winner of NASA's Invention of the Year, the patented solar-refrigeration technology used in PolarPanel systems has successfully passed stress testing by the U.S. Military and World Health Organization.



Power2Switch

University of Chicago | 2010

Power2Switch used design, data, and technology to help consumers make responsible decisions about their energy usage and expenses. The company helped residents and businesses reduce energy costs through an online comparison of competitive rates and an automated switching process to new electricity suppliers. The service was provided free of charge. The company also delivered greater awareness of energy deregulation, created a competitive landscape for suppliers and promoted the use of renewable energy.

Power2Switch, part of the 2011 class at Excelerate Labs, was selected as one of five U.S. startups to participate in President Clinton's 2011 Clinton Global Initiative. The company was chosen as one of the Top 10 Up and Comers at the Chicago Innovation Awards. It was featured in the Chicago Tribune, Fast Company, Mashable and on the Chicago affiliates of both ABC and NBC.

In September 2013, Power2Switch was acquired by Choose Energy for an undisclosed amount. Choose Energy is an online marketplace for electricity consumers based in San Francisco, California.



PowerMundo

Colorado State University | 2009 | www.powermundo.com

PowerMundo is an innovative marketing, wholesale distribution, and micro-franchise company that connects people living in poverty to a network of sustainable resources. They manage a worldwide distribution network for appropriate technology products and support local economic development in emerging markets. As a result, they improve people's lives,

create employment opportunities, and conserve natural resources. They are currently working out of Chorrillos, Lima.



PreDxion Bio

University of Michigan | 2016 | www.predxionbio.com

PreDxion Bio is a University of Michigan spin-out company backed by Y Combinator, Paul Buchheit, and Invest Detroit, and has received funding from the National Institutes of Health. Their pipeline project received FDA Breakthrough Device designation for the development of their core localized surface plasmon resonance (LSPR) biosensor technology for use in guiding life-saving immunomodulation therapy selection in critically ill patients with acute respiratory distress syndrome.

PreDxion Bio is backed by Y Combinator, Invest Detroit, and angel investors, and has received funding from the National Institutes of Health. PreDxion Bio has been granted an FDA Breakthrough Device Designation for the development of their core localized surface plasmon resonance (LSPR) biosensor technology



PrepMe

Stanford University | 2005 | www.prepme.com

PrepMe was an education company dedicated to bringing high quality, customized learning to students. It launched the first open adaptive learning platform, Coursification. Over the years, the company garnered significant press coverage in publications such as FORTUNE, Small Business Magazine and CNN.com.

In 2011, PrepMe was divided and sold. Its adaptive learning platform for higher education was acquired by the Providence Equity-backed Ascend Learning. PrepMe's college test prep and adaptive learning platform for grades K-12 was acquired by Naviance in February 2012.



Pumani

Formerly InfantAIR | Rice University | 2010 | www.rice360.rice.edu & www.3rdstonedesign.com/work/pumanibcpap

The Pumani CPAP (continuous positive airway pressure) device treats babies with respiratory distress syndrome. Developed specifically for use in the developing world by Rice 360° and collaborators Baylor College of Medicine, Texas Children's Hospital and Queen Elizabeth Central Hospital, the Pumani alleviates infant distress for 1/15th the cost of CPAPs available in the U.S. and has tripled the survival rate of babies affected by RDS.

The Pumani CPAP (formerly the InfantAIR device presented at the 2010 RBPC) continues to combat infant distress syndrome in the developing world. The project is being commercialized by industrial design firm Hadleigh Health Technologies, a subsidiary of 3rd Stone Design. The Pumani is available for purchase by world healthcare organizations and clinicians.

Grant money ensures that every public central and district hospital in Malawi will have access to a Pumani. Funding from GSK and Save the Children is affording the technology's expansion through Zambia, Tanzania and South Africa. In November 2016, the device was presented at the World Health Organization as part of a discussion of a CPAP rollout across five nations.

In 2014, co-founder and inventor Jocelyn Brown was named in Forbes 30 Under 30 list in Science and Healthcare.



Qcue

The University of Texas at Austin | 2008 | www.qcue.com

Qcue created the world's first dynamic pricing engine for live entertainment events, forever changing the way sports and entertainment tickets are priced. Sophisticated algorithms analyze real time sales data and other external factors to generate sales and revenue forecasts based on various price recommendations. Once approved, price changes are automatically pushed to ticketing systems that process the changes at the point of sale and across all channels.

Twice named one of the 10 Most Innovative Companies in Sports and one of the 50 Most Innovative Companies in the World, Qcue has added millions of dollars in revenue annually for its clients. Their pricing and revenue management solutions are used by sports teams, performing arts organizations, venues, and promoters around the world, spanning three continents and more than a dozen of the world's premier sports leagues. Qcue has made 35 million price changes for clients. Their clients have seen a \$300 million increase in incremental revenue. Founded in 2007, Qcue is based in Austin, Texas.



Quad Technologies Northeastern University | 2013

Woburn, Massachusetts-based Quad Technologies is a privately held company that develops bioprocessing reagents for cell-based therapeutics.

Ultimately, Quad Technologies will develop its chemistry beyond research scale and enable stem cell harvesting tools for clinical applications. Stem cells hold the potential to treat life-treating diseases such as non-Hodgkin's lymphoma, Parkinson's and multiple sclerosis but current harvesting technologies destroy these stem cells in the process. Quad Technologies robust QuickGel chemistry will add value to separation technologies, from viable stem cell harvesting to biologics purification.

In January 2018, the company announced that they were partnering with Sartorius Stedim Biotech to expand production of its T-cell activation for cell and gene therapy. Their recent move into larger headquarters and laboratory space will allow them to expand their manufacturing abilities. The company received a grant from the Center for the Advancement of Science in Space.

Quad Technologies was acquired by Minneapolis-based Bio-Techne in June 2018.



Quantitative Insights University of Chicago | 2011

Quantitative Insights, Inc. was formed to realize the clinical and commercial value of QuantX,, which provides software-only, real-time analysis of breast imaging exams.

Developed in the labs and clinics of the University of Chicago to improve outcomes while significantly reducing costs, QuantX addresses critical needs of clinicians, practice administrators and patients. The company intends to provide the world's first and only breast imaging decision support system with direct correlation to known pathology. In research settings, QuantX has been shown to increase both the efficiency and accuracy of breast cancer diagnosis. The QuantX platform received de novo clearance from the FDA in 2017.

In July 2019, Quantitative Insights was acquired by Paragon Biosciences and renamed Qlarity Imaging.



Quantum Lock Technologies University of Tennessee | 2020 | <https://www.quantumlock.co>

Quantum Lock Technologies is the first company to bring quantum computing technology to secure connected facilities and equipment. Their patented hardware-software solution makes facilities more secure and connected using completely unpredictable digital keys using

quantum information. With their centralized hub, lock module, and proprietary software, they provide unparalleled security, real-time detection and ledger updates. Quantum Lock has been issued its first patent. A second patent is still under review. The team was accepted into Innovation Crossroads at the Oak Ridge National Lab. They are based in Knoxville, Tennessee.



QV Bioelectronics

University of Manchester | 2020 | <https://www.qvbio.co.uk>

QV Bioelectronics is a seed stage company developing a class III medical device. Since competing in 2020, they filed new patents and participated in Creative Destruction Lab (Oxford, health). They hope to launch a product demonstrator in the near future.



RagnaRock Geo

Norwegian University of Science and Technology (NTNU) | 2019 | www.ragnarockgeo.com

Based in Trondheim, Norway, RagnaRock Geo develops an AI software that interprets seismic data. The software enhances the understanding and accelerates the workflow of the geophysicist. Stratigraphy, horizons and faults of large datasets can be returned within minutes.



Reach Production Solutions

Formerly Hicor Technologies & OsComp Systems | Massachusetts Institute of Technology | 2010 | www.reachps.com

Reach delivers long-lasting production enhancement to multiphase wells - more, faster and longer production; quick and easy recovery; and a complete solution that keeps production flowing. Specializing in multiphase wells, they have found a solution to costly well interventions when it comes to artificial lift or fract hit fluid recovery. Reach installs on the surface – meaning it's quick, easy and even more effective than traditional artificial lift techniques.

Reach is based in Houston, Texas.



Rebellion Photonics

Rice University | 2010 | www.rebellionphotonics.com

Rebellion Photonics provides visual gas monitoring solutions that maximize safety, operational performance, emissions mitigation and compliance in the oil and gas, petrochemical and power industries.

In December 2019, they were acquired by Charlotte, North Carolina-based Honeywell. Rebellion will operate under Honeywell's Safety and Productivity Solutions division.



RefresherBoxx

RWTH Aachen University | 2020 | <https://refresherboxx.com/startseite/>

RefresherBoxx disinfects, dries and refreshes shoes, sports equipment and any unsoiled textiles (leather clothes, suits, dresses, cashmere) without water or chemicals. It uses an intelligent combination of scientific proven physical methods.

Since the emergence of COVID, the company has developed a new product line: a Healthcare version, currently being purchased by hospitals. RefresherBoxx kills SARS-CoV-2. Additionally, government tests have proved that when treated in RefresherBoxx, FFP2 face masks are reuseable up to five times without any lose of filter efficiency.

Finalists at the 2020 RBPC, RefresherBoxx is supported by grants from various German institutions.

**Relavo****Johns Hopkins University | 2020 | <https://relavomedical.com>**

Relavo is a Baltimore-based medical device company that is changing the way that kidney failure patients receive treatment. They are a female-founded team of biomedical engineers from Johns Hopkins University seeking to make home dialysis more accessible by minimizing the risk of infection with their technology, the PeritoneX.

Technical.ly recognized Relavo as one of the 20 most promising Baltimore tech startups of 2021. They were awarded a NSF SBIR Phase I grant for their proposal for A Novel Disinfection Method to Prevent Infection in Peritoneal Dialysis. The company was a finalist at the RBPC in 2020.

**Relish****Formerly RelishMBA | University of Virginia | 2015 | www.RelishCareers.com | www.relishmba.com**

Relish created the RelishCareers recruiting platform, designed to help premier global employers connect with graduate students in business and engineering. The first Relish hiring platform is RelishMBA, the marketplace for MBA hiring. Launched in the summer of 2015, RelishMBA has grown to over 80 top international graduate business schools and is currently working with 4,000 employers.

In 2018, Relish acquired TransparentCareer, a cloud-based recruiting platform that provides role-specific compensation and cultural data for students and alumni from top universities. Relish is based in Charlottesville, Virginia.

**ReMatter****Stanford University | 2020 | <https://rematter.com>**

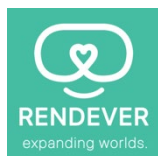
ReMatter creates end-to-end software for industrial scrap recycling facilities, including inventory management, centralized customer/supplier database, materials database, asset tracking, digital load board and an iOS/Android mobile app for drivers. They are also a proud member of the Institute of Scrap Recycling Industries (ISRI).

ReMatter is the new operating system for the \$110+ billion industrial metal recycling industry.

**Remie Health****Formerly MiVUE | University of California, Los Angeles | 2019 | www.mivuehealth.com**

Remie Health is a medical technology startup targeting the most common reason for a sick child visit – otitis media (ear infection), with 16 million episodes per year in the US alone. Remie's first product is an at-home smart otoscope that enables telemedicine and tracking of ENT infections. This patent-pending device empowers parents to monitor ear, nose and throat (ENT) symptoms, and it can be used safely in the home.

Remie's team won the Muse Innovation Fellowship and third pitch prize in UCLA Knapp Venture Competition. The company is currently based in Seattle, Washington.

**Render****Massachusetts Institute of Technology | 2017 | www.render.com**

Render is overcoming social isolation through the power of virtual reality and shared experiences. From senior living communities to hospitals, their platform is being used to reduce depression and loneliness by fostering personal connections amongst populations where life has become limited. Participants in group sessions can check off bucket list items

together, revisit meaningful places and share stories, stay engaged with family members, and more.

Rendever is being used by high-profile senior living operators including Revera, Benchmark, and SRG, healthcare systems such as UHealth and Cleveland Clinic, has research funded by the National Institutes of Health and the National Intelligence Authority, and has commercial partnerships with major organizations like AARP and Verizon. They recently partnered with UHealth and the Colorado Symphony to create a memorable #VR experience for cancer patients.

Kyle Rand, one of cofounders, was named to Forbes 30 Under 30 list in 2019. Rendever has been featured in The New York Times, xconomy, CBS, and the Voice of America.



Renewology

Formerly PK Clean | Massachusetts Institute of Technology | 2011 | www.renewology.com

Renewology has developed a proprietary method for reversing the process which creates plastics, by converting plastic waste back into fuel products. This solves the problem of plastic waste entering landfills and the environment. By chemically recycling plastic back into its basic molecular structure, it is eliminated forever. Renewology's process is sustainable, resulting in low-sulfur fuel, high energy payback and zero toxic emissions

Renewology is working on an advanced recycling facility with the City of Phoenix. The equipment for the first phase of the project is complete, and the company hopes to launch the first phase in 2021.

Founder & CEO Priyanka Bakaya was named to the 2012 Forbes' list of 30 Under 30 in Energy. PK Clean has been frequently featured in publications including FORTUNE, CNN Money, Inc. and the Harvard Business Review. The company, based in Boston, Massachusetts, placed third overall at the 2011 Rice Business Plan Competition.



Resonado

University of Notre Dame | 2019 | www.resonado.com

Resonado challenges the 100-year-old industry notion that the speaker has to be round by introducing its unique speaker technology whose benefits outperform those of the conventional types. Resonado licenses the technology to major OEM/ODM manufacturers who supply to big consumer brands. Resonado was founded in 2017 by four undergraduate students at the University of Notre Dame and is now an award-winning startup placed as a top hardware company at events such as TechCrunch Disrupt, SXSW Startup of the Year, and in the world's biggest student startup competition at Rice University.

Resonado is currently working to provide businesses with their disruptive speaker driver structure named flat core speaker technology. The technology, patented globally, is more space, weight, cost, and energy efficient than the existing conical driver found in virtually all sound-emitting products today. The structure can also be formed into virtually any shape, opening new horizons for product designers across industries.

In 2019, the Resonado brand is introduced nationwide as the Official Sound Partner of Notre Dame Athletics. The company was recently featured in Forbes and placed second at the 2019 RBPC.



Resthetics

University of Houston | 2017 | <http://resthetics.com>

Resthetics is a medical device company that has developed a system and process to capture waste gases such as anesthetics from hospital operating rooms. They can then manufacture this captured waste into a safe reusable generic form to be chemically identical to what it

was before capturing. Their initial targets are fluorinated anesthetics such as Isoflurane, Sevoflurane, and Desflurane. Through a simple process of adsorption, Resthetics will serve as a cost effective solution to the \$1.5 billion worth of these fluorinated anesthetics released from U.S. hospital operating rooms annually.

Their technology has received national acclaim in the Nature Communications scientific journal, has numerous peer-reviewed publications, and has been the focus of numerous grants from the National Science Foundation and The Welch Foundation. Resthetics has an exclusive licensing agreement in place with the University of Houston.



Rhaeos

Northwestern University | 2019 | www.rhaeos.com

Rhaeos aims to improve the care of 1M Americans with hydrocephalus, a condition caused by excess cerebrospinal fluid (CSF) in the brain. Implantable shunts, the gold standard treatment, often fail and lead to multiple trips to the ER. Patients with failed shunts show nonspecific symptoms, including headaches. Imaging is used for diagnosis, but is inconclusive, expensive, and exposes patients to radiation. To address this problem, Rhaeos developed FlowSense, a noninvasive wearable that can detect CSF flow. Clinical data has been published in Science and Nature family journals. With FlowSense, the monitoring of shunt function can occur in hospitals and homes.

Finalists at the 2019 RBPC. they were one of the six winners to receive award money and acceptance in MedTech Innovator's virtual accelerator program at the 2019 Pediatric Device Innovation Symposium. Rhaeos received a Phase I NSF SBIR grant as well as a research grant from the Pediatric Hydrocephalus Foundation and was named as a "50 startups to watch in Chicago" by Built in Chicago. In early 2020, the company was accepted into the TMCx accelerator. In June 2020, the Flowsense device was designated as a Breakthrough Device by the U.S. Food and Drug Administration. It is on track for market entry in 2021.



SandBox Semiconductor

The University of Texas at Austin | 2017 | www.sandboxsemiconductor.com

SandBox Semiconductor is a minority- and woman-owned company with a culture of technical innovation. Founded in June 2016, SandBox's mission is to accelerate advanced manufacturing process development through the application of physics-based and AI / machine learning-based models. Their tool sets help process engineers working towards creating the next generation of semiconductor, petrochemical, and biopharmaceutical applications.

SandBox Semiconductor is supported by the Department of Energy, the National Science Foundation, and the National Institute of Standards and Technology. Meghali Chopra, SandBox Semiconductor's Co-founder and CEO, was recognized on the 2021 Forbes '30 Under 30' 2019 list in the Science. In October 2020, SandBox Semiconductor was awarded a SBIR grant from the Department of Commerce's National Institute of Standards and Technology (NIST).



Sanergy

Babson College and Massachusetts Institute of Technology | 2010 | <http://saner.gy>

Sanergy has a variety of bold sanitation and waste management solutions. A solution that addresses all systemic gaps from waste containment, emptying, transport, treatment and reuse.

Their approach involves building a repertoire of low-cost, high-quality sanitation products and services for residents living in urban non-sewered areas, safely removing all of the waste generated by their customers and transporting it to their central processing plant for treatment and up-cycling into high quality agricultural inputs. To date, they have built a

network of over 2,500 Fresh Life Toilets, which serve over 100,000 urban residents with safe sanitation every single day. They also safely remove and up-cycle over 6,000 metric tons of waste every year.

Sanergy was a winner of the U.S. Agency for International Development competition for development ideas, co-funded by the Bill & Melinda Gates Foundation and the U.S. Agency for International Development. The company has received global media attention from Forbes, Voice of America, BusinessWeek, and Scientific American.



Sanguina

Formerly Lunula Health | Georgia Institute of Technology | 2018 | <https://www.sanguina.com/>

Sanguina is developing point-of-care and over-the-counter diagnostic tools, with emphasis on the self-care market. Their app, AnemoCheck Mobile, the first ever mobile app designed for instant, non-invasive hemoglobin level screening. The team is developing a home version of their product. AnemoCheck Home is a simple, color-based self-test that can determine your hemoglobin level in under two minutes. The test is easy to use, disposable, and requires less than a drop of blood.

They are headquartered outside of Atlanta, Georgia.



Saranas

Rice University | 2013 | www.saranas.com

Saranas is a privately held medical device company focusing on improving patient outcomes through early detection and monitoring of internal bleeding complications. The company's patented and FDA approved device, The Early Bird® Bleed Monitoring System for vascular access procedures enables physicians to mitigate downstream consequences by addressing bleeds immediately before they become complications, improving patient outcomes and lowering healthcare costs.

The company was named as one of the Top 4 Innovators at the International Conference for Innovations in Cardiovascular Systems. They are based in Houston, Texas.



Scan

Formerly QR Code City | Brigham Young University | 2011

Founded in 2011, Scan created web and mobile experiences and tools that enabled both enterprises and individuals to benefit from mobile transaction technologies (QR codes, NFC and more). These benefits included mobile web pages, mobile commerce, social media, lead generation and analytics.

In late 2014, Scan was acquired by SnapChat, a social media company based in Venice, California.



SeebeckCell Technologies

University of Texas at Arlington | 2020 | www.seebeckcell.com

SeebeckCell Technologies is developing & manufacturing liquid-based thermoelectric modules & power generators for space, transportation, and wearable technology applications.

Out of all generated energy, over 60% is wasted as unused heat. Current, solid-state thermoelectric technology uses expensive precious metals, is inefficient (5 - 8% average thermal efficiency), and heavy, using various metallic elements, the most common of which is three times rarer than gold.

SeebeckCell will offer an ionic liquid-based thermoelectric cell that is tailored to meet customer requirements. They will produce thermoelectric modules for various applications ranging from wearable power generators to radioisotope power systems for deep space exploration.



Seismos

The University of Texas | 2013 | www.seismos.com

Seismos is a technology company offering completion diagnostics services for the Oil and Gas industry. Seismos-FRAC™ suite offers the industry's first, non-invasive, direct measurement of fracture properties for real-time fracturing treatment evaluation. Seismos has applied its technology to thousands of stages across U.S. plays.

The company has received several awards and industry recognition for its proprietary technology. In November 2020, Seismos launched operations in China. They are headquartered in Austin, Texas.



Semprus BioSciences

Formerly SteriCoat | Massachusetts Institute of Technology | 2007

Semprus Biosciences was a venture-backed biomedical company designing new tools to prevent infection and thrombus-related complications in patients with implanted medical devices. Semprus Sustain™ Technology is a permanent, nonleaching, biomaterial modification that chemically bonds to the surface of the implant device. The technology vastly improved patient outcomes by preventing serious medical complications such as infection, blood clots, improper healing and cell overgrowth.

In June 2012, Semprus BioSciences was acquired by Teleflex Inc., a Pennsylvania-based medical device company.



SensorHound

Purdue University | 2013 | www.sensorhound.com

SensorHound™ has developed Internet of Things (IoT) specific operations monitoring software that is proactive, automated, and systematic. Their suite of software products provides continuous in situ deployment monitoring and sends immediate alerts with detailed diagnostic information when software failures or security intrusions are detected. Based on patent-pending technology developed by leading IoT researchers, SensorHound's award-winning solutions are proactive, automated, and easy to integrate — all with an unbelievably small footprint. Their breakthrough solution can significantly reduce the operational and maintenance costs of IoT deployments.

Products include SensorTracer™ for real time detection of software failures and intrusions, SensorCloud™, a cloud-based dashboard for monitoring deployments, and SensorDoctor™, a forensic tool for source code diagnostics on each individual node.

They have received awards from the National Science Foundation, Purdue Research Foundation, The Alchemist Accelerator, Foudier.org, and TiE. SensorHound has offices in West Lafayette, Indiana and Santa Clara, California.



Sensytec

University of Houston | 2016 | www.sensytec.com

Sensytec's technology allows users to monitor the exact status their cement in real-time throughout the operational lifetime of their structures. They can pinpoint the exact location of pressures, cracks, damage, contamination and corrosion in their self-sensing concrete.

Currently, there are no other technologies that detect the structural integrity of cement in real-time over the operational lifetime of concrete structures. With smart cement, it is now possible to monitor various properties of cement structures for the full lifetime of any project. By gathering and delivering data on these properties, Sensytec can ultimately prevent potentially catastrophic cement failures in any structure.



Sentigrate

Formerly Eventigrate | The Katholieke Universiteit Leuven, Belgium | 2016 | www.eventigrate.com

Sentigrate is a sensor data integrator for a variety of sectors, including agriculture, event management, health, and smart cities. They offer data processing, modelling, and accessibility.

Their current partners include GE Healthcare, Intel, Qualcomm, and AWS. The company is headquartered in Heverlee, Belgium.



SES

Formerly SolidEnergy Systems | Massachusetts Institute of Technology | 2012 | www.ses.ai

SES (SolidEnergy Systems) is the world's leading researcher, developer and manufacturer of Li-Metal technologies and products. SES can help you design, develop, build and test Li-Metal cells and modules to help you understand the potential of your future application. Of all the new battery technologies, Li-Metal not only offers 2X energy density, it has the best overall performance and is the closest to disrupting Li-ion.

In March 2021, General Motors & SES signed an agreement to develop electric vehicle batteries that are expected to cut the cost of the technology by 60%. Additionally, they plan to build a prototype production line in Woburn, Massachusetts, for a "high-capacity, pre-production battery by 2023."

Founder Qichao Hu was named to the 2012 Forbes list of 30 Under 30 in Energy. SolidEnergy placed fourth in the 2012 Rice Business Plan Competition and was a finalist in the U.S. Department of Energy's National Clean Energy Business Plan Competition. They are based in Woburn, Massachusetts.



Sightecho

The Hong Kong University of Science and Technology, China | 2018 | www.sightecho.com

SightEcho is making the world's first smart diving mask with a transparent display. Diving information like depth and non-decompression limit are displayed in diver's line of sight.



Simprint Nanotechnologies

Massachusetts Institute of Technology | 2009 | www.simprintnanotech.com

Simprint Nanotechnologies Ltd. provides software tools and simulation services to users of nanoimprint lithography (NIL). The company offers an extremely fast way of simulating the nanoscale transformation of material involved in NIL. Its software allows semiconductor, photonics and data-storage manufacturers to use nanoimprint reliably and with greatly reduced development costs. Simprint software helps users to build intuition about the physics of the nanoimprint process, making it invaluable in nanoimprint lithography research.

Simprint Nanotechnologies is based in Bristol, England.



Skylark Wireless

Rice University | 2016 | www.skylarkwireless.com

Skylark Wireless designs next-generation last-mile wireless solutions for the R&D and fixed rural broadband markets.

The company develops rural broadband solutions to connect the next billion people with high-speed internet service. Skylark's proprietary base station is able to provide high-speed, multi-user data links over tens of miles wirelessly using the Massive-MIMO technologies first developed and demonstrated at Rice University.

Recently, Skylark has filed three international patents and installed a proof-of-concept network installation on the Rice University campus for research and development. The company received a Small Business Innovation Research Phase II grant from the National Science Foundation. Skylark is based in Houston, Texas.



Smart Blox

University of Arizona Queensland University of Technology | 2018 |
<https://www.smartblox.com.au>

Smart blox is an evolving ecosystem of smart products. The first of many Smart Blox innovations, solar blox revolutionizes access to renewable energy by integrating proven technology with simple, deployable, scalable solutions designed to fulfill customized energy needs. With built-in battery and inverter, solar blox output energy through a standard power outlet, with no training required. The blox are built to handle Australia's tough conditions, rugged, stackable and pre-charged for immediate use. For additional capacity, simply connect more blox together: from single blox to micro-grid.

The company is based in Canberra, Australia,



SmarterShade

University of Notre Dame | 2011

SmarterShade was a cleantech research company developing new technology for smart glass. Smart glass is an emerging class of clean technologies that uses stable polarizing and retarding films to electronically tint a clear window with the flip of a switch. They placed fifth overall at the 2011 Rice Business Plan Competition.

SmarterShade presented their technology at the White House in June 2015, and the company was chosen as a finalist for the Chicago Innovation Awards. In January 2016, Forbes recognized co-founder Will McLeod as one of their 30 Under 30 in Manufacturing and Industry.

In July 2015, SmarterShade's key human resources and assets were acquired by VG SmartGlass. VG SmartGlass was founded in 2014 specifically to commercialize the technology from SmarterShade.



Soko

Formerly SasaAfrica | Massachusetts Institute of Technology | 2012 |
<http://shopsoko.com>

Soko is an innovation in global fashion and technology, an online store that connects online consumers to global makers and handcrafted jewelry from the developing world. With Soko, people can discover incredible design and creative ingenuity originating in communities outside of the digital economy. Soko delivers exceptional style with stunning handcrafted jewelry designs created by artisans in emerging economies, using natural and upcycled materials.

Soko was created by women for women to help "fashion a better world" through the equitable direct trade of beautiful goods between artisans in the developing world and web consumers worldwide. Working in the bottom of the pyramid communities around the

world, the founders realized that by leveraging technology and existing infrastructure in an innovative way, they could create a platform to enable any talented artisan to participate in international trade.

The Soko solution transforms the mobile phone into a tool that expands access to economic opportunity for artisans in underserved communities. This new technology revolutionizes international trade by using technology facilitation to cut out the traditional middlemen, reducing logistical costs and increasing profits for artisans.

Their jewelry is also available through their own brick and mortar stores and at major retailers such as Nordstroms and Anthropologie. It can also be purchased on their website. Co-founder Catherine Mahugu is on Forbes' 2016 list of 30 Under 30 in Social Entrepreneurship and was one of Forbes' 30 Most Promising Entrepreneurs in Africa 2015. The company partners with the United Nations Trust Fund to end violence against women. They are one of the 10 global ventures selected to participate in the inaugural Girl Effect Accelerator. Soko has offices in Nairobi, Kenya and New York City.



Soltage

Yale University | 2006 | www.soltage.com

Jersey City, New Jersey-based Soltage is a full-service renewable energy company developing, financing, installing, owning and operating solar power generation assets that provide electricity to commercial and industrial, educational, utility and municipal customers. The company has more than 50 solar projects and more than 150 MW of generation capacity under management across eight states and has deployed more than \$350 million into solar generation projects since 2006. Co-founders Vanessa Stewart and Jesse Grossman were finalists for Ernst & Young Entrepreneur of the Year, New Jersey in 2011.

Soltage was acquired by Tenaska Capital Management through an LBO in March 2015.



Speeko

University of Iowa and University of Chicago | 2019

Speeko is building an all-new way to improve public speaking skills, from seasoned Toastmasters to beginners. Officially launched in 2018, Speeko is now the number one public speaking app for tens of thousands of users around the world. The company just launched the 2.0 version of their product and is headquartered in Chicago, Illinois.



Spine Align

Johns Hopkins University | 2018 | www.spinealignsurgical.com

Spine Align is developing a breakthrough, patent-pending imaging technology that enables on-demand, 3D, full-length measurements of a patient's spine with 95% reduction in time and 80% reduction in radiation exposure compared to current technologies.



spotLESS Materials

Penn State University | 2019 | www.spotlessmaterials.com

Based in State College, Pennsylvania, spotLESS Materials makes advanced materials for water sustainability and sanitation applications. Their coatings repel liquid, sludge, bacteria, and more.

The team was part of the 2019 Summer cohort at Y Combinator and a finalist in the 2020 P&G Ventures CES Challenge. They placed third at the 2019 Rice Business Plan Competition.



SPOUTS of Water

Harvard University | 2014 | www.spoutsofwater.org

SPOUTS manufactures affordable and effective ceramic water filters to provide clean drinking water access to the East African community. SPOUTS (Sustainable Point-Of-Use Treatment and Storage) of Water seeks to economically empower local citizens, engage the surrounding communities and provide cost-effective water treatment systems, all in an effort to alleviate the plethora of issues caused by a lack of clean drinking water.

SPOUTS is currently expanding their production plant in Uganda to have the capacity to produce more than 10,000 filters per month. They have provided clean drinking water to more than 80,000 people in 200 different communities across Uganda. The company is funded in part through a grant from the U.S. Agency for International Development.

Featured on NBC News, SPOUTS of Water was runner-up for the President's Challenge Honorable Mention, for the McKinley Family Grant for Innovation and Entrepreneurial Leadership, honored with the 2016 SWITCH Africa Green-SEED Award, and participated in the Unreasonable Institute East Africa.



Sproxil

Formerly mPedigree Logistics | Dartmouth College | 2009 | www.sproxil.com

Sproxil uses mobile technology and a proprietary fraud detection platform to launch secure, data-driven consumer engagement programs globally. Sproxil's solutions are deployed by multinational manufacturers and brands across multiple industries to prevent supply chain fraud, amplify brand awareness, and optimize marketing spend. With teams of experts in Africa, Asia and America, Sproxil has executed projects across five continents and has the ability to offer services in over 100 countries worldwide.

Founder and CEO Ashifi Gogo is listed on FORTUNE's 2015 list of 40 Under 40. Sproxil received the U.S. Patent and Trademark Office' Humanity Award in Information Technology. The company ranked number one in healthcare and number seven overall in Fast Company Magazine's World's 50 Most Innovative Companies. They won the 2009 Clinton Global Initiative Outstanding Commitment Award and received regulatory endorsements in Nigeria and Kenya.



STASIS LABS

Stasis Labs

University of Southern California | 2015 | www.stasislabs.com

Stasis has built a cloud-connected vital signs monitoring system that rescues these patients. They are expanding access to a fundamental tool of modern medicine to the 11 million under-monitored beds around the world.

Stasis was a part of the first cohort of the Techstars Healthcare Accelerator, in Partnership with Cedars-Sinai. They received endorsement by the International Finance Corporation, part of the World Bank Group, to help improve and expand the reach of medical technology worldwide. Their monitors are currently live in Indian hospitals, and they continue to deploy their system in India as they prepare to expand their life-saving solution across the globe.

Headquartered in Los Angeles, California, Stasis Labs incubated in the TechStars Healthcare Accelerator at Cedars-Sinai.



Surgical Innovation Associates

Formerly SurgiNet | Northwestern University | 2016

Surgical Innovation Associates (SIA) is an early growth-stage medical device spin-out from Northwestern University with FDA 510(k) clearance, CE Mark, and >\$1M revenue run rate for its first product, DuraSorb™ - a patented absorbable surgical mesh for reconstructive and

plastic surgery. SIA was recently awarded a non-dilutive National Cancer Institute SBIR Phase II grant to complete an IDE study that will expand the current labeling.

SIA is currently in pre-clinical trials.



Swift Coat

Arizona State University | 2017 | www.swiftcoat.com

Swift Coat develops functional coatings that have unique optical, chemical, thermal, electronic, and mechanical properties. The heart of their technology is a new inline vacuum deposition method: aerosol impact-driven assembly (AIDA).

In 2020-21, the Tempe, Arizona company was awarded a grant from the Department of Energy and a SBIR Phase II grant from the National Science Foundation. Swift Coat placed fourth place at the 2017 RBPC.



Syntr

University of California, Irvine | 2018

Syntr Health Technologies® is dedicated to redefining personalized medicine. This company was born out of a collaboration between the Departments of Biomedical Engineering and Plastic Surgery at the University of California, Irvine. The team consists of passionate, problem-solving, and experienced individuals working to develop and optimize cutting-edge technology. They are committed to serving the community and bring forth an affordable, safe and effective therapeutic that will not only save limbs, but also save lives.

The multidisciplinary team with expertise in medical device design, microfluidics, 3D printing, immunology & molecular biology, medicine and plastic surgery. Syntr has a collaborative relationship with the Departments of Biomedical Engineering and Plastic Surgery at the University of California, Irvine. Their first U.S. patent was awarded in January 2020.



SYRG

Formerly Aday Technologies | Harvard University | 2018 | www.syrghq.com

SYRG is a platform for employers of hourly workers and implements a flexible workforce through automating relationships with past employees. They've recently reached a milestone of 30 paying customers and been quoted in the Boston Globe and Harvard alumni spotlight. SYRG launched, quite possibly, the largest unemployment insurance support organization with 300,000 members and 100+ volunteers.

SYRG is headquartered in Boston, Massachusetts. They placed third in the 2018 RBPC.



Takachar

Massachusetts Institute of Technology | 2013 | <http://takachar.strikingly.com>

Takachar is a for-profit company that represents a process and distribution model to produce and sell low-cost biomass-derived solid fuel in remote areas. They are focused on increasing the amount of biomass residues economically converted into useful products.

Currently, most of the biomass waste (farm/agricultural) that exists in remote areas cannot be economically converted into useful commodities. As a result, most farmers simply burn the post-harvest biomass waste in open air because there is little economic value in it. Takachar has developed a low-cost, decentralized, and patent-pending system that is able to economically convert the biomass waste on-site, cut down the transportation and processing costs and bring the fuel to those who are willing to pay.

Takachar was a 2013 MIT Clean Energy Semi-Finalist. Its co-founder, Sophi Ni, was named one of Forbes' 30 Under 30 in Energy and Industry for 2014. The company launched a new website in January 2015 and published a report on a Lagos, Nigeria waste-to-energy project.



Taxcient

Formerly vAudit Group | San Diego State University | 2004

In business for six years, Taxcient was a sales and use tax compliance software provider. The company was founded with the intent of relieving corporate tax departments of the time consuming and costly effort required to report sales and use tax across multiple jurisdictions. Designed by former state tax auditors, the software provided an alternative to the administrative burden of state and local tax compliance. The software was trusted by some of the leading companies in the world to provide accurate sales tax compliance with minimal cost.

In 2010, Taxcient merged with Avalara, the leading provider of web-based sales tax automation. The merger marked a major milestone in the companies' common quest to revolutionize the sales and use tax management industry via the application of leading-edge technology and top-flight tax knowledge and expertise.



TCPoly

Georgia Institute of Technology | 2017 | www.tcpoly.com

TCPoly is the world's first supplier of 3D printed parts made of heat conducting plastics for the electronics industry. They use their innovative materials to print heat sinks, heat exchangers, and electronics casings in unique designs optimized for weight, cost, and thermal performance. Their technology extends all the way from the filament (10x higher thermal conductivity than any competitor), to the print algorithms (3x increase in print rate), to the end parts (heat sinks that are 50% lighter). They work with customers to design parts that add value, are cheaper, and more integrated than their current components and offer prototyping as well as production 3D printing

TCPoly is supported by SBIR grants from Energy Efficiency and Renewable Energy (EERE) and from the National Science Foundation. The company is based in Atlanta, Georgia.



Tembo Education

The University of Tampa | 2016 | www.TemboEducationGroup.com

Founded in 2015, Tembo Education Group utilizes technology and infrastructure to tackle the unmet need of our times: early childhood education. They focus on children ages 0 to 6, an instrumental time that creates the building blocks of the rest of a person's life. The mission of Tembo Education Group is to deliver a global, scalable solution for two pressing problems of modern education: access and screen dependency.

They partner with NGOs, telecoms, and other companies to deliver their learning platform globally and reach markets where quality, curriculum-based early childhood learning is often financially and geographically inaccessible. In the developing world, they leverage these relationships to create incentives for learning, such as free data and airtime.

Since competing at Rice, they won first place at Babson's pitch competition and won funding from a stint in the MassChallenge Accelerator. Tembo was one of 100 companies selected to attend Stanford's Global Entrepreneurship Summit hosted by President Obama, but they were only one of five businesses invited to pitch. Tembo concentrates its efforts in sub-Saharan Africa, beginning in Nigeria.



The Eye Tribe

Formerly Senseye | University of Copenhagen | 2012

The Eye Tribe is an award-winning innovator of eye tracking technology and an OEM (original equipment manufacturer) technology partner that delivers fast, affordable solutions for integrating eye tracking into Virtual Reality/Augmented Reality smartphones, tablets, computers, automotive, TV, entertainment and gaming devices.

The Eye Tribe software enables touchless interaction and control of consumer devices, eye-based authentication and visual attention analytics. The Eye Tribe's software is unique, because it relies only on low cost components. They combine their proprietary software with OEM hardware, using only standard components that can be integrated into the next generation of consumer devices.

Based in Denmark, The Eye Tribe was founded in 2011 and received many awards for its technology innovations, including five Innovation Awards at the Consumer Electronics Show and being a finalist in Sir Richard Branson's Extreme Tech Challenge 2015.

The Eye Tribe was acquired by Oculus in December 2016. Oculus is owned by Facebook.



TheraNova

Duke University | 2003 | www.theranova.com

Located in San Francisco, California, TheraNova is an experienced medical device developer with a track record of creating innovative and practical solutions to large markets with unmet needs. In their incubator, TheraNova pursues a rapid, highly capital-efficient process incorporating all the needed elements of medical device development in a shared services model.

Their technologies include an endoscopic obesity therapy, an implantable shunt to remove chronic abdominal fluid, and a noninvasive incontinence therapy. TheraNova also supports external projects through traditional research and development. The company has successfully spun out or seed-funded several venture capital-backed companies including BAROnova, Sequana (formerly known as Novashunt), Velomedix, Channel Medsystems, Portrero Medical and EMKinetics.

All of TheraNova's technologies have a common element: each was designed based on the observation of a definitive need identified by one of the founders through clinical practice. Once the need has been defined, TheraNova works to develop proprietary technologies to fill that need. The resulting technology is either licensed or becomes the centerpiece for a viable spinout.

TheraNova is supported by grants from federal grant funding from the U.S. Department of Health and Human Services and from the National Institutes of Health.



Tri-D Dynamics

Purdue University | 2017 | www.triddynamics.com

Tri-D Dynamics designs and produces (via Cold Metal Fusion printing) smart metal pipes that sense temperature and pressure in harsh industrial environments. They are using the underlying manufacturing technology of their rocket engines to develop high-volume products for the energy industry.

Over the past year, the company created a proprietary Cold Metal Fusion process that allows for the seamless integration of electronics into metal. This enables real-time data collection in harsh environments where protecting the sensing technology is a requirement.

In September 2020, Tri-D Dynamatics was voted one of the Ten Most Promising Companies at the Rice Alliance Energy Tech Venture Forum. They were also the March 2021 cover story in The Tube and Pipe Journal. They are based in San Francisco, California.



TribotEX

Washington State University | 2015 | www.tribotex.com

Founded in Pullman, Washington by Dr. Pavlo Rudenko, Ph.D. CTO, TribotEX offers a clean alternative to currently available lubricating blends that improve mechanical output by utilizing a self-assembling, nano-structured coating to simultaneously reverse wear while enhancing lubrication. Having achieved traction through various business plan competitions and obtained funding from various institutions including the National Science Foundation, American Society of Engineering and Education TribotEX has grown to develop a working prototype that is primed for commercialization and is currently pursuing further funding in order to produce products at a volume that will allow for sustained growth and continued success among target markets. With a broad range of applications, TribotEX's thin film-forming lubricating blends offer the highest potential value to the automotive and wind power industries.



TriFusion Devices

Texas A&M University | 2016 | <https://essentium3d.com>

Trifusion fabricates custom 3D printed prosthetic and orthotic devices for the biomedical device industry, healthcare, military and commercial manufacturing industries.

They recently formed an exclusive partnership with a Silicon Valley 3D scanning company, allowing them to focus on printing and with Baylor College of Medicine, who is performing clinical trials on TriFusion's devices. TriFusion secured their first IRB approval and sold over 50 devices in the first month and a half of product sales. They expect to sell more than 3,000 devices in their first year, 2017. Rotary International has selected TriFusion to help deliver 3D printed prosthetic devices to clinics overseas. The company expects to deliver the first devices to a clinic in Tanzania before the end of 2017. They won first place at the 2016 Rice Business Plan Competition.

In October 2016, Essentium Materials acquired TriFusion. The Essentium team competed in the 2010 RBPC as Whole Tree. They are headquartered in College Station, Texas.



Tutorfly

University of California, Los Angeles | 2019 | www.tutorfly.org

The Tutorfly team provides easy access to peer tutoring by collaborating with students, teachers, parents, as well as education technology experts in the community. Their tutors are current high school and university students who continue to excel at their studies and understand the way students of this generation learn. The best way for students to improve their academic performance is with a peer who underwent the same academic experience. Tutors can simultaneously raise money for a charity of their choice while receiving volunteer hours if they select to do so in lieu of payment. Tutoring starts at just \$25 an hour.



Twine

University of Pennsylvania | 2017 | www.twinelabs.com

Based in New York City, Twine is people analytics software that helps Fortune 500 companies reduce employee turnover. Twine's employee recommendation engine algorithmically suggests current employees for new job openings. By doing so, Twine helps employees find more fulfilling roles and companies save millions by tapping into their rich pool of existing talent.

They participated in the National Science Foundation Innovation Corps program and Y Combinator.



Tympanogen

Tulane University | 2014 | www.tympanogen.com

Tympanogen is on a mission to change healthcare through simplifying existing surgical procedures. They're doing this through novel devices based upon their wound-healing gel technology. Perf-Fix is still in development and is not yet for sale.

The company is currently raising their Series A and is supported by grants from the National Institutes of Health and the Department of Defense. They are featured NASA TV documentary. Tympanogen operates out of the VA Bio+Tech Park in Richmond, Virginia.



Upright

Formerly Upright Oats | Yale University | 2020 | <https://www.uprightoats.com>

Upright is the first and only oatmilk as nutritious as dairy made with just oats and a blend of vitamins and minerals. They are headquartered in New Haven, Connecticut.



Vascugenix

University of Arkansas at Little Rock | 2019 | www.vascugenix.com

Vascugenix is a medical device company focused on developing innovative products to improve interventional cardiovascular procedures.

Their first developed product, the Speed-Torque, is a device designed to improve the process of guidewire manipulation during Percutaneous Coronary and Peripheral Artery Interventions. Its unique, patented design enables physicians to manipulate a guidewire comfortably with one hand, freeing up the surgeon's extra hand and enabling them to keep their full attention on the patient and the percutaneous guidewire rather than on the torque device. Speed-Torque will ultimately save physicians time, hospitals money, and improve patient safety.

The Little Rock, Arkansas company raised an angel round in September 2020.



VasoCorp

University of West Georgia | 2017 | www.neuropaway.com

VasoCorp is an independent supplier of quality health products. NeuropAWAY® brand products are specially formulated to provide maximum support for healthy nerves and diabetics. Their focus is on prediabetes, diabetes, neuropathy, neuropathic pain, sciatica, fibromyalgia, cognitive support and other health issues.

Headquartered in Atlanta, Georgia, Vasocorp products can be found in over 3,500 pharmacies.



VenoStent

Vanderbilt University | 2016 | www.venostent.com

VenoStent, Inc. is an early stage medical device and biomaterial platform company. The company is developing a shape memory polymer wrap to help hemodialysis patients live longer, less painful, and more prosperous lives.

The company raised a venture funding round in February 2021 and was accepted into Y Combinator. They are based in Houston, Texas.

**Veran Medical Technologies**Vanderbilt University | 2003 and 2004 | www.veranmedical.com

Veran Medical Technologies developed and commercialized an FDA-cleared, next generation electromagnetic thoracic navigation platform called the SPiN Thoracic Navigation System™.

Veran's breakthrough technology has been adopted by leading cancer centers throughout the United States. Veran provides physicians with a full line of bronchoscopic brushes, needles, forceps and steerable catheters with tiny electromagnetic sensors embedded in the tips for precise navigation. The combination of these proprietary Always-On Tip Tracked® instruments and Veran's exclusive patient respiratory gating technology enables physicians to accurately access lung nodules by accounting for nodule movement during patient breathing, a common challenge for lung specialists. Veran Medical Technologies placed third in the 2003 Rice Business Plan Competition.

In December 2020, Veran was acquired by Pennsylvania-based Olympus Corporation of the Americas (OCA)—a wholly owned subsidiary of Olympus Corporation in Tokyo, Japan. Olympus develops and commercializes innovative optical and digital solutions. This acquisition will expand the Olympus portfolio of respiratory products.

**Vibronix**Purdue University | 2016 | www.vibronixinc.com

Vibronix is devoted to developing advanced imaging and sensing technologies for disease diagnosis and treatment. Vibronix provides innovative integrated solutions for fast and precision surgery with interwoven ideas in vibrational spectroscopy, optical & acoustic imaging, augmented reality and machine learning. Vibronix aims to benefit patients worldwide by pushing the accuracy and efficiency in healthcare services.

The company's scientific and technical innovations and promising value for entire healthcare system has been recognized by multiple National Science Foundation/National Institutes of Health grants and partnerships with several top research institutes/companies. Their surgical guidance system AcuSee received FDA 510(k) clearance in October 2020.

**Vigti**Nanyang Technological University | 2020 | <https://www.vigti.com>

Vigti is the world's first proprietary wide area monitoring system for the gas distribution pipeline network which can identify, classify and localize anomalies such as leaks, bursts, water ingress. Vigti's advanced monitoring capabilities of the pipelines is achieved by integrating data from a variety of sensor data such as flow rate, pressure and vibration and delivering unified analytics to swiftly respond in case of anomalies through their developed complex AI-based algorithms.

The company is a spinoff of a project of the Singapore Energy Market Authority to detect anomalies in the gas pipeline network.

**Vita Inclinata Technologies**Mitchell Hamline School of Law | 2019 | www.vitatech.co

Vita Inclinata Technologies develops the first autonomous Load Stability System (LSS) to eliminate the chaotic motion of loads during helicopter and crane operations. The LSS then provides precise load placement through a control pendant to ensure a hands-free approach during lifting operations.

The 2021 Defense Appropriations Bill, signed on January 1 includes a \$5.5 million order to outfit UH-60 Black Hawk helicopters with Vita Inclinata's stabilization system. The company is the first startup graduate from the AFWERX Accelerator (Air Force innovation arm) to

receive congressional appropriations. To date, their Load Stability System has been tested with Two Bear Air Rescue and the US Army and soon will be tested with Erickson, Inc. Vita Inclinata also raised a significant Series B round in October 2020.

Caleb Carr and Derek Sikora were named to Forbes 30 under 30 list for Manufacturing and Industry. The Bloomfield, Colorado based company won the 2019 RBPC.



WCB Robotics

Birla Institute of Technology & Science, Pilani | 2018 | <https://wcbrobotics.com>

WCB Robotics is a robotics company which aims to provide robotic solutions to replace some of the most dangerous jobs. Their key innovations have been in the space of wall climbing robots. They have a patent pending for a new suction technology which is the most efficient and reliable non-contact fluid suction system in the world.

They are currently working on deploying their wall climbing technology for cleaning windows of skyscrapers. These robots will be able to stick to the glass facade, climb it and clean it, hence making them ideal instruments for window cleaning service provider companies.

WCB Robotics was a finalist at the 2018 RBPC.



WiPower

Massachusetts Institute of Technology | 2007

During its four years in business, WiPower Inc. was widely recognized as the technology leader in the wireless power marketplace. The company developed and commercialized the world's first wireless charging systems capable of extended range charging, insensitive to the position and orientation of receiving devices relative to a charging station. They distributed its commercial and industrial product solutions across the United States and in Japan. WiPower filed 17 U.S. patents related to wireless power technology and counted numerous FORTUNE 500 companies among its customers.

In 2010, WiPower was acquired by Qualcomm for an undisclosed amount.



WISE Systems

Harvard University | 2015 | www.wisesystems.com

Wise Systems provides an AI-driven Dispatch and Routing software that helps their customers compete successfully in an increasingly dynamic world. Using Machine Learning, Wise Systems automatically schedules, monitors, and adjusts routes in real time, ensuring the most efficient routes, and all while considering multiple variables and constraints. Wise Systems continuously learns from fleet data, helping optimize and improve fleet performance over time.

Serving numerous industries — food and beverage, business services and products, field service technicians for cable and utilities, 3PL and more — Wise Systems is proven to give management teams unparalleled visibility and control over operations, while helping drivers improve their on-time performance and account service. Wise Systems customers usually migrate from static routing systems or classic planning methods, using Wise Systems alongside their previous systems for dynamic routing, then rapidly implementing additional modules.

CEO/Co-founder Chazz Sims is in the 2021 class of @Forbes Under 30 in enterprise technology. They are a Top 10 Techstars Mobility company and are based in Cambridge, Massachusetts.

**Wunderite**Boston College | 2018 | <https://wunderite.com>

Wunderite is a Boston-based insurance technology company that provides an intuitive customer-facing platform for independent insurance agencies. The Wunderite platform makes insurance transparent, approachable, and fun by simplifying and automating the sales and underwriting process.

Wunderite is a part of top innovation groups, including BCP Technology Accelerator, BrokerTech Ventures, DCU Fintech, and Techstars, and has been featured in leading industry publications such as Carrier Management, Insurance Journal, and Agency Checklists.

In February 2021, the company announced a new partnership with Dremca to provide independent insurance agents with automated quotes, binding, and issuing proof of insurance. Wunderite is preparing to raise a seed round.

**Xip Diagnostics**Formerly Silicon BioDevices | University of California, Berkeley | 2009 | <http://xip.life>

Xip Diagnostics develops analytical solutions that advance human and animal health at the point of need. Their technology platform enables the development of single-use, pocket-sized, fully integrated blood analyzers that measure in minutes one or more biomolecules in a drop of whole blood with clinical-lab precision. They are active in three broad markets for both professional and consumer use: animal diagnostics, human diagnostics, and drug development.

The company is supported by NASA and the National Institutes of Health. They are headquartered in Berkeley, California.

**Zibrio**Formerly iShoe | Harvard University | 2009 | www.zibrio.com

Zibrio is an early stage, consumer health company. They are commercializing NASA technology originally used on astronauts upon return from space flight. The company produces the En Point, a scale that identifies deteriorating balance; the scale is for both residential and clinical use.

Zibrio has begun clinical trials. The company holds two issued patents on proprietary technology, delivering the first, all-encompassing human balance biometric. They have been featured in Xconomy, the TMC News, Houston Public Media and the Houston Chronicle. Zibrio is part of the Texas Medical Center's TMCx Accelerator's inaugural class and based in Houston, Texas.

**Zilper Trenchless**Massachusetts Institute of Technology | 2019 | www.zilpertrenchless.com

Zilper Trenchless is developing and commercializing an Assisted Dynamic Boring tool. Zilper's proprietary technology is a versatile and cost-efficient trenchless solution designed to install a wide range of metal casings diameters under most soil conditions without significant investment in downhole tools or cutting heads. Their machine uses both pneumatic and hydraulic force combined with a retractable auger to simultaneously install subsurface pipe and clear dirt.

Graduates of the Heritage Group's Techstars program, the company is currently operating in Columbia. Zilper Trenchless placed fifth at the Rice Business Plan Competition.

**Ziosk****Formerly TableTop Media | Southern Methodist University | 2006 | www.ziosk.com**

Based in Dallas, Ziosk® is the creator of the first entertainment, ordering and pay on demand tablet for table service restaurants. The new generation of Ziosk tablets feature 8-inch touchscreens with encrypted credit card readers built to accommodate the latest secure payment technology including EMV and NFC. The tablets reside on each table, enabling guests to see menu items, play games, view news and entertainment, order food and beverages and pay on demand; all of which gives guests control over their dining experience. The pay on demand platform enables other benefits like labor efficiency, increased sales, guest insights and greater guest frequency for restaurants to better run their business.

Ziosk is currently working with large casual dining chains and is observing positive results from the guests, sponsors and restaurants. With 180,000 devices on restaurant tables, the company has processed over \$22 billion transactions and served over 2.5 billion guests.