
Brandeis
BRANDEIS INNOVATION

Brandeis | BRANDEIS INNOVATION

What a rewarding year we had. FY ’21 was a year when we were all called to innovate with empathy and purpose. We disrupted old ways of doing things and created new ones. We strove to become better versions of ourselves and support each other.

It was a year of achievements, both big and small. We made progress on our goals of bringing Brandeis innovations to the world through licensing. We are also proud of the entrepreneurship opportunities we provided for all Brandesians.

Looking back on FY ’21, we can see all that we have accomplished, including:

- We were successful in receiving our first NSF I-Corps grant supplement for new digital infrastructure that supported both our pivot to remote work and also long-term digital transformation investments. Technologies we implemented included the Remo conference platform, which connected Brandesians worldwide through our Summer Speaker Series, Innovation Showcase, and HackMyPhD.
- We secured a near-record 13 licensing deals for technologies created by Brandeis researchers. These licenses brought groundbreaking Brandeis research to the world, securing a path to commercialization for these inventions.
- Walt Mossberg ‘69, the legendary Wall Street Journal columnist, keynoted our annual Innovation Showcase.
- We launched our innovation podcast series with Profiles in Innovation, a series of conversations with Brandesian innovators across industries and of all generations, from current undergraduates to alumni.
- Our signature STEM PhD career exploration workshops, HackMyPhD, went national, attracting over 600 attendees from schools including Johns Hopkins, MIT, the University of Florida, and Stanford.

As always, thank you for being a part of our mission. We’re looking forward to continuing our journey with you and for you.

Rebecca Menapace
Associate Provost for Innovation and Executive Director, Office of Technology Licensing

Brandeis University is a research leader in the natural, social, physical, and information sciences. Our unique strength is our collaborative spirit.

Brandeis is where Nobel Prize-winning biologist Michael Rosbash and Jeffrey Hall, professor emeritus of biology, cracked the genetic code of circadian rhythms, found in almost all life. It's where interdisciplinary researcher Grace Han is working to create tomorrow's high-tech materials. And where scientists at the interdisciplinary Materials Research Science and Engineering Center (MRSEC) are devising revolutionary new materials that promise to transform everything from the way we treat disease to build computers.

A History of Innovation

Intellectual Property (IP) created by Brandeis University's research programs have powered several successful startups, including:

- Syntonix, acquired by Biogen and spun off as Bioverativ™, later acquired by Sanofi, developer of two FDA-approved hemophilia drugs: Eloctate™ and Alprolix™;
- ThermaGenix, creator of PCR additives to enable better sequencing sample prep;
- RC Analytics, providing data analytics solutions for organizational performance optimization;
- Dexela, producer of Complementary Metal-Oxide-Semiconductor X-ray detection technologies, acquired by PerkinElmer;
- ArQule®, pioneer in small molecules for biomarker-defined oncology and rare disease therapeutics.

Select Brandeis Products in the Market

Partnering with Brandeis University means tapping into our deep expertise in functional foods, neuroscience, research reagents, chemistry, therapeutics, materials science, AI, and data analytics. We have a wide variety of IP and technologies available for licensing. Our diverse portfolio has a strong track record in the market, with 34 active licenses, including:

- **NoCow Energy Bars:** made with coffee flour, a nutritional that preserves the caffeine and antioxidants of coffee
- **Sanofi Eloctate™(ELOCTA® in EU) and Alprolix™:** two FDA-approved hemophilia therapeutics
- **Corazonas Heartbars:** Utilizes non-esterified plant sterols to lower cholesterol and promote cardiovascular health
- **Conagra Smart Balance®, Earth Balance®, Bestlife™:** All use a Brandeis-developed 1:1 blend of saturated and polyunsaturated fats to improve cholesterol ratios
- **Bruker FluoroType® STI:** an innovative fluorescence-based test system, can be used for the fast and reliable diagnostics of sexually transmitted diseases
- **Bruker FluoroType® SARS-CoV-2 varID Q:** a multiplex PCR test for detection and quantification of SARS-CoV-2 and simultaneous identification of four different S gene mutations of SARS-CoV-2. (link)
- **Thermagenix ThermaStop™, ThermaGo™ and ThermaStop-RT™:** Simple, Universal, easy-to-use reagents that improve product yield and specificity in PCR amplifications (link)

During 2021, Brandeis Innovation engaged stakeholders in record numbers:

793
Event Attendees

1,200
Office Hours

56
Mentors

890
Training Hours

240
Mentorship Hours

"Brandeis Innovation provides a bridge between Brandeis innovators and the global innovation community."

Rebecca Menapace

Associate Provost for Innovation and
Executive Director, Office of Technology Licensing

Brandeis Innovation programs accelerate connections among the University's researchers, inventors, entrepreneurs and industry.

We support the University's investigators with a full range of intellectual property, commercialization, and business development services through the Office of Technology Licensing and our Virtual Accelerator. Our acceleration and grant programs also foster new entrepreneurial activity among students, faculty and staff.

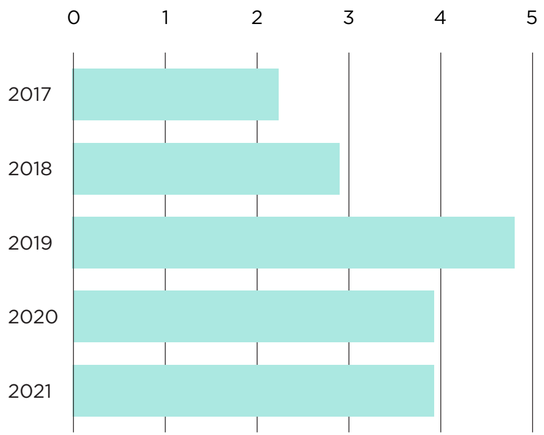
We accelerate innovation at Brandeis by:

- Funding new ventures and innovations through our Spark, Sprout, and I-Corps programs.
- Determining commercialization pathways for inventions born at Brandeis by evaluating inventions, securing IP protection, and developing pathways to commercialization.
- Developing significant revenue streams for the University through structuring licensing deals for profitability and equitable distribution of income.
- Supporting development of industry-academic collaborations, partnerships, funding options and materials sharing.
- Maintaining long-term relationships with licensees, assuring compliance with agreement terms and distributing any income generated by licenses.
- Ensuring compliance with the University's IP and other research commercialization policies.
- Mentoring and training Brandesian entrepreneurs through our Virtual Incubator.
- Creating opportunities for visibility through our events and outreach.

2021 Tech Transfer by the Numbers

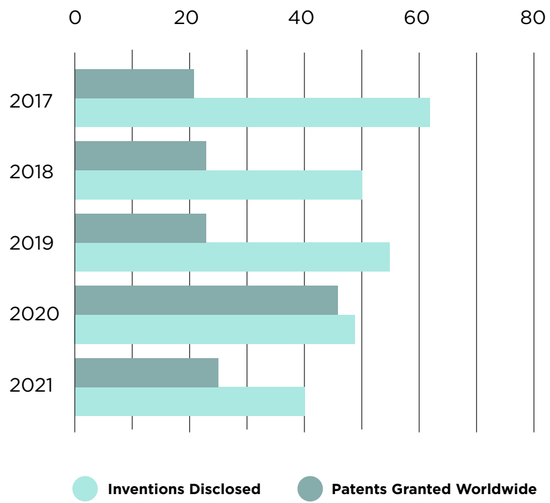
Royalties Generated

($ millions)



Inventions Disclosed and Patents Granted

(US and Non-US)



2021 Tech Transfer by the Numbers

40 Invention Disclosures

25 Patents Issued

190 Material Transfer Agreements

20 Non-Disclosure Agreements

42 Active Licenses

Profile in Innovation: Mobile Memory

Mobile Memory

Mobile Memory is a healthtech application that looks to provide a cost-effective way to detect and screen for early signs of Alzheimer's disease.

Current methods to diagnose and detect can be invasive in nature, require several different types of tests, and have limited availability. Using AI and natural language processing, Mobile Memory aims to overcome these barriers to early detection. Their app records and processes an individual's vocal data. The insights can help inform the primary care physician in making an early diagnosis, improving a patient's outlook, and reducing healthcare costs.

As a co-founder of Mobile Memory, Daniel Hariyanto has a clear passion for tackling Alzheimer's. It's a motivation shared with his other co-founders: "We were united by our interest in the Alzheimer space. We all had experience, I guess, in this field. From loved ones or from our own personal education."

Although the idea started at The Johns Hopkins medical hackathon competition, it's Brandeis Innovation that has helped them bring the concept to its current level of development. After the hackathon, Daniel and his team continued to work on the project, with Daniel submitting Mobile Memory to Brandeis Innovation's Spark program. Their entry went on to win 1st place at the annual SparkTank competition in 2021, taking the grand prize of $5,000.

Daniel's goal is the ongoing development of the app, ultimately becoming another weapon against Alzheimer's. After SparkTank, the team went on to win several prestigious student startup competitions, including the Rothberg Catalyzer Prize at the Startup Yale competition. They have also won a place in the Harvard University iLab.

The skills the team gained through the Spark program played a vital role in helping them research their market, develop their technology, and pitch potential supporters. Importantly, gaining business skills through Spark trainings gave the Mobile Memory team the confidence they needed to take their application to a broader audience.

Daniel Hariyanto
Co-founder of Mobile Memory

"Going through Spark, it was really mind opening. We found the mentors and workshops really insightful. Once we did the competition, it also gave us the confidence that this is a technology people are really interested in. Participating in Spark gave us the evidence we needed that we have a viable concept."

Annually, on Average, Brandeis Innovation Funds

Sprout

6 Teams
14 Participants
Up to
$100,000

Spark

8 Teams
25 Participants
Up to
$50,000

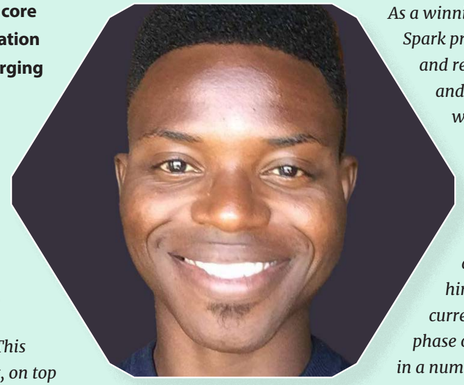
CORPS NSF Innovation Corps

8 Teams
28 Participants
Up to
$35,000

Profile in Innovation: Onye

At the heart of Onye's work lies one core mission – improving the communication within the healthcare sector of emerging markets.

The inadequacies in the communication are clearly widespread. Contact between healthcare physicians and labs for tests and data is often dysfunctional, wasting crucial time to address a patient's health inquiry. Furthermore, no infrastructure exists for patients to reliably provide any sort of feedback. This places a huge burden upon the patient, on top of the existing worries and stress they already have regarding health concerns.



Emmanuel Obasuyi
Founder of Onye

Onye is a mobile tool which aims to provide a seamless, effective way to streamline the communication process. It is the brainchild of Emmanuel Obasuyi, a budding entrepreneur and Brandeis alumni. From growing up in Nigeria to experiencing a personal loss through his Aunt, Emmanuel is no stranger to the existing problems that he is trying to address.

As a winning participant in Brandeis Innovation's Spark program, Emmanuel received the funding and resources that enabled him to work on and see his idea come into fruition. His time with the program also provided invaluable networking within the Boston healthcare tech community.

Through these experiences, Emmanuel got to really grow his skillset and develop as an entrepreneur, allowing him to take and progress Onye to where it is currently – a functioning product in the beta phase of development with testing taking place in a number of hospitals within Nigeria during Q1 2022.

"With the Spark program, I had the opportunity to speak with some incredible people within the Boston Health Tech community that gave me insight in how to plan and strategize. It really took me to the next level."

— Emmanuel Obasuyi, Onye

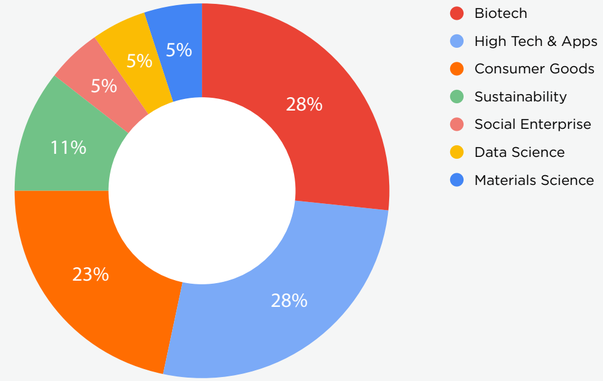
"We bring together interdisciplinary teams because it is diversity, in all its forms, that sparks the best thinking."

Rebecca Menapace

Associate Provost for Innovation and Executive Director, Office of Technology Licensing

Diverse Projects, Common Goals

In FY '21, Brandies Innovation teams represented a cross-section of the fastest-growing tech sectors today:



Faculty Spotlight: Professors Greg Petsko and Dagmar Ringe: Making ALS Breakthroughs

"If you make discovery the focus of your life, then your education doesn't matter. Nor does what your major is. You will learn things your whole life long, and you'll end up in a place that's exciting and interesting," *says Greg Petsko, currently Professor of Neurology at the Ann Romney Center for Neurologic Diseases at Harvard Medical School and Brigham and Women's Hospital.*

Dr. Petsko is also Gyula and Katica Tauber Professor, Emeritus, in biochemistry and chemistry at Brandeis.

Speaking of collaboration with Dagmar Ringe, Harold and Bernice Davis Professor in Aging and Neurodegenerative Disease at Brandeis, Petsko added "And that's what happened to both of us."

Dr. Greg Petsko
Gyula and Katica Tauber Professor, Emeritus, in Biochemistry and Chemistry

Ringe and Petsko trained in different fields. Ringe's earlier career focused on enzymology. Petsko is an expert in the three-dimensional structure of proteins. They both hold endowed chairs in neuroscience, a subject neither of them took even a single course in.

Working together at Brandeis, the two renowned researchers developed the concept of pharmacological chaperones. These are molecules that can sequester unfolded or misfolded defective proteins. They can isolate important proteins in the crowded environment inside the cell to give them a chance to refold themselves properly. These pharmacological chaperones, Petsko and Ringe thought, could serve as therapeutics for diseases caused by mutations that destabilize essential proteins, or the accumulation of defective proteins inside cells with age.

They started working on a therapeutic for ALS with the idea that they needed to find a pharmaceutical chaperone that would limit the activity of toxic proteins inside neurons. Then a postdoctoral student they describe as "wonderful," Shulin Ju, discovered in a model of ALS that what was really needed was an agent to increase the activity of a certain protein. And from that, Ringe and Petsko came to a new, fundamental insight.

The drug ALS patients needed was the protein itself. The protein was the drug.

The way to get the protein was by activating the right gene. But ALS patients didn't need gene therapy. That is, they didn't need to repair a mutated gene. They needed for the right gene to work better.

Dr. Petsko says, "Conventional gene therapy involves diseases where a gene has mutated and you need to replace that gene with one that isn't. In this case, there's absolutely nothing wrong with the gene that we're using. We're providing more of a healthy gene that can produce the protein that slows disease progression. This is the first time that's ever been done."

The researchers licensed their concept to a Brandeis startup, BRI-Alzan. The license was later acquired by New York-based MeiraGTX, a gene therapeutics company, with expectations of development into a life-saving treatment for the devastating disease.

Dagmar Ringe tempers expectations for their revolutionary approach. She is not sure that a cure is possible, she says. She adds that certainly the goal of the new therapy is to slow down and limit damage that already exists. But Ringe's evidence-based view of their research underscores the fact that fundamentally rethinking the treatment paradigm is how Ringe and Petsko made their breakthrough.

"You can't just follow a problem in terms of what you know how to do," Petsko says. "Sometimes that isn't the best way to go. By collaborating with scientists with different areas of expertise and different approaches, we were able to solve this complex problem."

Dr. Dagmar Ringe
Harold and Bernice Davis Professor in Aging and Neurodegenerative Disease

Meet the Current I-Corps Teams

I-CORPS

In 2017, Brandeis University received a grant from the National Science Foundation (NSF) to create an I-Corps™ site. The I-Corps program prepares scientists to extend their focus beyond the university laboratory, accelerating the economic and societal benefits of basic research. Brandeis is one of 10 I-Corps sites in New England. Working with select teams, we provide training, resources and funding for innovative startups developed by Brandeis students, faculty and staff.

iPSCs

Adrianna Shy, Alexandra Gershman, Rachel Jin, Bundie Kabanze; Prof. Bing Xu (PI)

iPSCs can be differentiated into different cell types, having enormous potential for cell therapy, but the risk of tumor formation from undifferentiated cells (cells that stay the same) remains a major obstacle. This project will develop a molecular method to eliminate undifferentiated iPSCs.

Epilepsy Treatment Project

Vernon Clarke, Alex Park, Shai Dinnar, Bibi Najma, Zahra Zarei; Associate Prof. Suzanne Paradis (PI)

Epilepsy is a neurological disorder that affects 3.4 million Americans with an associated direct cost of to the US of $28 billion per year. Underlying seizures are due to local imbalances between excitatory and inhibitory connections within neuronal circuits causing abnormal hyperexcitability within specific areas of the brain. This novel therapeutic intervention involves resetting such imbalances.

OptMark

Audri Bhowmick, Skye Li, Ayushi Bhanushali, Kunal Deore, Nurudeen Lamidi; Associate Prof. Olga Papaemmanouil (PI)

OptMark is a toolkit that quantifies the quality of a query optimizer, independently of any other component of the database management system. This toolkit is able to accomplish this by two ways: first, by decoupling the quality of an optimizer from the quality of its underlying execution engine; and second, by evaluating independently both the effectiveness of an optimizer and its efficacy.

OptMark's approach for evaluating the effectiveness of an optimizer involves reporting the three effectiveness metrics absolute performance factor, relative performance factor, and optimality frequency. OptMark is able to report the relative and absolute performance factor of a given profiling query by generating and executing a sample of plans compared with the optimizer chosen plans.

Water Splitting

Yavuz Ceylan; Assistant Prof. Rebecca Gieseking (PI)

Hydrogen is a zero-carbon fuel that can reduce humanity's greenhouse gas emissions for a sustainable future. However, most hydrogen is currently produced from fossil fuels because it is difficult and energy-intensive to split water into hydrogen and oxygen. State-of-the-art platinum catalysts are expensive and can be poisoned by contaminants. This project promises to harness solar energy, efficiently producing hydrogen from water at a lower cost by reducing the amount of expensive metal required.

Spunj

Xiwen Zang, Andrew Hirsh, Chieh-Ju Kuo; Dr. Christopher Doona (PI)

There is a critical need for self-decontaminating, self-deodorizing, self-disinfecting, and/or self-cleaning surfaces, particularly for textiles used in individual protective garments, especially so during the current global pandemic.

This invention uses a novel chemical method to functionalize various surfaces with a stimuli-responsive hydrogel polymer that responds to external stimuli by taking up, storing, and controllably releasing gaseous or aqueous chlorine dioxide (ClO_2) for the purposes of inactivating harmful microorganisms, neutralizing odors, and eliminating pathogenic virus.

I-CORPS benefits

Support with Research

The Office of Technology Licensing provides support in the form of mentor introductions and training sessions.

Customer Discovery Funding

Up to $3,000 is provided to each team for expenses related to customer discovery and equipment or materials.

Eligibility for Future NSF Funding

Teams that successfully complete I-Corps training become eligible to apply to the NSF I-Corps Teams Program to receive additional support—in the form of mentoring and funding (up to $50,000)—to accelerate the translation of knowledge derived from fundamental research into emerging products and services that can attract subsequent third-party funding.

Sprout

SPROUT

The SPROUT Program, funded by the Provost's Office and the Office of Technology Licensing (OTL), is designed to encourage and support entrepreneurial activity within the Brandeis community for students (graduate and undergraduate), postdocs, faculty and staff in the Division of Science. The awards are intended to help bring innovative research and entrepreneurial ambitions to life.

Meet the Current SPROUT Teams

Development of Solar Heat Collector Modules for Long-Term and Controlled Energy Storage for Building Applications

Grace Han (PI), Mihael Gerkman, Qianfeng Qiu

According to the U.S. Energy Information Administration report in 2019, the residential energy consumption is ~740 billion kWh per year on average, which is 25% of total yearly energy usage. Specifically, 38% of the energy consumption is dedicated for heating the indoor environment, using electricity, gas, and oil. This translates to the yearly expense of $73 billion on residential heating and 410 million metric tons of CO_2 emission resulting from it. There exists, therefore, a critical need to improve the efficiency of residential heating systems and to reduce the fossil fuel consumption by providing a renewable energy source for heating.

This solar thermal energy storage device provides an efficient alternative to current technologies. With energy generation only possible during daylight hours, solar energy requires energy storage systems. Using phase change materials (PCMs) that are capable of controllably storing solar energy and releasing it in the form of heat through their chemical and physical changes), this system can store solar energy reliably and provide a carbon-free hot water solution for the entire day.

Optical Control of Organic Catalysts for Industrial Applications

Grace Han (PI), Alejandra Gonzalez, Joshua Wan

Homogenous, or same-phase catalysts, are often used in the pharmaceutical industry, and these are commonly small, metal organic complexes that are completely dissolved in reaction mixtures. Homogeneous catalysts exhibit a high selectivity, being suitable for sophisticated synthesis; however, their separation and recovery are extremely difficult. They require extensive purification steps and often lead to the one-time usage of such costly catalysts. In addition, separated homogeneous catalysts need to be treated with strong acids to recover the precious metal components - a toxic and time-consuming process.

Industries looking to reduce costs as well as environmental impact would benefit from improving their catalyst usage. Not only would recoverable and recyclable homogeneous catalysts cut the expense on purchasing fresh catalysts, but it would also reduce the environmental impact that comes from metal refining and regeneration of such catalysts.

Molecular Nanotechnology Eliminating Undifferentiated Human Induced Pluripotent Stem Cells (iPSCs) for Cell Therapy

Bing Xu (PI), Shuang Liu, Adrianna Shy

Induced Pluripotent Stem Cells (iPSCs) can be formed into other cell types, having enormous potential for cell therapy, but the risk of tumor formation from undifferentiated cells (cells that stay the same) remains a major obstacle. This project is developing a molecular nanotechnology to eliminate undifferentiated iPSCs selectively by enzyme-instructed self-assembly (EISA). This can contribute to ensuring the safety of cell therapy, thus improving the treatment of human diseases.

Sema4D: Rapid Assembly of Inhibitory Synapses in the Brain as a Novel Treatment for Epilepsy

Suzanne Paradis (PI), Vernon Clarke

Epilepsy is a spectrum disorder of over 25 syndromes. It is characterized by recurrent unprovoked seizures with onset most often occurring during childhood or with advancing age and represents the 4th most common neurological disorder in the US. Over 150,000 new cases of epilepsy are diagnosed every year and approximately one-third will be diagnosed with drug resistant epilepsy (DRE) and must live with chronic intractable seizures.

Sema4D represents a new and exciting disease-modifying therapeutic strategy that offers hope to afflicted individuals and their families for the treatment of intractable seizures. Brandeis research has demonstrated that Sema4D causes new inhibitory connections between neurons on a time scale fast enough to reduce ongoing seizure activity in animal models. The proposed work plans to investigate various modalities through which Sema4D can be introduced in the brain.

From global warming to infectious disease, Brandeis innovators are creating breakthroughs that have the potential to improve the lives of millions around the world.

Rebecca Menapace

Associate Provost for Innovation and Executive Director, Office of Technology Licensing

Spark

SPARK

Brandeis' SPARK Program is designed to encourage and support entrepreneurial activity within the Brandeis community, including students (graduate and undergraduate), postdocs, faculty and staff. The awards are intended to help bring ideas and entrepreneurial ambitions to life.

Meet the Current SPARK Teams

Skillside

Raphael Flicker (Undergraduate Student, Economics), Emma Greszes (Undergraduate Student, Computer Science), Rebecca Sokol (Undergraduate Student, Technology Management & Biological Anthropology)

Many skilled freelancers who offer services that highlight teachable skills struggle to find clients, lack the ability to schedule their hours, and process payments. Furthermore, families who need reliable service providers are at a loss for where to find and vet them. Skilside aims to create a dual-sided marketplace that combines the freelance connecting capabilities of Upwork with the neighborhood-generated content of Nextdoor to function as a community classified. Their cost-effective and locally-focused platform would integrate features such as payment processing, scheduling, secure messaging, customer service, as well as safety verifications and background checks on providers.

JewBer

Ana Sazonov (MA/MBA Student), Myla Green (MA/MBA Student), Simon Luxenberg (MBA Student)

JewBer is a platform that provides opportunities for individuals to celebrate Jewish rituals in their homes, connect to Jewish tradition and community, and to support local small businesses in the Boston area. JewBer's mission is to bring Jewish experiences to xyour front door, by being a Jewish delivery platform that provides everything you need in order to fulfill Jewish tradition, customs, and to connect to the larger Jewish community.

SNAPCAP

Rebecka Sokoloff (Undergraduate Student, American Studies & Anthropology)

SNAPCAP (The Special Needs and Arthritic Practical Swim Cap) is a swim cap that is easy to place, position, maintain, and remove from the head of an individual with dexterity problems or special needs. The design consists of an elastic band epoxied to the interior of the cap. On either side are metal rings which can be used to pull the cap over the head without tearing the cap itself. SnapCap's creation is special and unique because it is easy and effective. The swim cap needs little additions and limited money in order to create it.

Tambu | Heel Comfort

Mariam Serag (MBA Student), Ruosi Liu (MSBA Student)

Tambu footwear eliminates the pain of high heels by making a shoe that is 2 in 1- flats and high heels, by using interchangeable heels technology through an inclusive, and environmentally conscious footwear brand. At Tambu, they're making fashionable, comfortable, and sustainable convertible heels accessible to all the smart, fun, authentic, tiger fighting women out there.

Mobile Memory

Daniel Hariyanto (Undergraduate Student, Computer Science & Biophysics), Dhruva Gupta (Medical Student Grad), Erica Lehotsky (Computer Science Grad), Zachary LaJoie (Undergraduate Student, Biomedical Engineering), Jessica Lee (Undergraduate Student, HSSP)

The Mobile Memory team seeks to develop the first cost-effective screening tool to detect early signs of Alzheimer's disease with an AI algorithm that utilizes natural language processing. Their product will provide a novel inexpensive screening tool to identify signs before the disease fully manifests. App data and insights will help inform the PCP's decisions and lead to an early diagnosis. Upon follow-up treatment, patients can delay or even prevent onset of Alzheimer's disease, thereby improving patient outcomes and reducing healthcare costs.

Onye

Emmanuel Obasuyi, Daniel Zhang (Graduate Student, Computer Science), Dolu Obatusin, Samuel Ugheighele, Josephine Iyore

Onye is a mobile tool for clinics and hospitals in emerging markets to aggregate patients' feedback for better healthcare service delivery. In many emerging markets, there is a breakdown in patient-doctor communication, which leads to an average 55% missed appointment rate due to health providers' inability to track key grievances that are driving patients away. This translates into negative health outcomes for patients and revenue loss for hospitals. Onye closes the patient feedback loop for health providers to improve service delivery to reduce missed appointments.

Realook

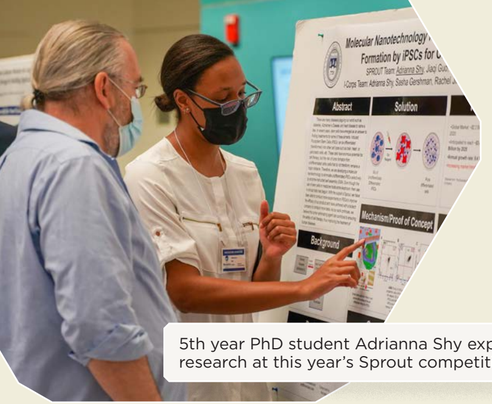
Abel Seba (Undergraduate Student Business & Computer Science), Daniel Hariyanto (Undergraduate Student, Biophysics & Computer Science), Teddy Ort (4th Year PHD Candidate MIT), Amado Antonini, Osama Arif

For years now, people and businesses have had to rely on the size standard of the industry (S,M,L,XL etc) when it comes to knowing which clothes fit them and which ones don't. Sizes vary a lot across brands and types of clothing: pants, sweaters, hoodies, shirts. In addition, when consumers are buying clothes online the only reference they have are the clothes on a 2D-image of a model that often looks nothing like the consumer. Realook aims to let people look at the clothing on their 3D self while also ensuring its fit by comparing unique body measurements obtained from a body scan, comparing measurements of the chest, back, arms to the unique clothing measurements.

Pheora Rucci

Twama Nambili (MBA Student), Mita Parikh

The current problem within the beauty industry is the lack of makeup and skin care products that cater to people of all skin tones, especially dark skin tones. Most beauty brands claim to be inclusive, but they really aren't. The majority of makeup and skin care products have talc, sulphates, parabens, and phthalates, which are harmful to the skin. Current brands like Fenty Beauty and MAC Cosmetics are still not really solving the problem. Pheora Rucci is providing a solution to this problem by creating a digitally-focused cosmetic brand whose mission is to produce premium beauty products that lack harmful chemicals, for all skin tones. In an aim to address the disparity and lack of representation in the beauty industry. At Pheora Rucci, we believe that beauty is universal and that all of its diversity should be celebrated.



5th year PhD student Adrianna Shy explains her research at this year's Sprout competition

Profile in Innovation: Adrianna Shy

Adrianna Shy's research into stem cells aims to provide a potentially viable route to reducing the risks of life changing therapeutic treatments.

A lot of existing medical options for serious illnesses are limited to the treatment and management of the disease. Numerous diseases such as Alzheimer's, many cancers, and Parkinson's can be treated, but not cured. Stem cell research aims to provide a solution that cures such diseases.

iPSCs, or induced pluripotent stem cells, are a type of stem cell which are created by taking a body cell and turning it into a stem cell. However, one drawback with this method is the risk of tumor formation as a result of the process. The production of these stem cells from our own cells creates what are called undifferentiated iPSCs – which can lead to cancers.

As a 5th year PhD student in the lab of Prof. Bing Xu, Adrianna is very much part of the efforts in the recent breakthrough that looks at eliminating the formation of such tumors.

The solution involves making use of an enzyme produced in excess by iPSCs to selectively kill undifferentiated iPSCs (the potential tumor cells), while being harmless to normal cells.

Adrianna's involvement with the project began through Brandeis Innovation's National Science Foundation I-Corps program, a rigorous 7-week training program that helps to cultivate new ideas, business models and commercial viability at Brandeis.

Following her time as an I-Corps Fellow, Adrianna and her team took part in the Sprout competition, Brandeis Innovation's funding program aimed at accelerating bench research. They won funding through the Sprout program as well, marking another key milestone. Through both programs, Adrianna got to network with businesspeople, developing an invaluable insight into building a start-up and running a business.

It is an aspect of being part of the Brandeis Innovation programs that she never realized she would enjoy so much, she notes. Further, the programs taught her how to communicate with a range of stakeholders, from fellow experts to potential investors. Cultivating those different skills has certainly enabled her to better communicate the science to those outside of her discipline.

Being part of I-Corps and Sprout has helped Adrianna add business skills to her repertoire. This has made it easier to bridge the gap between the business world and the lab.

"As a scientist who spends so much time in the lab doing work, it's sometimes kind of hard to communicate that to other people. Figuring out how to communicate that to people who aren't in Chemistry or Biology, communicating that to investors, has been a tremendous benefit of being part of Brandeis Innovation."

Cultivating a community through Innovation

VENTUREWELL idea to impact
VENTURE CAFÉ
MASSTLC
MassBio Massachusetts Biotechnology Council
autm
NewCo
MC MASSCHALLENGE
innovation nights
The Massachusetts Technology Transfer Center

Brandeis

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