Innovation courses through the halls of Johns Hopkins, and it’s this fact that helps our institution improve the lives of people around the world. This month, our newsletter highlights ways in which Johns Hopkins facilitates innovation and the potential behind a few of these discoveries and inventions.

Startups began moving into FastForward 1812, Johns Hopkins Technology Ventures’ flagship innovation hub, in January. More will take space on March 1, when the innovation hub’s 15,000 square feet of lab space comes online. Take a tour of the innovation hub and see why WindMIL Therapeutics and Gemstone Biotherapeutics chose to lease space there.

Additionally, Social Innovation Lab (SIL) Director Darius Graham explains the importance of inclusive innovation. Neha Goel, the co-founder and CEO of Intelehealth, explains the support she has received from SIL and her favorite parts of Baltimore. Goel is bringing low bandwidth telemedicine technologies to some of the more than 400 million people in underserved rural communities who lack access to basic health care.

Finally, we profile a discovery and an innovation emerging from Johns Hopkins labs that promise to improve quality of life for millions of people. Dr. Xinzhong Dong has entered into a unique collaboration with GlaxoSmithKline to find and develop a cure or more effective treatment for rosacea and contact dermatitis. LifeSprout, a FastForward 1812 tenant, is developing a soft tissue reconstruction alternative that helped a breast cancer patient who underwent reconstructive surgery. Watch the video of the powerful story.

FastForward 1812 Providing Startups Much Needed Space, Resources

Innovative solutions to wound care, technologies to relieve a strained health care system, a pill that could reverse type 2 diabetes. The path to developing and bringing these and other discoveries and innovations to market runs through the FastForward 1812 innovation hub.

Startups have leased much of the available space already, and what remains has been strategically left empty to accommodate growth among the 18 startup tenants and the arrival of new startups.

“There’s high-demand in Baltimore, especially around Johns Hopkins, for affordable space and access to lab space and equipment,” says FastForward Director Brian Stansky, noting that JHTV operates two other FastForward innovation hubs in Baltimore.

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Rosacea on the Ropes? Hopkins-GSK Collaboration Could Find Cure for Skin Conditions

Dr. Xinzhong Dong

Rosacea affects 16 million Americans, and contact dermatitis afflicts millions more. However, a unique industry-academic collaboration between a Johns Hopkins doctor and GlaxoSmithKline (GSK) could soon change that, either through the development of a cure or a more effective treatment for those skin conditions.

Dr. Xinzhong Dong, a Johns Hopkins neuroscientist, has discovered a link between a particular mast cell receptor and allergic-type reactions to foreign substances. The link makes that particular receptor an attractive target for the development of drugs that block the mast cell’s allergic-type side effects, including itchiness, redness and rashes.

“Though we haven’t shown conclusively that targeting this receptor with the right drugs can cure these conditions, that is our hypothesis,” Dong says.

With little experience in drug development, Dong says it would have been difficult to start a company that focused on finding treatments. Another option was to hand it off to a pharmaceutical company. Instead, he applied to GSK’s Discovery Fast Track Challenge as an avenue to collaborate with the pharmaceutical company and, hopefully, identify drugs that act on the target and either cure the diseases or relieve the associated symptoms.

GSK’s Discovery Fast Track Challenge, like similar collaboration opportunities offered by Bayer, Pfizer CTI, Celgene, AbbVie, Bristol-Meyers Squibb and others, is designed to combine the individual strengths of pharmaceutical companies and academia to accelerate drug discovery.

“Although principal investigators at universities have novel ideas for treating patients, can identify targets and generate early proof of concept data toward that goal, they often don’t have the resources to build on their findings to directly develop new medicines,” says Nakisha Holder, senior technology transfer associate at Johns Hopkins Technology Ventures (JHTV). “Pharmaceutical companies have the drug development infrastructure and expertise that make these collaborations effective.”

In 2014, Dong pitched his concept to a panel of GSK judges and was named one of six North American Challenge winners. This fall, after about a year of collaboration, Dong and GSK agreed to continue their working relationship as the collaboration has shown early promise for the development of an effective treatment for rosacea and contact dermatitis. This is the first such agreement, termed a Discovery Partnerships with Academia agreement (DPac), between a Hopkins doctor and GSK.

“Collaborations like this really give basic researchers like me the opportunity to achieve our dreams,” Dong says. “We want to see that our research can translate into a real drug, but it’s a difficult path. The best path is to go with a company who has a lot of experience in developing a drug.”

“It’s a win-win situation,” Dong continues. “We can move this process much faster by collaborating.”

Interest in industry-academic collaborations has grown at Hopkins due to word-of-mouth and through the efforts of JHTV’s Business Development and Corporate Partnerships team, Holder says. This year, for example, a dozen Hopkins researchers applied to be part of the Discovery Fast Track Challenge, up from four in 2014.

For additional information related to ongoing collaborations, interested researchers can contact Business Development Associate Tyler Chavez at tchavez3@jhu.edu.
Anyone an Innovator: A More Inclusive Approach to Social Innovation

This inclusive approach to social innovation recognizes that an individual studying a particular issue may devise a creative solution to a problem, but also that a person suffering from that problem who may have no formal training on the issue but notably the lived experience, may also offer a creative solution.

Inclusive innovation recognizes innovators both the individual who creates a smartphone app connecting people to rides in neighborhoods lacking reliable public transportation, as well as the individual who organizes a neighborhood carpool system to do the same.

When we use the language of innovation in a way that denotes only an ingenious breakthrough or eureka moment that happens in a lab or boardroom by people with certain credentials, we leave out many others who we may not see or who may not see themselves as innovators.

Thus the problem is twofold. First, the general language around social innovation has certain connotations of pedigree, education, and expertise. Second, those who are directly affected by an issue or are closer to the issue may not see themselves as having the credentials to offer a creative solution.

In a world where so many challenges exist and so many people are in need, we as a sector should be deliberate and thoughtful in the way we identify and celebrate social innovation and social innovators.

When we recognize something as a social innovation or someone as a social innovator, we are, deliberately or not, including some to the exclusion of others. I’ve witnessed how the language of social innovation can lead some to question whether they are in or out.

When recruiting applicants for the Social Innovation Lab at Johns Hopkins University, one of the most common questions I get is some version of, “Is my idea innovative enough?”

Ashoka’s slogan, “Everyone a changemaker” offers a model for how we can think about inclusive social innovation. Reflecting on this mission in a piece for the Innovations journal, Ashoka founder Bill Drayton wrote:

“The millennia when only a tiny elite could cause change is coming to an end. A generation hence, probably 20 to 30 percent of the world’s people, and later 50 to 70 percent, not just today’s few percent, will be changemakers and entrepreneurs. That world will be fundamentally different and a far safer, happier, more equal, and more successful place.

“Anyone an innovator” should be the unifying mission of our sector. A mission that leads us to empower the innovation potential of individuals and invest in organizations like Hero Lab and Mission: Launch that actively engage and celebrate that potential. This mission can help us create a world where anyone feels empowered to use his or her experience and background—whether rooted in academic study, life experience, or some mix of both—to offer a new vision of how we address social challenges.

Reddy and Justin Sacks, two plastic surgeons at Johns Hopkins, teamed with Hai-Quan Mao, now the associate director of the University’s Institute for NanoBioTechnology, and Russ Martin, a postdoctoral fellow in Mao’s lab, to create something better.

The team developed a nanofiber-hydrogel composite material that immediately restores three-dimensional volume, feels like your body’s own soft tissue and can promote tissue regeneration over time. Importantly, while the material retains the shape and structural integrity of native tissue, it can be administered in the office through a simple injection.

Soon after, they co-founded LifeSprout and began working with Johns Hopkins Technology Ventures (JHTV) to help bring their novel technology to patients faster. LifeSprout aims to develop a suite of products to address soft tissue needs in the aesthetic and reconstructive markets.

The startup is soon to be a tenant of the FastForward 1812 innovation hub and has taken advantage of the Cohen Translational Engineering Fund and the Louis B. Thalheimer Fund for Translational Research.

The video, link below, tells LifeSprout’s story through the eyes of Kundry Grove, a breast cancer patient who underwent reconstructive surgery.

https://youtu.be/-sQ71MxJozg
Good News: NexImmune acquired by consortium of private investors; Proscia collaborating with Samsung Comprehensive Cancer Center; 6 Hopkins startups rank among 20 most exciting in Baltimore; Baltimore a top 5 city for small business growth

Announcements:

The Open Society Institute recently named Melissa Badeker, the founder of Baltimore Teacher Supply Swap and member of the 2015-2016 Social Innovation Lab cohort, a Baltimore Community fellow. The nonprofit received $60,000 to further its mission of collecting and distributing instructional materials to teachers.

Graybug Vision, a FastForward East tenant, ranked in the top three in venture capital funding in Maryland for 2016. The year saw venture capitalists pour $300 million into Maryland companies, and more than half of that ($153 million) went to Graybug, NextCure and Vtesse.

NexImmune, a FastForward startup, announced on Valentine’s Day that it has been acquired by a consortium of private investors led by the former CEOs of Celgene and Medtronic. NexImmune is built around artificial immune nanotechnology developed in the Johns Hopkins laboratory of Dr. Mathias Oelke and Dr. Jonathan Schneck.

Proscia, a data solutions provider for digital pathology, announced a collaboration with the Samsung Comprehensive Cancer Center to develop predictive diagnostics for lung cancer metastasis. The project could lead to medical breakthroughs and may speed the adoption of digital pathology. The collaboration will utilize Proscia’s entire platform, including data management, telepathology and image analysis and tissue intelligence in conjunction with the Samsung Medical Center’s clinical data.

Atlas Wearables, a graduate of the Social Innovation Lab, introduced Shape, a first-of-its-kind digital fitness coach that tracks health, fitness and sleep and guides users through personalized workouts. The company’s machine learning system uses collected metrics to find the ideal workouts for users.

Features:

The recipient of the first Summer Undergraduate Entrepreneurship Award, Fusiform has started a second startup called FactoryFour. Founder and CEO Param Shah explains that while Fusiform developed technologies to revolutionize the fitting, ordering and manufacturing process of orthotic devices, they built software they realized “wrapped the entire manufacturing and design side together, to create an autonomous process.” Shah says the software could be used to ease custom manufacturing challenges across a number of industries. Read more from the Baltimore Business Journal.

195 Business featured the Social Innovation Lab’s (SIL) efforts to help emerging social ventures bring change to the world. The article quotes SIL Director
Darius Graham as saying, “We really see ourselves as not just helping startups or new businesses or inventions for the market, but also making sure it’s meaningful for people in Baltimore.”

Baltimore CityBizList did an in-depth Q&A with Shrenik Jain, the founder of Beacon Health, a mobile app for anonymous group therapy. Click to see part one and part two of the interview. Founded by Jain, an undergrad in the Whiting School of Engineering, and two Whiting School alumni, Beacon is part of the current SIL cohort.

This year’s Light City festival will kick off on March 31 and run through April 8. Among the speakers at the second annual event will be several with ties to JHTV, including Personal Genome Diagnostics CEO Lucas Diaz, Urban Pastoral founder JJ Reidy and Social Innovation Lab Director Darius Graham. Check out Technical.ly Baltimore’s early look at the installations, events and participating entrepreneurs.

This month, JHTV’s Joe Powers and Mary Beth Wilson presented “Johns Hopkins and OurCrowd Qure: Creating a Unique Ecosystem for Israeli Digital Health Innovation” at the annual OurCrowd Global Investor Summit in Jerusalem on February 16. The event brought together more than 3,000 investors, entrepreneurs and corporate executives from around the world.

Baltimore News:

Baltimore is a top five city for small business growth, according to the Paychex-IHS Markit Small Business Jobs Index. The index uses hiring data from 35,000 U.S. small businesses to determine its rankings, and Baltimore earned its top five rank for the strongest 12-month growth rate, 3.13 percent.

Technical.ly named its 20 most exciting Baltimore startups, and six of those have ties to The Johns Hopkins University. Fusiform (seventh), emocha Mobile Health (fourth) and Protenus (second) all ranked in the top 10. Proscia, Sisu Global Health and Tissue Analytics received honorable mention.

“Baltimore’s economy is surging,” writes Luke Broadwater of The Baltimore Sun. Over the past three years, data from state analysts show the city has seen its property wealth grow twice as fast as the rest of the Maryland. Additionally, the rate at which incomes rise in Baltimore has outpaced the rest of the state by a third.

With an average annual salary just shy of $54,000, Baltimore ranked 10th on Business Insider’s list of “best places to live if you want to make a lot of money.” The publication cited Baltimore’s growing bioscience industry as one of the reasons for its ranking.

Johns Hopkins saved six vacant East Baltimore row homes from demolition and will turn them into UCF House, a free lodging space and supportive environment for people between the ages of 15 and 39 receiving cancer treatments in Baltimore. The transformed houses on the 2100 block of E. Madison Street will feature eight family suites for patients and caregivers.

The Baltimore Sun named Milton-Montford in East Baltimore one of the city’s six most improved neighborhoods. The ranking comes after the neighborhood saw home sales grow from 11 in 2015 to 21 in 2016. Additionally, the median sales price more than tripled to $44,000.
Entrepreneur’s Corner: Intelehealth’s Neha Goel Increasing Global Access to Health Care

In a few words, what does your company do?
Improve access to comprehensive primary healthcare through telemedicine.

What are your goals, and how will you get there?
Our goal for the coming year is to improve access to health for a quarter million people by partnering with grassroots-level health organizations and setting up telemedicine programs.

Why have you chosen Baltimore as your startup’s home?
Because of the incubation support we have received at Johns Hopkins as students. Also the proximity to the global health policy makers, funders and health organizations that are based in Washington, D.C. make it a great place to grow a nonprofit focused on global health.

What opportunities make it a good place for growing a business?
It’s heartening to see the startup ecosystem growing in Baltimore. The access to some of the leading health systems in the world make it a unique place to have a health-tech startup. When you add translational programs like the Maryland Innovation Initiative, TEDCO’s Propel Baltimore Fund and accelerator programs, it makes for a nidus for innovative businesses.

In terms of startups and innovation, what’s one thing that separates Baltimore from other tech hotbeds?
I would say it’s unique in that so much innovation is happening at different universities like Johns Hopkins, the University of Maryland, Baltimore and the University of Maryland, Baltimore County. Investment in these universities is fostering strong on-campus startup ecosystem.

If you could give your past self one piece of advice for creating a startup, what would it be?
Fail fast. An entrepreneur lives in a world of failure. Get comfortable with it, learn quickly and learn when to let go of a bad idea.

What book are you currently reading?
To Pixar and Beyond by Lawrence Levy.

What innovator do you look up to? Why?
I think the most impactful innovations of our time cannot be attributed to just one person – innovation is a team sport. For example, an innovation team I look up to is that of Steve Jobs, Steve Wozniak and Jony Ive. For an idea to be successful, it really needs a team of very smart people who have bought into a common vision and who work well together. At Intelehealth we’re all about team-based innovation.

It’s after a long day of work, and you don’t feel like cooking. What is your go-to Baltimore restaurant?
Oh my gosh, there are far too many! Food is a religion. Golden West Cafe, The Helmand, Thai Arroy, Ban Thai, One World Cafe, Saigon Today and, for dessert, Marie Louise Bistro.

What’s your favorite nonwork-related thing to do in Baltimore?
Do Yoga and meditate. There are a lot of great meetups and places in Baltimore. I lead a meditation meetup every Saturday in Canton and have met the most incredible people!
“We designed FastForward 1812 with startups in mind. We want to ensure the talented innovators and entrepreneurs within Johns Hopkins and around the city have everything they need to grow their startups and bring positive change to the world.”

FastForward 1812 occupies two floors of the 1812 Ashland building that sits on the Johns Hopkins medical campus in the burgeoning Eager Park neighborhood. The top floor features an open-concept layout with offices, meeting rooms, communal workspaces and kitchen.

Downstairs, the innovation hub boasts 15,000-square-feet of lab space with private BSL2 wet labs as well as BSL2 wet lab benches in a shared space; cell culture, microscopy and cold storage rooms; shared scientific instruments and a full-time lab manager.

Having a complete lab and accessible equipment is essential for startups in the biomedical space. Laura Dickinson, director of research and development at Gemstone Biotherapeutics, says the further development of its wound healing technology requires biosafety cabinets, incubators, a chemical fume hood and other pricey pieces of lab equipment.

“[FastForward] offers startups the opportunity to focus on what they need to do as opposed to making their own lab space,” says Dickinson, noting they will move from FastForward East to FastForward 1812. “It would be extremely cost prohibitive as a startup company to get a lab like one that FastForward provides. It has all the equipment we need to progress our research forward.”

Aside from the dedicated wet lab, Dickinson says Gemstone benefits from FastForward’s core resources, support and connections. This includes facilitating meetings with the FDA and providing guidance through its startup journey.

Brian Halak, CEO of WindMIL Therapeutics, a startup developing cell therapies for oncology indications, echoed Dickinson’s sentiments. WindMIL began leasing office and lab space from FastForward East in May 2016 because of its turnkey nature.

“FastForward allowed us to get up and running quickly,” Halak says. “It has the infrastructure that allows a brand new company like ours to work on the things that will generate value without worrying about vital, but less directly value-generating activities like finding office space, ordering lab equipment and the like.”

When presented with an opportunity to move across Ashland Avenue to FastForward 1812, Halak jumped at the chance, citing the new innovation hub’s layout.

“The new space is more connected. With the offices on the first floor and the labs on the lower level, it’s just one open staircase that divides the two,” Halak says. “FastForward 1812 is a better, more integrated, thoughtfully-designed version of the benefits we had at FastForward East.”

The space, services and funding opportunities that FastForward provides aim not only to accelerate the development of startups but also to keep them in the city. Since 2012, startups based on Johns Hopkins technology have raised more than $1.1 billion in funding. However, 85 percent of that funding went to build those startups in other states. FastForward aims to change that story, and in so doing, play a role in revitalizing Baltimore’s economy.

“[FastForward] ecosystem we have cultivated over the past four years has helped bring life-changing innovations to market,” Stansky says. “FastForward 1812 is a continuation of our efforts to help startups become successful businesses and establish roots in Baltimore.”
Innovation is essential to our culture at Johns Hopkins. Across our campuses, faculty members and students are eager to develop their ideas and discoveries and put them to use in benefit to society – here in Baltimore and around the world.

We welcome gifts of any size. We would be happy to discuss our range of giving opportunities and other giving options.

For more info, please visit http://ventures.jhu.edu/support-our-mission/