LifeSprout, Proscia and Sonavex CEOs Named to BBJ’s 40 Under 40

The Baltimore Business Journal included three CEOs with ties to FastForward on the annual 40 Under 40 list it released Tuesday: Sashank Reddy of LifeSprout, David West of Proscia and David Narrow of Sonavex.

The BBJ selected the top 40 professionals in Baltimore under the age of 40 after receiving 450 nominations, significantly more than last year’s 250. In its announcement, the BBJ wrote of the honorees, “They are innovators, professionals and entrepreneurs in Greater Baltimore who have already made great strides before the age of 40. They are hungry for success.”

LifeSprout’s solution is a nanofiber-hydrogel composite material that restores three-dimensional volume, feels like your body’s own soft tissue and can promote tissue regeneration.

West, 23, started Proscia in 2014 while a biomedical engineering student at The Johns Hopkins University. Proscia’s digital pathology solution enables pathologists and other researchers to access and tap into pathology data from across the institution. The startup is currently developing a computational pathology solution that could help eliminate subjective cancer diagnoses. Under West’s leadership, the company has secured nearly $2 million in outside capital over the past year.

While a master’s student at the Johns Hopkins Bioengineering Innovation and Design program, Narrow and a classmate invented and developed an innovative solution to address the issue of postoperative blood clots. Now 27, Narrow

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Ever purchase something from Zappos? If so, you may find Johns Hopkins Technology Ventures’ technology publisher site familiar.

The inspiration to improve users’ technology search experiences with an e-commerce-style search engine came to Pete Vrettakos, an associate director at JHTV, after buying shoes from Zappos. Not only did the site display the items that matched his search precisely, it showcased items outside of the specific search parameters that matched his tastes and interests. This type of search, Vrettakos thought, would wholly improve the experiences of users looking at Johns Hopkins’ technology portfolio.

“JHTV wants to ensure that the people who engage us have the best possible experience,” Vrettakos says. “We’re not aware of any other technology transfer office with a guided e-commerce style search functionality for its tech portfolio.

“The intuitive format guides searchers to the information they want and, in some cases, to information they didn’t know they wanted.”

Vrettakos credited several JHTV colleagues—business analyst Kellin Krick, marketing and communications manager Hanju Lee and IT manager Alan Mullenax—and Tim Hollobon from Inteum, a software provider for technology transfer offices, for moving his idea from concept to reality.

“We hope this intuitive and guided searchability of Johns Hopkins’ technology portfolio will drive an increase in traffic to our website as more people come to search for technologies,” Vrettakos says. “Ultimately, this may make it more likely that many of the amazing inventions generated here are licensed which will facilitate the institution’s greater mission of bringing the benefits of discovery to the world.”

The revamped search functionality is only the latest effort by JHTV to improve customer service. In March 2016, the Technology Transfer team launched the 2-2-2 program to increase responsiveness and transparency for those submitting an invention disclosure. This program ensures that inventors receive a response within two days, have a meeting scheduled within two weeks and will have a written decision within two months.

“At all levels, from inventor response to online technology asset searching to transactional tempo, JHTV is building greater efficiency into our commercialization experience,” says Neil Veloso, JHTV’s executive director of technology transfer. “By no means are these one-off efforts. We will continue to identify opportunities that will enable us to become even more streamlined and better serve those with whom we work.”

In April 2017, immediately before the opening of the FastForward 1812 innovation hub, JHTV also launched its new website with simplified navigation intended to help its primary audiences: inventors, industry collaborators/investors, and startups. The redesigned site intends to allow users to find the information they need when they need it.
R. Keith Baker Award: A Friend Remembered, 2 Others Honored

A mentor, friend and so much more, R. Keith Baker passed away suddenly in 2013, but those at Johns Hopkins Technology Ventures who knew him carry their beloved colleague’s memory and feel his inspiration every day.

On July 12, JHTV ensured that Baker’s legacy would endure with the inaugural R. Keith Baker Award, an honor bestowed on current JHTV employees who embody the namesake’s admirable values and qualities: scientific curiosity, strong mentorship capability, altruism, calming influence, resolute perseverance and dedication to Johns Hopkins.

Baker, who earned a Ph.D. in biochemistry from Wake Forest University and MBA from St. Joseph’s University, began working at Johns Hopkins in 2000 and eventually became the senior director of licensing for Johns Hopkins’ Office of Technology Transfer.

“Keith was someone who everyone looked up to,” says Helen Montag, JHTV’s senior director of business development and corporate partnerships. “He was a quiet, smart leader.”

The recent move of the JHTV headquarters from downtown Baltimore to the 1812 Ashland building in East Baltimore presented the perfect opportunity to establish an award in honor of Baker. Now, when people walk into JHTV’s headquarters, they see a remembrance of Baker, a description of the award given in his honor and a list of R. Keith Baker Award recipients.

With more than 50 people in attendance, including Baker’s wife, Eleanor, and one of his three children, Wade, JHTV presented the inaugural R. Keith Baker Award to Director of Business Development Dave Greenwald and Senior Licensing Associate Nakisha Holder. In subsequent years, JHTV leadership will select only one employee for the award.

“Dave didn’t expect to be rewarded for it. He did it because it was the right thing to do,” Montag says. “It’s something Keith would’ve done. They’re both natural teachers.”

Holder, whose tenure with JHTV began in 2007 when it was known as Johns Hopkins Technology Transfer, benefited first-hand from Baker’s mentorship. “It’s something that she has taken to heart and implements in her day-to-day work.

“Nakisha has taken the lead on our tangible material licensing efforts,” says Neil Veloso, the executive director of technology transfer. “Throughout her career but recently especially, she has taken on a number of responsibilities and is always willing to assist and train others.”

JHTV expects to present its next award in summer 2018.

R. Keith Baker Award recipients Dave Greenwald and Nakisha Holder

JHTV Inventor Portal

Got an invention?

Submitting your invention disclosure is now easier than ever. Johns Hopkins Technology Ventures’ user-friendly, simplified electronic portal includes fewer questions and forms, making invention disclosures less complex and time-consuming. Anyone with a JHED identification account can access the portal.

For questions or support, contact Tina Preston at 410-223-1735.
In 5 words, what does your company do?
B-360 turns passion into opportunity.

What are your goals and how will you get there?
B-360 aims to change the perspective of engineers and dirt bike riders using STEM/ STEAM (science, technology, engineering, architecture and math). It also provides safe spaces for students in the program to ride and work on dirt bikes.

In addition, we aim to create a STEM workforce development pipeline by establishing an elementary and middle school program that teaches students the engineering design process, safety protocols and mechanics.

For riders, we want to advocate to the city government for safe spaces to ride and the decriminalization of riding. We also aim to partner with STEM organizations and companies to provide occupational opportunities in this field.

Why have you chosen Baltimore as your startup’s home?
Baltimore is my home and I need to start with solutions here first. Also, Baltimore is a perfect place to prove the model works. If the model can work here and be sustainable, it can work anywhere and help others who are developing social ventures that have the potential for great scalability.

Baltimore is the dirt bike capital, and dirt bikes and all their positive attributes deserve to be included in the culture of our city. As the city develops, I want its citizens to have the opportunity to grow with it and expand their career options.

What opportunities make Baltimore a good place for growing a business?
There are a lot of incubators and startups in Baltimore already as well as initiatives, such as the Social Innovation Lab, that help develop social ventures. Baltimore has a lot of resources, and people want to see innovative solutions grow and thrive here.

In terms of startups and innovation, what’s one thing that separates Baltimore from other tech hotbeds?
Baltimore is a city with great potential because it has the perfect climate for innovation. Not only have established Baltimore changemakers built a tremendous infrastructure that facilitates change in the city, they are supportive of new ideas and initiatives. It’s the perfect mix between new ideation and traditional solutions.

If you could give your past self one piece of advice for creating a startup, what would it be?
Never be afraid to get out there and try something new, and don’t think your idea is too simple. Also, understand that not everyone was given your vision, so it is okay if people do not get it.

What book are you currently reading?
Between the World and Me by Ta-Nahisi Coates and Building Nonprofit Capacity: A Guide to Managing Change Through Organizational Lifecycles by John Brothers

What innovator do you look up to? Why?
Kimberly Bryant of Black Girls Code. I feel like we have similar stories of noticing inequity/ disparity in our communities or workplace and wanting to help future generations not have the same struggle.

It’s after a long day of work, and you don’t feel like cooking. What is your go-to Baltimore restaurant?
Depending on my mood, it will be either Connie’s Chicken and Waffles, Home Maid or Land of Kush.

What’s your favorite non-work-related thing to do in Baltimore?
I honestly just enjoy family time; getting together to go for walks or having picnics at Druid Hill on warmer days, visiting a museum, going to visit my grandmother, taking random car rides around the city. My siblings and I get together every weekend just for some “us” time and they keep me grounded.

Meet the Entrepreneur: Brittany Young Turns Dirt Bike Passion Into Opportunity

Brittany Young
Growing up in West Baltimore, Brittany Young was one of many in her neighborhood enthralled by the dirt bikers who would ride, rev and repair their bikes in Druid Hill Park as well as teach others how to do the same.

Now an engineer, Young created the social venture B-360 to show students how the skills they have developed to maintain their bikes can lift low-income residents to the middle class.

Another report shows that the city has more than 122,000 mid-skill level STEM careers that can lift low-income residents to the middle class.

Below, we discuss Young’s vision for B-360, Baltimore’s startup support system and the benefits of the Social Innovation Lab.

In terms of startups and innovation, what’s one thing that separates Baltimore from other tech hotbeds?
Baltimore is a city with great potential because...
Through innovation, investments and talent nurturing, Baltimore’s tech community grows stronger every day. To recognize those most instrumental in driving this change, The Baltimore Business Journal named the recipients of its second annual Tech 10 Awards, including two with ties to FastForward.

John Cammack and Sathya Elumalai were featured among a prestigious list that included tech company executives, leaders of incubators and venture capital investors.

Cammack, a FastForward mentor-in-residence, is backing several Baltimore-based tech companies like Allovue, Red Owl Analytics and ZeroFox. The ex-T. Rowe Price executive also sits on a number of boards, including those of Betamore and the Johns Hopkins student startup FactoryFour.

Sathya Elumalai, CEO of Multisensor Diagnostics, a FastForward startup, is developing a handheld device called MouthLab that quickly and easily gathers key vital signs. Elumalai co-founded Multisensor Diagnostics in 2015 while earning his MBA in health care management and finance at the Johns Hopkins Carey Business School. In March, his company beat out a field of about five dozen to become one of four finalists in the Association of University Technology Manager’s national business plan competition.

In addition to being featured in the BBJ’s September 22 issue, the publication will celebrate the honorees with a public event on September 21. Jen Meyer, CEO of Betamore and a Tech 10 winner last year, will be the keynote speaker at the event.

Last year, the BBJ selected JHTV head Christy Wyskiel and Protenus co-founders Robert Lord and Nick Culbertson among its honorees for the inaugural Tech 10 awards. Protenus is a FastForward startup currently operating in Baltimore’s Harbor East neighborhood. 

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/give/
Proscia is Teaching Computers to Beat Cancer

For 150 years, pathologists have used glass slides and microscopes to analyze tissue samples, understand cancer and determine the best course of treatments. One Baltimore startup, however, is ushering this process and the whole field of pathology into an era of computational pathology.

Founded in 2014 by Johns Hopkins undergraduates from the Whiting School of Engineering, Proscia began developing data management applications that enable researchers and pathologists to upload, extract and manipulate data, and telepathology solutions that allow a large number of people to analyze the same slide at the same time from different locations around the world.

“Pathologists analyze billions of slides each year, and almost every single one of those is analyzed under a microscope,” says Proscia CEO David West. “In the next couple of years, a huge chunk of those images will be digitized before they’re looked at by a pathologist. This represents one of the biggest trends in big data in medicine ever.”

Though Proscia initially focused product development on the research market, it has increasingly invested in developing image analysis solutions that would benefit pathologists in a clinical setting. The technologies in this sector use computer vision and machine learning to enable pathologists to make more informed and more accurate decisions about the severity of a patient’s cancer and the best course of treatment.

Though Proscia has invested in this area for about a year, the market for these technologies became more attractive in April when, for the first time, the Food and Drug Administration (FDA) approved the first Whole Slide Imaging system for primary diagnostic clinical use in pathology. According to the FDA, this system facilitates the “review and interpretation of digital surgical pathology slides from biopsied tissue.”

“The FDA approval lays the groundwork for the transition from pathology to digital pathology to computational pathology,” says West, who graduated from The Johns Hopkins University in 2016 with a degree in biomedical engineering and a focus on computational biology. “It makes it a good time to be in this space.”

The promise of computational pathology

Science has little room for subjectivity, but unfortunately it still exists. West says two well-educated, experienced and successful pathologists analyzing the same tissue sample could come to two vastly different conclusions. One pathologist may determine that a tumor is likely to metastasize (spread) and want to act aggressively, while the
other may not see as grave of a threat. Though pathologists do a terrific job with the information they have, West says machine learning will help them be even better.

“If a human can do a task with enough training, that means a machine can do it with enough training and perhaps more efficiently than a person,” West says. “We basically are training algorithms to look for patterns the same way a human pathologist looks for patterns.”

Proscia’s algorithms provide a quantitative view of cancer. For example, the algorithm could determine that a tumor is 51.5 percent likely to metastasize. Not only does this arm a pathologist with more data when determining treatment, it provides a standardized diagnostic procedure that reduces errors and improves patient outcomes. It also could create significant financial savings for health care providers.

Despite the promise of this technology, West says that image analysis solutions will never wholly replace a pathologist. Instead, he sees the technology as a tool that will automate certain tasks and augment a pathologist’s expertise.

“Studies have shown that combining an algorithm with human knowledge produces the best results,” West says. “You get nearly 100 percent accuracy when you do that.”

**Finding success in Baltimore**

Proscia has received a lot of recognition for and investments in its work. A little over a year after announcing in February 2016 that it had raised $1 million, Proscia announced another raise for $925,000. Then in June, the Maryland Technology Development Corporation (TEDCO) awarded Proscia the Incubator Company of the Year award for Best Unaffiliated Company.

These successes followed Proscia leveraging multiple resources at Johns Hopkins Technology Ventures (JHTV). West, who entered Johns Hopkins hoping to build his own company, recalled how the support the university provided student startups became much more robust as he worked his way from underclassman to upperclassman and how that support contributed to Proscia’s growth.

“We went through the Ralph S. O’Connor Undergraduate Entrepreneurship Fund, and that was a great experience for us,” West says of the program that supports teams of undergraduate entrepreneurs with up to $10,000 in funding and mentorship. “JHTV is a community. It’s awesome to be a part of it.”

After graduating, West decided to stay in Baltimore because of the resources available to help him build his company. Proscia has operated out of the Spark co-working space near the Inner Harbor for the past year, but West has continued to work closely with JHTV in that time.

“I can say confidently that the support for entrepreneurs and technologists coming out of Hopkins is there,” West says. “In addition to the O’Connor Fund, we made some connections to some funds that were here. I look forward to engaging JHTV more in the future.”
3 Hopkins Faculty Members Awarded $270,000 in Thalheimer Funding

A national In July, three Johns Hopkins faculty members received awards totaling more than a quarter million dollars from the Louis B. Thalheimer Fund for Translational Research.

The $270,000 in seed funding distributed by Johns Hopkins Technology Ventures (JHTV) will support the recipients as they produce the proof-of-concept, prototype and commercial feasibility studies that will enable them to move their discoveries and innovations out of the laboratory and into the marketplace.

In addition to funding, each of the Thalheimer Award recipients receives a mentor. These mentors help the innovators determine available opportunities in the marketplace and develop industry and investor connections. Each mentor is part of FastForward’s network of mentors-in-residence. Out of FastForward Homewood, won the competition in 2015, and the success of one could have played a role in what happened this year.

“When someone sees someone else be successful, there’s an ‘if they can do it, I can do it,’” Stansky tells The Daily Record. “You’re thickening the soup in which things can come together and grow.

**Dr. David Efron**

Dr. David Efron received $100,000 in Thalheimer funding to facilitate the development of Depictation, an interactive surgical depiction for the electronic medical record.

Due to the digitization of medical records, surgeons have lost the opportunity to sketch and store anatomical changes from complex surgeries. Depictation has the potential to enable surgeons to add the visual nuances that stem from surgery into these records with its drag-and-drop, 3-D visualization tool. Dr. Efron’s technology is a collaboration that spans the Johns Hopkins’ Department of Surgery, Carey Business School and Art as Applied to Medicine program.

**Dr. Justin Sacks**

Dr. Justin Sacks received $100,000 in Thalheimer funding to support the development of the Mercury Patch, a technology based on a collaboration with Center for Bioengineering Innovation and Design students that could solve the common patient issue of pressure ulcers, also known as bedsores.

Because bedridden patients develop pressure ulcers in as little as two hours, caretakers continuously reposition patients and apply breathable foam and gauze bandages to vulnerable areas. The Mercury Patch would add pressure sensors and Bluetooth technology to these bandages, enabling them to wirelessly transmit pressure information to nursing stations, smartphones and other devices. This data would provide insights into when to move patients and whether the repositioning relieves pressure.

**Dr. Etienne-Cummings**

The funding received by Dr. Ralph Etienne-Cummings marks the first time a Thalheimer award has been provided for a pure engineering project. Dr. Etienne-Cummings received $70,000 for the development of a pixel-wise reconfigurable exposure image sensor for automotive advanced driver assistance systems (ADAS) and consumer cameras.

Dr. Etienne-Cummings’ technology aims to improve upon existing camera sensors by providing a more accurate depiction of a device’s surroundings. This innovation could improve the performance of driverless cars, military drones and cell phone cameras.
Increasing interest

Now in its third year, the Louis B. Thalheimer Fund for Translational Research has seen a significant uptick in interest from Johns Hopkins faculty members. During fiscal year 2016, JHTV received six applications. That number increased to eight the following year and reached 20 this year.

A $5.4 million gift from Louis Thalheimer, a school of medicine trustee, created the fund that bears his name. Each year, researchers receiving a Thalheimer award will receive funding from $25,000 to $100,000. The funds are distributed as the researchers reach milestones over a period of nine to 12 months.

“Thalheimer funding provides Johns Hopkins faculty with a critical resource that enables them to more quickly commercialize innovation and bring its benefits to the world,” says Nina Urban, associate director of FastForward. “We are extremely grateful for Mr. Thalheimer’s gift and are thrilled that more and more of our faculty are looking to take advantage of the opportunity he has provided.”

Since its inception, the fund has supported Johns Hopkins faculty members with $670,000, including the $270,000 awarded this year. The first Thalheimer awards were distributed in January 2016 to Hai-Quan Mao, Ahmet Hoke and Francoise Marvel. The second Thalheimer cohort of John Laterra and Krishnaj Gourab received funding in July 2016.

2016 awards

Ahmet Hoke, professor of neurology and neuroscience, received $59,991 to study potential drugs—some novel—that could prevent chemotherapy-induced peripheral neuropathy (CIPN), a disease affecting almost 8 percent of the U.S. population and a common side effect of many chemotherapeutic drugs.

Francoise Marvel, an internal medicine resident at Johns Hopkins Bayview Medical Center, received $44,000 to develop the Johns Hopkins HEALTH-E App to accompany patient prescriptions.

Hai-Quan Mao, Whiting School Professor of Materials Science and Engineering, received $100,000 for the development of a soft tissue alternative to benefit cancer and trauma patients and others cosmetically.

2017 awards

Dr. Krishnaj Gourab, an assistant professor of physical medicine and rehabilitation, received $95,549 for ReHAP, a software that aims to triage patients for therapy.

Dr. John Laterra—a professor of neurology, oncology and neuroscience and a co-director of the Brain Cancer Program at the Johns Hopkins Kimmel Cancer Center—received $100,000 for the development of a therapeutic for the treatment of primary and metastatic cancer.

Eligibility for Thalheimer funding is restricted to Johns Hopkins faculty members who have formally disclosed a technology to JHTV and have been assigned a case number. Additionally, the applicant’s invention must not be subject to any pre-existing exclusive licenses, non-exclusive licenses or options.

Application information and scoring criteria is available here. Email applications to Hannah Jannarone (hdj@jhu.edu). The next application period will open in March 2018, and a request for application (RFA) will be distributed in early January 2018.

BBJ’s 40 Under 40

Continued from page 1

has turned this technology into a promising startup, Sonavex, that has raised more than $4 million. Sonavex recently moved out of the FastForward Homewood innovation hub into its own office space in Baltimore’s Canton neighborhood.

In addition to Reddy, West and Narrow, three other honorees had ties to Johns Hopkins:

John Avirett is a Johns Hopkins alumnus who now serves as a partner at Greenspring Associates.

Sarah Hemminger co-founded Thread as a Johns Hopkins graduate student and now serves as the social venture’s CEO.

Wendy Osefo is a Johns Hopkins University professor and founder of the 1954 equity project.

This year’s honorees continue a tradition of strong representation of Johns Hopkins Technology Ventures entrepreneurs and staff members on the 40 Under 40 list.

Last year, the Baltimore Business Journal selected Urban Pastoral CEO and founder J.J. Reidy and Fusiform CEO and co-founder Param Shah among its 40 Under 40 honorees.

In 2015, the BBJ recognized Vasoptic Medical CEO M. Jason Brooke, Social Innovation Lab Director Darius Graham and AsclepiX Therapeutics co-founder Jordan J. Green. Graham now serves as the director of student ventures for FastForward. In 2014, the BBJ named Rehabtics (now Kangaroo Health) CEO Xiaoxu Kang to its list.

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Good News: Protenus raises $3 million Series A funding round; Proscia receives award for leadership in digital pathology; SIL venture measuring Baltimore air quality; Baltimore among 8 booming entrepreneurial cities

Startup News:

Despite increased efforts by health care organizations, the number of data breaches they experience has remained static, according to the Protenus Breach Barometer. Protenus, a FastForward startup operating in Baltimore’s Harbor East neighborhood, found that more than a quarter million patient records were impacted by breaches in May alone. MedCityNews

Protenus has raised $3 million in a Series A funding round led by Kaiser Permanente Ventures. The startup will use the funding to keep up with growing customer demand. Baltimore Business Journal, Technical.ly Baltimore

Emocha Mobile Health, a startup taking space in FastForward 1812, is expanding its mobile application designed to increase medication adherence to help those undergoing treatment for opioid addiction. The startup received a $1.7 million federal grant and $1 million in private funding from the Baltimore Angels, Blue Jay Syndicate and others. Emocha will work with the University of Washington and Boston Medical Center to test the technology’s effectiveness. Baltimore Sun, Technical.ly Baltimore, The Daily Record

Frost & Sullivan named Proscia, a startup founded by Johns Hopkins University students now operating out of Spark in the Inner Harbor, the recipient of its 2017 Best Practices in Enabling Technology Leadership Award in Digital Pathology. Press Release

In need of more space, Tissue Analytics moved its 11-person team out of Spark Baltimore and into a space above Rams Head Live in Power Plant Live. The FastForward startup is developing a technology that helps health care providers monitor the healing progression of wounds. Technical.ly Baltimore

Six social ventures in Baltimore, including B-360, a member of the most recent Social Innovation Lab cohort, participated in a 10-day social entrepreneurship program hosted by Red Bull. An additional eight social ventures from around the country joined the Baltimore teams. Baltimore Business Journal

The Warnock Foundation awarded B-360 founder Brittany Young $2,000 to support her mission to change the perception of dirt bikes in Baltimore, advocate for safe riding and create pathways to STEM careers for riders. Twice a year, the Warnock Foundation awards fellowships to 12 social ventures and provides mentorship and workshops to accelerate their development. Baltimore Business Journal

A collaboration that could help patients with cancer between FastForward startup Quantified Care and DSHI earned the Top Innovation Prize at the Guidewell Innovation-Cancer Challenge. It combined Quantitative Care’s digital health platform for remote patient monitoring and engagement with DSHI’s innovative AI-driven algorithms. Press Release

Vixiar Medical has raised a $1.5 million seed round for its development of a portable, non-invasive device that allows remote monitoring of congestive heart failure patients. The Abell Foundation, TEDCO, Kacero Holdings, BV and an unnamed Chinese medical device and services investment firm provided the funding. In addition to the funding, Vixiar announced it was moving to Baltimore from Annapolis. Technical.ly Baltimore, Baltimore Business Journal

BarberFleet participated in the 3-Day Startup Global Roundup app design pitch competition in Austin, Texas, finishing in the top four from about 50 applicants. Despite not winning the grand prize of having their app built, James Shamul and Jamie Chen, the startup’s founders and Johns Hopkins University students, received insights from coders and seasoned entrepreneurs at the event about how to move forward with the company’s app design. Watch video from the whole day here.

Biopharmaceutical company Kala Pharmaceuticals announced the closing of its initial public offering in which it raised more than $100 million before underwriting discounts, commissions and other expenses of the offering. Kala is developing treatments for inflammation and pain following ocular surgery and for the relief of the signs and symptoms of dry eye disease. Press Release

TechCrunch named FactoryFour one of its eight favorite startups participating in the renowned venture capital fund and accelerator 500 Startups. Founded by Johns Hopkins University students Param Shah and Alex Mathews, FactoryFour is developing a technology that uses big data to improve efficiencies in the manufacturing process management space. TechCrunch

Multisensor Diagnostics and Sonavex make up two of the 19 startups selected to participate in the Texas Medical Center’s Innovation Institute. Over four months, the FastForward startups will have the opportunity to introduce their technologies to the Houston...
health care market. Multisensor Diagnostics is developing a portable device that quickly gathers an individual’s vital signs. SonaveX’s solution uses imaging technology to improve surgical patient outcomes. **Press Release**

### Startup Profiles:

The recipient of JHTV’s Summer Undergraduate Entrepreneurship Award, **MoTrack Therapy** has been working with therapists and hand surgeons at Johns Hopkins and throughout Baltimore to help build and test its product. It has also been recruiting more participants for its early trials. **Baltimore Business Journal**

A medical tricorder may sound like a device that could only exist in science fiction movies, but **Multisensor Diagnostics** is making it reality. Sathya Elumalai, the CEO of the FastForward startup, went on the Breaking Health Podcast to discuss his technology and how he entered the field. **Breaking Health**

Studies show that 15 percent of cardiac surgeries result in acute kidney injury (AKI), but Johns Hopkins alumns Aaron Chang thinks he has found a way to reduce that rate. Chang founded **Renalert**, a startup taking space in FastForward 1812, to develop a device that enables doctors to optimize blood pressure and blood flow during surgery. If successful, patients’ kidneys will receive the proper amount of oxygen and a lower risk of AKI. **Insight**

The **Social Innovation Lab (SIL)** supports nonprofits and mission-driven businesses that can provide value to a community. DC Inno profiled SIL, explaining how it supports social ventures with funding, mentorship, access to co-working spaces and more. **DC Inno**

How clean is the air on your block? **Baltimore Open Air**, a venture founded by Johns Hopkins University graduate students, has placed hundreds of air pollution sensors around Baltimore to show which blocks have the cleanest air and why that is the case. **Baltimore Sun**

Pens, pencils, paper, notebooks and so much more are essential but expensive school supplies. In order to alleviate some of this economic stress, Melissa Badeker created **Baltimore Teacher Supply Swap**. A member of the 2015-2016 SIL cohort, the social venture allows teachers and parents to pay what they want for a membership that provides access to a bevy of free school supplies. **WBALTV**

Shantell Roberts turned the death of a child into a mission to ensure no parents in and around Baltimore have to endure the same tragedy. Her social venture, **The PAC** was a member of SIL’s 2016-2017 cohort and provides safe sleeping spaces for newborns. “I was not the first or the last mother to experience a painful and tragic loss,” Roberts says. “But I chose to turn my pain into a purpose.” **Baltimore Magazine**

### Baltimore News:

Patterson Park and Druid Hill Park are two gems of the Baltimore park system, but a smaller, linear park caught the attention of Curbed.com. The publication operated by Vox Media named East Baltimore’s newly constructed Eager Park in its list of eight linear parks that have changed cities. Eager Park, which sits outside JHTV’s headquarters and the FastForward 1812 innovation hub, is 5.5 acres and three blocks long. **Curbed**

Where’s the next Silicon Valley? Why not Baltimore? According to a new report from real estate firm Cushman & Wakefield, Baltimore ranks 12th among leading high-tech metro areas in 2016. One of the driving forces of Baltimore’s ranking is its access to talent, something the report considered heavily. **CityLab**

Entrepreneur named Baltimore one of eight cities whose entrepreneurship communities are booming. The recognition comes along other emerging innovation hubs like Raleigh, N.C. and New Orleans. The article credits Johns Hopkins and other academic institutions for providing the young talent and energy that will make Baltimore a “mainstay for innovation on the East Coast.” **Entrepreneur**

Baltimore is the coolest city on the East Coast, according to Travel and Leisure. The article highlights recent projects that have emphasized Baltimore’s waterfront, trendy dining and entertainment options as well as a young generation of residents with the ambition to build the place in which they want to live. **Travel and Leisure**

Not convinced Baltimore is a cool city? A report from the Resonance Consultancy ranked Baltimore one of the top 20 cities for art and cultural tourism. Cities were ranked by the number and quality of museums, theaters and concert halls. **Baltimore Business Journal**

Baltimore is one of eight U.S. metro areas where the most tech jobs are being created. Nearly 13 percent of all job openings in Baltimore through June 2017 were related to tech. That’s a year-over-year increase of 3.4 percent. **Baltimore Business Journal**

Venture for America has established a strong presence in Baltimore, and it continues to grow. The program, which offers fellowships to recent college graduates and matches them with startups looking for talent, operates in 18 cities. Most of the seven fellows who came to Baltimore as part of the first VFA cohort continue to work in Baltimore. **DC Inno, VentureBeat**

On August 2, Johns Hopkins experts and alumni brainstormed solutions to pressing urban challenges at CityLab Baltimore. Among those in attendance were former New York City Mayor and philanthropist Michael Bloomberg and Baltimore Mayor Catherine Pugh. At the event, Pugh pointed to Johns Hopkins as an anchor institution helping the city “change its narrative” by attracting and retaining talent. **The Hub**

A year ago, The Johns Hopkins University boosted Baltimore small businesses by helping attract a program designed to increase economic opportunities in the city. On August 2, Goldman Sachs and Bloomberg Philanthropies pledged a five-year, $10 million commitment to continue the program. Johns Hopkins will serve as the host site of the program, which provides entrepreneurs with support services, access to funding and educational opportunities. **The Hub**

Nationally, venture capital investments have dropped nearly 10 percent from the first half of 2016 to the same time period in 2017. Though this may not sound like great news for startups, those in Baltimore have less to worry about. According to the Baltimore Business Journal, investors may shy away from traditional tech hotbeds that face higher operating costs. The venture capital that Baltimore startups raised over the first half of 2017 put it on pace to edge out last year’s total. **Baltimore Business Journal**