University Implementation Plan for the Innovation Ecosystem

March 4, 2015
# Table of Contents

- Executive Summary ................................................................. 3
- Part One: Space ........................................................................ 7
- Part Two: Funding ................................................................. 12
- Part Three: Resources and Policies ........................................... 14
- Conclusion ................................................................................ 20
Executive Summary

On August 15, 2013, we jointly charged a committee of faculty and students to consider the state of the ecosystem for entrepreneurship and commercial translational activities at Johns Hopkins University and provide its views on any areas of needed reform or investment. The Committee on the Innovation Ecosystem was co-chaired by Jennifer Elisseeff, the Jules Stein Chair in Ophthalmology and director of the Johns Hopkins Translational Tissue Engineering Center; and Drew Pardoll, the Abeloff Professorship of Oncology and director of the Johns Hopkins Cancer Immunology and Hematopoiesis Program. The committee met on numerous occasions, collected internal and external data, solicited feedback broadly across the university and from stakeholders throughout Baltimore and the nation, and visited other universities to explore their strategies and approaches.

Before submitting its final recommendations, the committee on April 11, 2014, circulated a draft report to the university community. In response, hundreds of substantive comments were offered online and in person. The committee also held two town hall meetings, one on the Homewood campus and one in East Baltimore, and both were live streamed to the university community. After considering the feedback, the committee made a range of edits to the document and submitted the final version of the report on May 30, 2014. It can be found at the Johns Hopkins Technology Ventures website at ventures.jhu.edu/innovation-report/.

The committee report discusses the role and value of translational research activity at Johns Hopkins University, emphasizing that such efforts are integral to the mission of the university in a wide range of ways. These include the potential to take our discoveries to people around the world; attract and retain our peerless faculty, students, and staff; support the next generation of groundbreaking research; and catalyze economic activity in the communities around us. The committee report then observes that Johns Hopkins is a remarkably entrepreneurial place and that our relationship with the private sector helped fuel our early successes in areas such as bacteriology and biochemistry. Finally, the report cites many of the noteworthy entrepreneurial and translational endeavors that have emerged in recent years across the university.

However, the committee concluded that we could do far more in providing the structure and the resources needed to assist interested members of our community in harnessing the marketplace to translate their knowledge into products and therapeutics, and that we lag behind our peers in this
regard. The report set out 22 specific recommendations for ways the university could improve its commitment to these innovation and entrepreneurship endeavors. The areas of need were organized into three broad categories:

1. a physical space for innovation in East Baltimore that is integrated with other areas of such activity across the university;
2. seed funding and an investment fund to fuel the translation of discoveries into marketable inventions;
3. a more extensive and fluid set of commercialization services, educational opportunities, policies, and infrastructure to support the entrepreneurial aspirations of our community.

The document you are about to read details how the university plans to respond to the strategic challenges set out in the committee report. Over the last several years, and in particular owing to the investments by the School of Medicine in our commercialization activities, the university has made great strides in improving the entrepreneurship ecosystem for our community. The number of invention disclosures, licenses, and faculty startups has risen over time. The Whiting School of Engineering recently launched an accelerator for Johns Hopkins–affiliated companies near the Homewood campus, and the School of Medicine helped bring an information technologies accelerator to the university. Many other areas of entrepreneurial investment and activity have emerged across our schools and divisions, a number of which are detailed in the report.

And yet, as the committee concluded, we still have some distance to travel in offering a truly comprehensive and seamless network of robust entrepreneurship and licensing capabilities available across the entire university. This document sets out our blueprint for the next stage of growth in this area. Mirroring the committee report itself, the document is divided into three parts: Space, Funding, and Resources and Policies. For each, the recommendations in the committee report are listed, followed by the action the university has taken in recent months—and plans to take in coming years—to catalyze further the enormous entrepreneurial potential at Johns Hopkins. Where appropriate, the report describes some of the costs, risks, and challenges of pursuing the goals.

The initiatives detailed below will be carried out by a new organizational entity known as Johns Hopkins Technology Ventures, which will encompass technology licensing, corporate and industry relations, and FastForward. All said, the aspirations in this report will require $40 million in new cross-university investments across the next five years, exclusive of the capital commitments to a new investment fund.
Table 1: Areas of planned investment across next five years

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<tr>
<th>Area of Planned Investment</th>
<th>Five Year Totals</th>
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<tr>
<td>Space</td>
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<tr>
<td>Funding</td>
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<tr>
<td>Resources and Policies</td>
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<tr>
<td><strong>Total</strong></td>
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Of this sum, $10 million reflects one-time investments devoted largely to fitting out space, another $10 million will be allocated to an evergreen translational pre-seed grant program that is designed to support itself through the recoupment of university investments once the technology is licensed, and $4 million will take the form of annual, recurring expenses. The initiative is also expected to generate revenue for the university that over time could offset these costs.

Of course, securing a sum of money this large is not a simple challenge. The university has committed $9 million to launch these priorities across the next three years ($2.9 million of which will go to one-time investments largely in space fit-out costs, and the remaining $6.1 million to recurring costs). Johns Hopkins Medicine Board of Trustee member Louis Thalheimer is supporting a $5 million fund to launch the translational pre-seed grant program for Johns Hopkins scholar-inventors. And a number of other individuals, foundations and companies have provided support in recent months for this initiative, including Ralph O’Connor, Johns Hopkins University Emeritus Trustee and member of the Johns Hopkins Class of 1951; the Abell Foundation; and Brown Advisory. These initial commitments have already helped open FastForward’s interim innovation hub in East Baltimore, and will provide funding for early stage startups and student teams, as well as the resources needed broadly to support many of our programming and mentoring services.

Even so, these extremely generous commitments still leave unaddressed many of the facets of the plan set out below. For example, the challenge of building out permanent and considerably larger mission critical space for startups in all stages of growth will demand a significant financial investment. And so, the university is working vigorously to attract new investments and partnerships with a range of external stakeholders, including from foundations, industry, and government, all while maintaining a steadfast sensitivity to conflict of interest and related principles that undergird our core mission. Simply put, the goals you see herein will be treated as priorities, but funding may take time.
Johns Hopkins University has a time-honored and unrivaled tradition of world-class, curiosity-driven investigation and basic research. We see these translational activities as a natural extension of this tradition, one that can amplify the mission of the university in many new and inspiring ways. And in fact, the potential returns on the present and future investments set out in this paper are enormous: They include new platforms and partnerships for members of our community to collaborate in new ways and bring their discoveries to market; more educational and programming opportunities for our faculty, students, and staff to learn about entrepreneurship and participate hands-on in startups and other enterprises; the draw of companies to take root in the areas surrounding our campuses; and revenue that can be reinvested in the university’s core missions. We are already seeing the early signs of these returns from our recent efforts.

As one of the world’s leading incubators of knowledge and discovery, we are at a moment of great challenge and transcendent opportunity. The federal government, long the partner of universities and a patron of research, is roiled by budget constraints and has slowed its investments in these areas. The private sector, and in particular pharmaceutical companies, has been easing away from prior commitments to research and development, leaving a void in the pipeline that translates basic discoveries into products. And the emergence of a knowledge economy places research universities, home to unrivaled intellectual capital, front and center as engines of job growth and prosperity in their communities as perhaps never before.

A renewed commitment to the pipeline of discovery from basic research to licensed discoveries will play an essential role in how we advance our mission and rise to meet the challenges and possibilities of this new world. To quote the words of the committee, the moment has arrived to “answer the call of our faculty, staff, and students for a more robust, streamlined, and effective set of resources and partnerships to take their discoveries to the world.”

We invite you to join us on this journey.

Ronald J. Daniels
President of Johns Hopkins University

Paul B. Rothman
Dean of Johns Hopkins University School of Medicine
Chief Executive Officer of Johns Hopkins Medicine
Part One: Space

The first section of the committee’s recommendations calls on the university to construct a physical hub for entrepreneurship in East Baltimore, one that is connected seamlessly to other locations of innovation activity across the university, and that provides affordable turn-key space designed for entrepreneurs to build their endeavors, interact with experts and one another, and access a host of innovation resources.

Recommendation One: Create a physical space for innovation in East Baltimore.

Action: The university has identified long-term space for an innovation hub in a new building being planned for 1812 Ashland Street, currently scheduled to open in late 2016. This building will be located in the East Baltimore Development Initiative footprint, and within walking distance of the schools of Medicine, Public Health, and Nursing, and the Johns Hopkins Hospital.

Given the importance of identifying space, we have also developed over 6,000 square feet of short-term office and laboratory space to house our innovation activities on an interim basis in the Rangos Building at 855 N. Wolfe Street. Entrepreneurs started moving into this interim space in January 2015, and the grand opening took place at the beginning of February.
Recommendation Two: Make the new space available to the entire university.

Action: The new space will be designed with an eye to seamless integration across the university. In January 2013, the Whiting School of Engineering launched FastForward, a new accelerator in the Stieff Silver building near the Homewood campus. It has been an enormous success, with over 70 applications and more companies applying for space than we can accommodate. The new innovation space planned for 1812 Ashland Street will be named FastForward East, and will be integrally connected to the existing innovation space in Stieff Silver, to be renamed FastForward Homewood. We will harness the expertise and experience of FastForward Homewood to support the new hub at FastForward East, and an expanded cadre of experts, mentors, and staff will travel between the two campuses. The two locations will share programming and other resources as well, and will be connected through a lobby Skype connection that is always on.

Renovations and expansions are also planned for the FastForward Homewood space, which is already at capacity less than two years in, with demand for support vastly outpacing supply. Existing innovation sites at Montgomery County, Sibley Hospital, and APL will be connected to FastForward Homewood’s web of services.

These efforts will not only maximize university community access to our investments and resources but also increase the potential for synergies across the campuses.

Recommendation Three: Design the space in a manner that is conducive to entrepreneurship and collaboration.

Action: Johns Hopkins Technology Ventures (JHTV) is working closely with Johns Hopkins Facilities and Real Estate to ensure that the design of the new innovation space meets the mission and programming needs of our innovation ecosystem. The facility will provide a combination of a co-working environment, dedicated office space, and shared and dedicated lab space, all with an eye to supporting both early-stage and established companies. The design will include common areas to promote collaboration and interaction, and flexible space that can be used to provide education and programming for startups, as well as community social and networking events. Finally, the space will include a range of additional features conducive to collaboration and creativity, such as whiteboard walls and dedicated fiber lines for uninterrupted connectivity.
**Recommendation Four: Provide opportunities in the new space for students and early stage teams.**

**Action:** A recent, generous gift from Ralph O’Connor, trustee emeritus and member of the Johns Hopkins Class of 1951, will support a new program of grants and other entrepreneurship resources for undergraduate student teams. A portion of that gift will go specifically toward supporting students in the FastForward space. A range of additional resources in the Johns Hopkins Technology Ventures ecosystem are already providing entrepreneurship support to students. For instance, the Social Innovation Lab has supported 45 different social enterprises to date, almost all of them run by students, and these teams have gone on to receive approximately $1.5 million to further their work. Finally, as noted in Recommendation Three, the space will deliberately make available highly affordable shared space—allowing teams to rent an area as small as a desk—to meet the needs of early companies, and allow them to start and then grow in the FastForward ecosystem.

![Figure 2: The 2014-15 cohort of the Social Innovation Lab](image)

**Recommendation Five: Open the physical space to entrepreneurs beyond Johns Hopkins.**

**Action:** One of the appealing features of a network of hubs across JHU is that we can also attract entrepreneurs beyond the reaches of our university and benefit from the collision of ideas, expertise, and talent that results. Through our ability to provide space at reasonable prices for selected startups, we can encourage entrepreneurs around Maryland to locate at our space, providing a critical mass of commercially minded operators to support our effort at JHU. In particular, we anticipate that those
interested in the life sciences, health care information technology, and cybersecurity will desire a connection to the FastForward ecosystem. Therefore, we will reserve space in the 1812 Ashland footprint for both commercial ventures that draw on Johns Hopkins technology and those that do not, and there is scope for additional space in the East Baltimore Development Initiative footprint as demand develops. Outside entrepreneurs will enrich our innovation ecosystem and lead to untold creativity and unforeseen collaborations between our university and the innovators across the world.

**Recommendation Six: Co-locate commercialization offices in the physical space.**

**Action:** Preliminary plans for the FastForward East hub at 1812 Ashland include not only space for our startups but also room to house components of those Johns Hopkins University functions that are critical to translational commercial efforts, including representatives from Technology Ventures, Research Administration and the School of Medicine’s Business Development & Strategic Alliances group. Limitations of space in the new building may prevent the co-location of all the entrepreneurial functions from across the university, and so we are prioritizing those personnel and activities with direct interaction with the faculty for movement into the building. As discussed in Recommendation 15 below, efforts are already being taken to coordinate more closely the work of these stakeholders across the university through, for example, the creation of a cross-university committee dedicated to this purpose.

**Recommendation Seven: Provide an operations team to manage the physical space.**

**Action:** The preliminary budget for the permanent and the interim FastForward East spaces includes plans for dedicated personnel at each location to oversee space and event planning, to keep all aspects of the operation running smoothly, and to respond to the needs of the entrepreneurs.

**Recommendation Eight: Design a virtual counterpart to the physical space.**

**Action:** The university recently launched a new online portal for our innovation and entrepreneurship efforts under the new Johns Hopkins Technology Ventures brand. This website is the virtual counterpart to the physical FastForward space and will offer a one-stop shop for faculty and students to disclose inventions, learn about events with subject-matter experts, connect with our mentors-in-residence, and find information and seek counsel on topics ranging from fundraising to licensing to company formation. For outside stakeholders, the website will provide a front door to search for available technologies to
license, learn more about JHU-affiliated startups, and find information on business development contacts. The site is now available at ventures.jhu.edu.

Recommendation Nine: Launch an interim space for the innovation hub, pending completion of the permanent space.

Action: As described above, in February 2015, the university opened a temporary hub for East Baltimore innovation activities in the Rangos Building at 855 N. Wolfe Street. This interim facility provides over 3,000 square feet of shared and office space on the ground floor and 1,000 square feet on the mezzanine, as well as nearly 2,500 square feet of lab space in two suites. The temporary hub offers affordable office and lab space, common areas, and access to essential services, and is adjacent and open to the new Atwater’s restaurant. This space will serve the Johns Hopkins community until a permanent innovation hub can be secured in 1812 Ashland.
Part Two: Funding

The second part of the committee report chronicles the importance and the challenges of making available to entrepreneurs the funds that can address the widening gap in investments in the private marketplace and promote the translation of discoveries into the next generation of therapeutics, devices, and inventions.

**Recommendation Ten: Launch a translational pre-seed grant program.**

**Action:** Plans for the FastForward ecosystem include a pre-seed award program open to all faculty and students who have disclosed inventions to Johns Hopkins Technology Ventures that are protected by the university’s intellectual property policy. These grants would seek to support very early stage projects to try to move them to the investable stage. To achieve its potential, the program will require the involvement of an outside advisory group with expertise in the industry vertical, a translational fund manager to operate the funding function, and at least one project manager to track milestones and progress to market. The goal will be to make the funding “evergreen”, meaning that the university’s investments will be recouped—similar to the way patent expenses are recovered—when the technology is licensed.

We are also determined to continue to take maximal advantage of other programs offered at the federal, state, and regional levels, and advocate for further such investments. And so, the translational pre-seed grant program will complement and seek to leverage existing programs. Among them are the Maryland Innovation Initiative grants run by TEDCO, the InvestMaryland programs operated by the Maryland Department of Business and Economic Development, Coulter grants available to members of the Biomedical Engineering Department and funded through a partnership with the Wallace H. Coulter Foundation, the NIH-funded Accelerated Translational Incubator Pilot Program run by JHU’s Institute for Clinical and Translational Research, and the Cohen Translational Engineering Fund for faculty within the Whiting School of Engineering.

**Recommendation Eleven: Design an investment fund for Johns Hopkins startup companies.**

**Action:** The lack of venture capital critical mass in Maryland is a factor that hampers our ability to reach our potential as a university teeming with new inventions that are commercially relevant. The process to
bring a product to market is expensive, especially in a regulated setting like the one that applies to any drug, device, or diagnostic, and it demands capital and expertise. Although grant funding of the sort discussed in Recommendation 10 is essential in nurturing a new idea, the process of then taking that idea to market requires far more money than can be generated through a seed-funding program. Instead, risk capital—which offers those that provide the funding a return on their investment—is essential to the translational enterprise and is traditionally the primary source of funds for the full translational spectrum.

Therefore, the university agrees with the committee that an investment fund focused on commercially relevant and game-changing technologies can serve an important role in catalyzing our inventions to move from idea to reality. Any investment fund should be run by an external manager with relevant experience, though such a fund will be predicated on the availability and interests of investors. The university is investigating similar types of funds affiliated with other universities and research centers to understand the development and management of such funds, and it will seek to raise capital from those excited about investing in the life-changing technologies developed at Hopkins. This fund sits outside the $40 million budget identified earlier, since unlike the other commitments discussed in this report, it takes the form of capital investments that would generate a return to investors and would need to be managed outside the university.

**Recommendation Twelve: Offer funds to support student entrepreneurs.**

**Action:** Starting next year, Johns Hopkins Technology Ventures will offer new grants to undergraduate students thanks to a generous gift from Ralph O’Connor. The gift also provides for a full-time coordinator to connect entrepreneurial students to resources throughout the JHTV ecosystem. In October, the Social Innovation Lab accepted 12 new organizations into the 2014–15 cohort, principally students from the Bloomberg School of Public Health, the Whiting School of Engineering, the Carey Business School, and the Krieger School of Arts and Sciences. The Lab has now supported a total of 45 social enterprises to date, all led by students, who have gone on to receive approximately $1.5 million to further their work. Social Innovation Lab participants will have access to the full range of services available through Johns Hopkins Technology Ventures. The university has committed to the provision of core funding for the Social Innovation Lab through 2017.
Part Three: Resources and Policies

The final component of the committee’s recommendations identifies a bundle of additional resources, investments, and policies that would provide the foundation for our community’s entrepreneurial aspirations.

Recommendation Thirteen: Cultivate a network of entrepreneurship experts.

Action: Johns Hopkins Technology Ventures is implementing a plan to use a sophisticated networking database to cultivate, engage, and appropriately leverage the expertise of seasoned entrepreneurs, company executives, and investors. This approach is modeled on financial firms that use connection and tracking software and find it key to the success of their businesses, and it will enable JHTV to be far more effective in its outreach to external partners, increasing its ability both to target opportunities strategically and to coordinate across functions with more transparency.

JHTV has already hired two network coordinators who will track and mobilize our interaction with external stakeholders. They will do everything from making sure the right faculty inventions are being marketed to the right companies, to connecting our startups with experienced guiding hands from similar fields. The university is launching this new approach to entrepreneurship networking in 2015 and believes the critical function of connecting our faculty to experts in industry will be a key success factor in our mission.

Recommendation Fourteen: Develop a cohort of entrepreneurs-in-residence (EIR) and business analysts.

Action: This past year, the university launched a new mentors-in-residence (MIR) program. As of January 2015, there are 14 such MIRs available to mentor our faculty. Our MIRs are part-time volunteers providing industry experience to startups, reviewing business plans, and providing counsel to Johns Hopkins faculty, staff and students. They are also available to licensing teams to help interface, connect, and position our technology for licensing to industry. Their assistance will be critical in identifying commercial relevance, understanding competition and regulatory hurdles, and preparing for investor presentations. The first cohort of participants spans areas of expertise that include personalized
medicine, life science tools and services, oncology development, genomics, computational discovery, software, medical devices, engineering, angel and venture investments, and general business expertise.

We are also hiring additional venture coordinators and business analysts as on-site experts responsible for providing analysis to our faculty and student venture concepts and startups. Their expertise will include intellectual property analysis, market analysis, product development plans under the supervision of the director, financial plans, and the drafting of initial business plans for review by the mentors-in-residence.

**Recommendation Fifteen: Integrate commercialization services across the university.**

**Action:** Building toward a one-stop front door for internal and external access to our innovation ecosystem is a key component of our planning.

In 2013, we created the Commercial Advisory Group, a cross-university committee that meets monthly to discuss the pipeline of industry-related activities around the university. The group includes individuals from Johns Hopkins Technology Ventures, the School of Medicine’s offices of Research Administration and of Business Development and Strategic Alliances, Development and Alumni Relations, the Brain Science Institute, representation from the offices of the Provost and the Vice Dean for Research at the School of Medicine, the Coulter/Center for Biomedical Engineering and Design program, and Johns Hopkins Healthcare Solutions.

In addition to maintaining a pipeline report of all commercial deal activity across JHU, the group supports cross-university industry partnerships and works toward a defined strategy for industry engagement. For corporate engagement, we have formed working groups around major deals, ensuring that we engage the appropriate parties across the university. We also actively screen for new deals and coordinate this activity through the Commercial Advisory Group.

We have also created a new leadership and trustee advisory committee on innovation, another important coordinating step. This working group of deans and Johns Hopkins University and Medicine trustees along with the innovation committee co-chairs will provide guidance and oversight on the broader innovation efforts underway and will oversee the creation of the innovation hub to support entrepreneurship in the life sciences.
Recommendation Sixteen: Launch other programs to augment commercialization services.

Action: A range of initiatives and mechanisms to expand the commercialization function is underway or in the works. For example, the university has implemented an express license for faculty who wish to found a company based on JHU technology. This license requires substantially less time for negotiation, and we hope it will provide faculty and outside entrepreneurs with a user-friendly mechanism to license technology. We are securing the commitment of several law firms and other service providers who have agreed to donate time and resources to FastForward startups by keeping office hours and providing pro-bono services.

Likewise, FastForward plans to include a grant support capacity for faculty who are applying for Small Business Innovation Research grants and related awards. This is an important first catalyst for many university startups, and with proper industry mentorship, we can increase our yield of SBIR grants for JHU startups. We will partner with BioHealth Innovation, a public-private partnership that is focused on increasing life sciences commercial activity in Maryland and that offers a proven SBIR assistance program in which it pairs faculty with mentors who have in the past successfully received SBIR grants. The technology licensing operation has also launched a survey function that requests feedback from internal and external stakeholders each time they interact with the office. We view this as an important mechanism to gauge faculty, student, and external party satisfaction and align our commercialization programs with the interests of these key stakeholders.

Recommendation Seventeen: Expand entrepreneurship educational opportunities.

Action: Education is a central component of the JHTV initiative, and several initiatives are already underway to build on the existing programs offered by the university.

This past summer, the university launched the inaugural cohort of its entrepreneurship boot camp, with 70 participants including graduate students, faculty, and postdocs across 32 departments. The participants formed 22 teams and spent several days interacting with business professionals in practical workshops to learn essential topics in setting up a technology startup. The workshops

Figure 5: The first Johns Hopkins Entrepreneurship Boot Camp
received positive feedback (4.2 out of 5), and the boot camp concluded with a “shark tank”–style pitch and poster session in which the teams presented their business case to investors, entrepreneurs, and the JHU community. Some teams continued to work on their technology startup by participating in a business-model workshop, Innovation Factory, Discovery to Market, and other Carey Business School events.

In June 2014, the university officially became a participating school in the National Science Foundation I-Corps program for startup training. Six Johns Hopkins teams were accepted to the Fall 2014 regional I-Corps, while an additional company was accepted to the national NIH I-Corps program, which came with a $50,000 stipend. Both programs provide real world, hands-on training on how to effectively incorporate innovations into successful products, with a focus on identifying a solid product-market fit and building a viable business model. Overall, 10 JHU teams have benefited from the program since 2013.

Currently, JHU has eight teams participating in an Intro to I-Corps course that introduces the fundamental principles of the program in a shortened format, to appeal to investigators who are considering their options for commercializing a technology or product, whether through a startup or licensing arrangement. The JHU I-Corps projects have included team members from the Whiting School of Engineering, the School of Medicine, Bloomberg School of Public Health, Peabody, Applied Physics Lab and Carey Business School. The Johns Hopkins Technology Ventures office has provided instructors for the program as well as a cadre of relevant industry mentors, a required component of each team.

**Recommendation Eighteen: Offer entrepreneurship programming tailored specifically to students.**

**Action:** A newly created Commercialization Academy will provide students with relevant industry skills and experience. One aspect of the program run by JHTV will allow students to gain skills including IP analysis, marketing strategy, and competitive analysis of JHU technology. The program also will actively connect students to local startups looking for talent, an opportunity that will enable our undergraduate, graduate, and postdoc students to gain firsthand experience with the formation of a company devoted to technology commercialization. Finally, as noted earlier, a new program in the coming year will focus exclusively on funding student entrepreneurship projects and connecting students with entrepreneurship opportunities.
Recommendation Nineteen: Implement a set of policy reforms to improve incentives for translational and commercialization activities.

**Action:** The university has launched an Innovation Report Policy Committee, a group chaired by the vice provost for research and composed of faculty and staff, to consider the range of policy recommendations set out in the innovation report. The focus of this policy committee will be on exploring options and possibilities for reform in areas spanning conflict-of-interest rules, sponsored research industry policies, tenure and promotion criteria, use of name policies, and cost recovery policies, to name only a few. These topics all raise important questions for the university and will require careful, collegial debate and analysis across the university so that we continue our fidelity to our core academic, research, and service and clinical missions.

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<th>Denis Wirtz, Chair</th>
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<tr>
<td>Mike Amey</td>
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<td>Julie Gottlieb</td>
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<td>Christy Wyskiel, Secretary to the Committee</td>
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Table 2: Membership of Innovation Report Policy Committee

Recommendation Twenty: Take action to promote access to medicines around the world

**Action:** In 2011, a committee was established to review the university’s commitment to promulgating our inventions for the betterment of the world. Called the Dissemination of Discoveries to Advance Global Health Committee, it was chaired by faculty member Thomas Quinn, and in 2012 issued a report with 10 recommendations for the university in its translational and licensing efforts. This past year, the university established a group of faculty and staff to undertake regular assessments of our progress toward the recommendations of the report and identify areas of needed improvement.

Recommendation Twenty-One: Take action to protect the integrity of our research as we expand commercial contacts.

**Action:** We recognize that commercialization activities can place external pressures on university research. Without appropriate safeguards, the introduction of external financial pressures can create conflicts of interest that can compromise the conduct of research, the credibility of the scientific enterprise, and the safety of human subjects. We will be vigorous in protecting our core research enterprise and the values that undergird it. One of the areas of remit for the Innovation Report Policy
Committee will be exploring the state of our research integrity rules and procedures. When we enter into new external partnerships, this will be an area of ongoing monitoring and scrutiny as we develop our innovation initiatives in the months ahead.

**Recommendation Twenty-Two: Expand entrepreneurship infrastructure in the area of cores, transparency, and accelerators.**

**Action:** For startups in particular, having access to core facilities obviates the need for expensive capital equipment purchases, enabling the startups to use their resources in a nimble and streamlined way. A long-term ambition of the university will be to strengthen further the operation of our cores and work with groups across the university to implement a transparent and accessible website, available for internal and external stakeholders, who will be able to view the offerings across Johns Hopkins as well as the pricing for the various core facilities. This will build on work already completed to catalog our university wide core facility capabilities.

Finally, the university completed the first cycle of a health information technology accelerator that it co-sponsored with DreamIt Ventures and other Maryland partners (Northrop Grumman, BioHealth Innovation, the Economic Alliance of Greater Baltimore, the Maryland Department of Business and Economic Development, and Kaiser Permanente). Of the nine companies that participated in the 2014 cycle, five had a JHU affiliation. Each company received $50k in seed funding; was matched with mentors from leading entrepreneurs as well as legal, accounting, and administrative help; was connected to angels, venture capitalists, and industry partners; participated in a weekly curriculum; and received access to a collaborative work space, peer network, and access to DreamIt alumni. The next DreamIt Baltimore cycle will commence early in 2015, with investments from the Abell Foundation, BioHealth Innovation, the Economic Alliance of Greater Baltimore, the Maryland Department of Business and Economic Development, the University of Maryland, and Johns Hopkins University & Medicine.
Conclusion

These changes will take time to be fully realized. And, as noted, many of them will depend on the success of efforts to harness new partnerships and investments. And yet, even now at the outset of these amplified efforts, we are optimistic about the level of enthusiasm across our students and faculty for increased resources related to commercializing promising technology. More than 70 faculty and students attended the entrepreneurship boot camp, 16 startups and 79 university proof-of-concept projects have been supported by the Maryland Innovation Initiative, dozens of teams have participated in the Social Innovation Lab, and demand has continued to outpace supply for space in FastForward Homewood.

This interest extends to stakeholders outside the campus community as well. The university has already succeeded in drawing additional corporate and venture interest in our burgeoning ecosystem, with a $6 million new partnership with MedImmune and other new corporate deals with Roche, Novo Nordisk, and Toshiba; and an event hosted by Biogen Idec with Boston area investors in August 2014 and another co-hosted by Greenspring Associates to showcase JHU startups in December 2014. We also have received considerable interest from local service providers such as law firms, accounting firms, brand and design firms, and many of our corporate partners, who want to help support the startup ecosystem by offering an array of pro bono work and programming.

JHU also this year was represented on the Maryland Economic Development and Business Climate Commission by Christy Wyskiel, senior adviser to President Daniels and head of JHTV, to set forth our recommendations for ideas and programs that could further translational success and organic business growth in Maryland.

These are only examples of the efforts already underway. The university will press forward with these endeavors and so many more in the coming years, steered by the committee report and the ongoing guidance of faculty, students, and staff across the university—all with an eye to expanding our connection, lifting our discoveries, and strengthening, as never before, our impact around the world.