

STATEMENT OF

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BEFORE THE UNITED STATES SENATE COMMITTEE ON

SMALL BUSINESS & ENTREPRENEURSHIP

HEARING ON:

**“AN EXAMINATION OF CHANGES TO THE U.S. PATENT SYSTEM AND IMPACTS ON
AMERICA’S SMALL BUSINESSES”**

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Statement of Neil Veloso Johns Hopkins Technology Ventures

Chairman Vitter, Ranking Member Shaheen, and Members of the Senate Committee on Small Business and Entrepreneurship, thank you for this opportunity to testify on this important topic. I am Neil Veloso, Executive Director for Technology Transfer of Johns Hopkins Technology Ventures (JHTV). JHTV is the technology transfer, business development and start up formation arm of Johns Hopkins University (JHU). The views articulated here are mine and do not necessarily represent those of Johns Hopkins University.

America's academic institutions are the principal source of basic research that expands the frontiers of knowledge and produces discoveries that enhance our national security, strengthen our economy, improve health, and enrich the lives of our citizens. Each year since the late 1990s, universities have performed between 50% and 60% of U.S. basic research. In 2013, universities performed just over 51 percent of all basic research and almost 21 percent of applied research conducted in the United States.¹ Academic institutions are also the nation's leading centers for clinical and translational research, food and agricultural research, and cutting-edge engineering and computational science.

University research has greatly strengthened our nation's innovative capacity and economic competitiveness. More than half of U.S. economic growth since World War II has resulted directly from technological innovation, much of which stems from scientific, medical, and engineering research conducted at our universities.² Although the primary means by which university research results are disseminated is through training and peer-reviewed publications, conferences, consulting and other forms of open communication, our country increasingly benefits from university technology transfer. Technology transfer is the process by which fundamental discoveries are moved into the commercial sector for development into socially and economically beneficial products and processes.

University technology transfer's contributions to our nation were greatly enhanced by the passage of the Bayh-Dole Act in 1980, which allowed universities to retain the patent and licensing rights to inventions resulting from federally funded research. The enactment of that landmark legislation sparked a dramatic increase in university-to-industry technology transfer.

Federally funded university research has played a critical role in the development of the laser and its myriad applications, microprocessors, magnetic resonance imaging and later MRI applications, the CAT scan and PET/CT scanner, Doppler radar, GPS, bar codes,

¹ See <http://www.nsf.gov/statistics/natlpatterns/>.

² Robert Solow, *Technical Change and the Aggregate Production Function*. REVIEW OF ECONOMICS AND STATISTICS 39, no. 3 (1957): 312–20; see also Gordon Reikard, *Stimulating Economic Growth Through Technological Advance*, AMSTAT NEWS (Mar. 1, 2011), available at <http://magazine.amstat.org/blog/2011/03/01/econgrowthmar11/>.

web browsers, and hundreds of medicines and vaccines, to name just some of the most widely known examples.

Innovation, research and discovery are the lifeblood of my institution, Johns Hopkins University, and are interwoven in the fabric of the university. This is manifested in the work of Johns Hopkins Technology Ventures, which last year received over 500 invention disclosures, executed 171 license agreements and spun off 16 new startup companies around Johns Hopkins technology. For JHTV, patents are the primary currency in which we transact our business. Changes to the patent system have a very real impact on the university, its licensees and startup companies. As such, proposed changes to the patent system call for close analysis and balanced, fact-driven debate, particularly given that the evidentiary basis for sweeping patent reform has been called sharply into question.

The most recent survey by the Association of University Technology Managers (AUTM) shows that in 2014, U.S. universities executed nearly 6,200 licensing and options agreements with companies and were issued almost 5,900 U.S. patents. Thanks to these academia-industry partnerships, nearly 10,000 patented products that originated in academic research labs are now available to the public.

Research performed at U.S. universities in FY2014 led to the formation of 853 new start-up companies, doubling the number of university based start-ups created compared to 2005. Although these start-up companies provide economic benefits to the nation, they are especially important to the regions and states in which research universities are located; more than three-quarters of these new start-up companies had their primary place of business in the licensing institution's home state.

Johns Hopkins University's commitment to technology transfer and commercialization involves a focus not only on licensing of our discoveries to established companies but also on the incubation, formation and growth of startup companies, as well. The recent record of Johns Hopkins startups in attracting follow-on financing is impressive: in the past five years, JHU startups have raised over \$250 million dollars in subsequent investment. This support leads to stronger companies, sustained development and, ultimately, the creation of products and services that benefit society.

For JHTV, its licensees, and startup companies, a well- functioning and robust patent system is the key to our innovation ecosystem. A continuing challenge is JHU's management of pending patent applications. The time and money JHU expends on patent prosecution represents a thoughtful, informed commitment to a particular technology that must be balanced with the potential for successful licensing and new inventions or discoveries that would also warrant patent prosecution and protection. A patent system that is efficient and cost effective for its patent seekers will make JHTV more effective and efficient for its inventors as well.

As a patent licensor, Johns Hopkins University grants certain rights to its licensees: this can include the ability to make, use or sell products based on our patented discoveries,

the ability to sublicense to others and the right to pursue infringers. For licensees – particularly startup licensees –receiving these rights includes, among other things, the obligation to cover the cost of patent prosecution and protection activities. So just as the university had to balance the costs of pursuing patent protection with its potential benefits, those licensees must balance the costs of acquiring patent rights in the first instance versus the ability of those patents to provide meaningful protection for their products.

Beyond the effort of prosecuting and obtaining patents, changes to the patent enforcement system will have serious consequences for both university licensors and licensees. Fee shifting and joinder proposals in particular merit close attention given their potential effects on both university licensors and licensees. Changes that would significantly increase the overall risks and costs of legitimate patent enforcement would directly affect universities, startup companies, licensees of university research, and all other patent holders. Entities without extensive litigation budgets, including nonprofit universities, startups, small companies, and individual inventors, would be ill-equipped to operate in such an environment. The cost/benefit choices that university licensors and its licensees already make around patent prosecution would extend to choices made around patent enforcement.

In the areas of patent prosecution and patent enforcement, any potential changes to the patent system will affect the fundamental role of university technology transfer offices and the licensees with whom it seeks to translate academic discoveries for the creation of products that benefit the public. Accordingly, these proposed changes must be examined closely and analytically with the public benefit foremost in mind. An approach involving carefully targeted legislation, developed in the context of the changing landscape created by judicial and administrative actions, can effectively combat abusive patent practices while maintaining the capacity of our vigorous patent system.