

MYTHS

About Academia and Innovation

WEBINAR SERIES

Universities are becoming the new economic engine that drives innovation and technology transfer for commercial enterprises. The number of start-ups coming out of academia has increased 20% from 2011 to 2013. Institutions are now more adept at protecting intellectual property, spinning off new companies, licensing new technology and developing their own ventures. By attending this special webinar, you'll learn first-hand the ways WPI approaches moving technology from the bench to the marketplace – how it protects intellectual property, how it markets its technologies, and how it structures its licenses.

Tomorrow's technology is quietly developing in WPI's laboratories and in other universities around the country.



Keiller

"There's a lot of technology in schools we don't know about yet," according to **Todd Keiller**, Director, Intellectual Property and Innovation at WPI. Researchers keep quiet about early stage technology, because "once it's presented publicly, you can't protect it. If you can't protect it, there's no reason to invest in it."

Protecting intellectual property is part of what Keiller does – along with helping to develop, fund and market it, as he will explain during a Special Webinar Series presentation, **"Innovations from Academia: Myths vs. Realities," from 12:30 to 1:30 p.m. on Wednesday, Jan. 21, 2015.** To register, [click here](#).

He's focusing on "myths vs. realities," because there are plenty of myths about intellectual property (IP), innovation and academia's role. Here are some of them:

Myth 1: Universities don't create commercial products.

A survey by the [Association of University Technology Managers](#) found that in 2010, American universities licensed 4,200 new products and brought 657 new products into the marketplace.

While some schools stick to basic research, others, like WPI, focus on research that will produce products with commercial potential. In fact, WPI has much greater success with IP than the typical university.

Based on the national average, a school the size of WPI should produce eight to 10 new ideas, or "disclosures" in a year; instead, WPI produced 36 disclosures in the last academic year and had 16 in the current year before it was half completed. The school should sign two license agreements a year based on the national average, but had four signed before mid-year this year.

"We overachieve," Keiller said. "We have a small research base, but the number of new inventions and licenses signed is four to five times the national average for a school our size."

Why is WPI so prolific?

"Our curriculum is very project based," he explained. "Projects generate a lot of intellectual property. My office tries to translate those projects into commercial products."

While some products begin with student projects, others are based on research by faculty. For example, [VitaThreads, LLC](#) was founded in 2012 by biomedical engineering professors **George Pins** and **Glenn Gaudette** to make biopolymer threads and sutures for stem-cell delivery using Fibrin, a natural substance that forms as wounds heal.

Keiller's office guided the company from the laboratory to an incubator to new office space in downtown

Worcester, and helped it obtain a Small Business Innovation Research (SBIR) Phase I Grant Award from the National Institutes of Health. The company's focus shifted when it was determined that the technology could be used by plastic surgeons to close incisions without scarring. As this use has fewer regulatory obstacles, it is now the company's primary focus.

Keiller's office has also signed licensing agreements with large companies, including a just-completed license for a robotic inter-cranial surgical instrument.

Much of the technology developed updates "old school" technology. For example, WPI licensed a program that the Manufacturing Advancement Center in Worcester uses to train workers to use computer numerical control (CNC) programs.

Myth 2: Anything created in university labs should be available for free.

Grant money is often used for research, which may lead to development of a new product. Many people think that, as a result, such products should be available for free – especially if they are developed at public schools that are supported by tax dollars.

Grants can help advance research, but there are still many costs involved with bringing a product to market, Keiller said. The product may be licensed to a private company, which has to invest in producing and marketing the product. Licensing fees that go to the school are typically used to support additional research. The private company, meanwhile, creates jobs and, likewise, may invest some revenues into research.

In addition, inventors have a great financial incentive to commercialize their ideas. WPI has one of the most generous royalty-sharing policies available, giving 50% of any income, after legal expenses, to the inventor. WPI takes the risk in filing the

intellectual property and paying costs until a licensee is found.

Myth 3: Investment is unavailable for early stage startups.

While it is most difficult to find investors at the earliest stage of product development, academic institutions can sometimes help.

The [WPI Accelerator Fund](#) pays for the prototyping or proof-of-concept needed to make investment attractive to potential investors. The fund, which is supported by alumni and friends of WPI, makes investments in promising technologies and ventures through the [Tech Advisors Network](#), WPI's virtual incubator.

Myth 4: Software cannot be protected.

It is difficult to patent software, but software can also be copyrighted.

The problem, according to Keiller, is that U.S. patent law has not kept up with the pace of technological development. Patent laws were written when entrepreneurs were developing simpler products, such as potash and new tools. They don't work well when a product consists of lines of computer code.

There are also more patent applications than the U.S. Patent Office can process in a timely manner, so, even if an entrepreneur is able to qualify for a patent for software, "by the time you get a patent, you're on to the next thing."

Pharmaceuticals also present difficulties, according to Keiller, because "it takes so long to get through the regulatory process, by the time the company gets FDA (U.S. Food & Drug Administration) approval, there are only a few years of patent life left."

Myth 5: It's worth filing a patent just for the experience.

Filing a patent just for the experience is impractical because of the cost. It typically costs \$8,000 to \$10,000 to complete a U.S. patent application and thousands more for an international patent. Additional costs for filings and protection of IP can run to hundreds of thousands of dollars.

If an invention appears to have commercial appeal, Keiller said, WPI will pay for a provisional patent. If, over time, the product draws interest from investors, WPI will continue to invest in the patent process, but there has to be a potential licensee in the end who will make the long-term investment and pay back past patent expenses over time.

Myth 6: An innovative product ensures business success.

When a new product is developed, Keiller said, the inventor has two choices – starting up a business or licensing the product to a company.

Starting a business is expensive and risky. If the company is to succeed, it needs capital not only to produce the new product, but to market it. In addition, the company needs the right leadership to drive business growth.

If the inventor decides to license the product, Keiller said, "you have to ask yourself, 'What pain am I going to address?' You're disrupting the company's five-year development program. You have to find the right person in the company to give your product a fair evaluation."

Given the difficulty of starting a business or licensing a product, many new products never reach the marketplace.

"A lot of new products will fail," Keiller said, "but we give them a fighting chance. We hope the resources at WPI will increase the odds for success." ■