

IN THIS ISSUE

- Fostering Innovation and Entrepreneurship p.1
- Reinventing the Patent System p.1
- MTAs & CDAs p.2
- Inventor Spotlight p.3
- License Update p.4
- LSU OIPCD Co-hosts Start-up Boot Camp p.5

**TOMORROW'S
SOLUTIONS FROM
TODAY'S
DISCOVERIES**

FOSTERING INNOVATION AND ENTREPRENEURSHIP

The Office of Intellectual Property, Commercialization, & Development's (OIPCD) mission is to expedite the commercialization of inventions and intellectual property resulting from research and other academic activities conducted at LSU. While the invention's journey from the lab to the marketplace can be daunting, it can be very rewarding to the university and community, particularly when it results in a new company.

Statistics from the National Center for Entrepreneurial Technology Transfer (NCET2) comparing university and non-university start-ups show the former to be surprisingly resilient. The NCET2 finds that about 8 percent of all university start-ups go public, dominating the 0.07 percent for other U.S. enterprises—a 114-fold difference! Furthermore, 68 percent of university start-ups created between 1980 and 2000 remained in business in 2001, while 90 percent of non-university start-ups created during this period had *failed* by 2001. More than 400 university start-ups based on federally funded R&D are created

nationally each year. Some of the most influential companies, such as Google, Netscape, Genentech, Lycos, Sun Microsystems, Silicon Graphics, and Cisco Systems all stem from university-based research. LSU boasts one to two start-ups per year in addition to its three to five licenses per year.

As economic development becomes a greater part of the university's overall mission, the LSU OIPCD is establishing a stronger support system for faculty and entrepreneurs interested in starting a company based on LSU intellectual property. We are also strengthening ties with the Baton Rouge business community as well as LSU's internal assets such as the Louisiana Business & Technology Center and the Louisiana Emerging Technology Center as they strive to spur economic development. Our goal is to create a setting that will foster both innovation and an entrepreneurial spirit at LSU.

*Peter J. Kelleher, PhD
Associate Vice Chancellor*

REINVENTING THE PATENT SYSTEM

On September 16, 2011, the Leahy-Smith America Invents Act was signed into law. The provisions of the new law will be phased-in beginning September 16, 2011, with the act being fully implemented by March 16, 2013. However, the impact and repercussions of these changes will most likely not be evident in the immediate future. At this time, the Act does not seem to have a significant impact on LSU's procedures for evaluating its inventions and filing patent applications. To ensure patentable LSU intellectual property is duly protected, as always, LSU employees are encouraged to submit their technology disclosures early, before submitting a manuscript for publication or making a presentation. As each new provision of the act becomes effective, LSU employees will be notified of any changes to LSU's procedures.

WHAT?

What is a technology disclosure form?

A **technology disclosure** is a legal document formally providing the university with details about an innovation you have developed while employed at LSU.

WHY?

Why submit a technology disclosure to OIPCD?

To ensure appropriate dissemination of innovations created at LSU and to fulfill obligations pertaining to innovations developed using federal grants and other research funding.

WHO?

Who should submit a technology disclosure?

All LSU faculty and staff are required to disclose their innovations to the university.

MATERIAL TRANSFER AGREEMENTS

A number of unwanted outcomes can result from a materials transfer (e.g., supplying or acquiring a sample for study). The more stark outcomes include the possible loss of ownership of the intellectual property and legal liability for harm caused by the material. A Material Transfer Agreement (MTA) is a contract defining the terms of the transfer and the obligations of the receiving party in a transfer of proprietary material. In addition to retaining the control of the intellectual property and protecting the provider from liability resulting from the recipient's use, MTAs restrict the use and distribution of the material.



LSU policy dictates that MTAs must be used for incoming and outgoing materials, and must be signed by the associate vice chancellor for Intellectual Property, Commercialization and Development.

MTAs may be used to transfer any type of tangible material, including some software (by far the most common transferred items are biological materials and chemical compounds). Different materials can result in quite different MTAs; similarly the different objectives of academic institutions and industry can result in quite different MTAs for the same material. International law can also present a number of points that must be negotiated. Common issues that may come up between LSU and another entity include:

- The definition of the materials including modifications and derivatives
- Restrictions regarding the recipient's use of the materials in funded projects
- Restrictions on ownership and/or use of research data and resulting inventions
- Restrictions on publication and disclosure of research results
- Indemnification/Liability
- Confidentiality
- Venue of Law

These obstacles are almost always easily overcome through open communication between the two entities about possible differing objectives. If you plan to send or receive research materials, please contact the OIPCD as soon as you can to prepare an agreement appropriate for your situation before providing your materials to or receiving materials from another institution.

CONFIDENTIALITY/NONDISCLOSURE AGREEMENTS

A confidentiality or nondisclosure agreement (CDA/NDA) is a contract governing the disclosure of proprietary information from one party to another. CDAs are necessary to protect proprietary information and to preserve intellectual property rights. CDAs restrict the use and dissemination of proprietary information and protect the provider from liability resulting from the recipient's use of the information.

LSU policy dictates that NDAs are to be used when receiving or providing confidential information. While the agreement is between LSU and the organization, the responsibility of maintaining confidentiality ultimately lies with the researcher.

Issues similar to those associated with Material Transfer Agreements may need to be negotiated, particularly with industry and international institutions. These issues include indemnification/liability, venue of law, duration of confidentiality obligation, description of confidential information, and defining the purpose of the agreement.

As with MTAs, such issues are almost always easily overcome through open communications.

INVENTOR SPOTLIGHT

The Department of Pathobiological Sciences in LSU's School of Veterinary Medicine is a particularly productive area for new technology; a number of new vaccines have been developed by PBS faculty.



Dr. Shafiqul Chowdhury, a molecular virology professor at LSU, has developed a recombinant Bovine Herpes Virus Type 1 (BHV-1) vaccine. BHV-1 is a pathogen that can cause a severe respiratory tract infection known as infectious bovine rhinotracheitis (IBR). IBR may lead to additional complications such as abortion in pregnant cows and a substantial decrease in milk and meat production. BHV-1 is also a contributing factor in Bovine Respiratory Disease Complex, also known as "shipping fever." BHV-1 establishes a lifelong latency following the primary infection. Periodically throughout the life of the animal, the latent virus reactivates due to immunosuppression or stress. The virus sheds at the infection sites, which facilitates its transmission to other cattle. Both IBR disease and BRDC cause considerable losses for the cattle industry worldwide and cost the U.S. cattle industry at least \$1 billion annually.

Dr. John Hawke, professor of aquatic animal health, has developed a new vaccine that protects fish against *Francisella sp.*, an emergent bacterial pathogen that causes acute to chronic disease in warm water cultured and wild fish species such as tilapia. Over the years, *Francisella* has been implicated as the cause of mortality in warm and cold water species of fish in U.S.A., Taiwan, Costa Rica, Latin America, Hawaii, Norway, Chile, and Japan. Fish raised in high density environments, such as tilapia farms, are more susceptible to outbreaks of the disease. This is an immersion vaccine which provides fish producers a more effective and economical alternative to injection or oral vaccines.



Dr. Gus Kousoulas, professor of virology and biotechnology and veterinary medicine and director of the Division of Biotechnology & Molecular Medicine, has developed a live-attenuated vaccine that can protect against herpes simplex infections, without the risk of producing more virulent viruses. The live-attenuated vaccine developed by Dr. Kousoulas cannot enter into neurons and establish latency, while they can generate protective immunity against herpes infections. Unlike other herpes vaccines, it is anticipated that this vaccine could also be used for therapeutic treatment of recurrent herpes infections in people previously infected with these viruses.

QUICK FACTS

LSU received over **\$120,000** in license income in 2011.

Five new licenses were executed at LSU in 2011.

28 U.S. Patent applications were filed through LSU in 2011.

VISIT OUR
WEBSITE
[www.lsu.edu/
intellectual_property](http://www.lsu.edu/intellectual_property)

LICENSE UPDATE

Cayman Chemical Company recently licensed rights to produce and sell a soluble and stable form of human 5-lipoxygenase (5-LOX) invented by Professors Marcia Newcomer and Sue Bartlett and graduate student Nathaniel Gilbert of the Department of Biological Sciences. 5-LOX is the enzyme that initiates leukotriene biosynthesis, whose overproduction may lead to inflammation, asthma, and allergic rhinitis. This novel synthetic form has a longer half-life than naturally occurring 5-LOX and can be expressed in *E. coli*. It is suitable for a number of applications including high throughput screening of 5-LOX inhibitors, structural analysis of the enzyme's active site, designing inhibitors based on the three-dimensional structure of the enzyme's active site, synthesis of LTA4, and as a reagent for inflammation research. The inventors' manuscript on the novel 5-LOX enzyme, [The Structure of Human 5-Lipoxygenase](#) was published in *Science* January 14 of this year. It was also the topic of Colin Funk's *Science Translational Medicine* article, [Leukotriene Inflammatory Mediators Meet Their Match](#) January 19 of this year.

VeroScience LLC. Nearly 30 years ago, Drs. Anthony Cincotta and Al Meier began their research at LSU that has led to the discovery and commercialization of a new anti-diabetes drug, Cycloset™. Cycloset™ is marketed by VeroScience, a company founded by Drs. Meier and Cincotta to develop and commercialize novel, practical, and effective therapies for chronic debilitating human diseases such as Type 2 diabetes, metabolic syndrome, autoimmune disease, and cancer through interdisciplinary basic research. Cycloset™ was approved by the FDA in 2009 and is currently being sold by prescription as stand-alone or add-on treatment for Type-2 diabetes in adults. More information about VeroScience and Cycloset™ can be found at <http://www.veroscience.com/>.



The OIPCD conducts technology transfer informational seminars for groups within the LSU community and hosts seminars presented by professional technology transfer organizations. If you would like OIPCD to give a talk to your group or if you would like to be added to our e-mail list for scheduled seminars, submit your name and e-mail address to oip@lsu.edu.

LSU OIPCD Co-Hosts Start-up Boot Camp

This semester the LSU Office of Intellectual Property, Commercialization & Development co-hosted its inaugural “Start-up Boot Camp.” This boot camp was aimed towards university researchers and inventors interested in starting a new



company based on products of their research. TechTransfer Tactics, a provider of technology transfer educational resources, developed the series. So, what exactly is “Start-up Boot Camp?” It is a series of informational sessions that provide detailed step-by-step guidance researchers and inventors will need to launch their business while at the same time ensuring it has the greatest chance of

successfully navigating the challenges ahead.

Over six weeks, a mix of professors, researchers, and graduate students from LSU, LSU AgCenter, PBRC, and Southern attended the following sessions:

Session 1 – Early Decision Making

Session 2 – Money Matters

Session 3 – Creating a Solid Business Plan

Session 4 – Funding Options and Opportunities

Session 5 – Pitching Techniques: Get What You Want

Session 6 – Gauge Economic Impact and Outcomes

Each session began with an informational presentation on one critical aspect to launching a start-up followed by a guest speaker. A guest speaker was available to offer any related advice based on their career experiences as well as answer any questions from aspiring entrepreneurs. Guest speakers included: Jason Boudreaux, Technology Business Consultant, LBTC; Joe Lovett, Managing General Partner, Louisiana Fund 1; Roy Keller, Director, LA Technology Transfer Office, LBTC; and Terry Jones, Managing Director, RIO. The Q&A session also gave researchers and inventors the opportunity to learn about other upcoming events in the community. Peter Kelleher from LSU’s intellectual property office and Wade Baumgartner of the LSU AgCenter intellectual property office were also available to answer questions from the audience.

The next Start-up Boot Camp is planned to take place in the spring 2012. For specific dates and other details, check the OIPCD website, www.lsu.edu/intellectual_property.



Are you a researcher preparing to publish your research or give a public presentation?

Contact our office prior to your publication or presentation to ensure potentially valuable intellectual property is protected.

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Technology Commercialization News is a bi-yearly publication developed and produced by the LSU Office of Intellectual Property, Commercialization & Development to highlight the progress being made in commercializing LSU's research and the policies and procedures that guide the technology transfer process at LSU. We encourage every LSU employee involved in research and businesses interested in licensing LSU's technologies to review and to familiarize themselves with these policies and procedures provided in detail on our website, www.lsu.edu/intellectual_property.

We welcome your questions about intellectual property and your suggestions for future newsletter articles.

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**TOMORROW'S
SOLUTIONS
FROM
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DISCOVERIES**

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LSU RESEARCH &
ECONOMIC DEVELOPMENT

Office of Intellectual Property, Commercialization & Development