

# Children's Hospital of Philadelphia

## Research Development Report

### Reporting Period:

July 1, 2013 - June 30, 2014

### Commercial Development of Research

The Office of Technology Transfer (OTT) is a resource created within CHOP's Research Institute to implement The Children's Hospital of Philadelphia Patent Policy, execute agreements related to corporate sponsored research, and to commercialize intellectual property created as a result of the research enterprise. The Office was established in 1996 and is comprised of two major components: technology licensing and commercialization and industry-sponsored research, each of which is led by an Associate Director. The mission of the Office of Technology Transfer's commercialization team is to protect, then transform the ideas, ingenuity and expertise of researchers and medical staff into valuable scientific and medical products and services, thereby promoting CHOP's position as a world leader in the advancement of healthcare for children. Licensing objectives include increasing the quality and quantity of invention disclosures through an intensive investigator education program and increasing the number of licenses through vigorous marketing efforts.

In recent years, OTT made several changes to processes and procedures aimed at improving customer services and increasing the odds of commercializing valuable technologies to improve the health of children in Pennsylvania and beyond. The office and CHOP are now reaping the rewards through increased investigator interaction and cooperation as well as increased marketing efforts.

In fiscal 2013, OTT evaluated 50 new invention disclosures and filed 119 US and international patent applications. OTT has facilitated creation of three more startup companies, including initial creation and negotiations for Spark Therapeutics, a startup company based on the gene therapy work of Dr. Kathy High, et al. The pivotal clinical trial for the first indication: treatment of Lieber's Congenital Amaurosis will begin in fiscal 2014. CHOP is investing a significant amount of capital in the company in the amount of \$50M. Between commercialization, industry-sponsored research, and materials and data sharing agreements, OTT negotiated and executed over one thousand contracts that enable scientific research in one form or another.

The licensing/commercialization team works proactively with recipients of health research formula funds to identify those research results which have commercial potential and for which patent protection should be sought. Using the mechanisms that are already in place to evaluate inventions, the team determines the best approach and seeks partners for licensing the potentially important and useful technologies. Our many commercialization partners include the University City Science Center, Nanotechnology Institute, and many of the region's other academic institutions.

## **Research Licensing Agreements**

The Office of Technology Transfer has developed and maintained several standard licensing agreements. The agreements are as follows:

- Biological Materials License Agreement
- Commercial Evaluation License Agreement
- Nonexclusive Patent License Agreement
- Nonexclusive Patent License Agreement
- Exclusive Patent License Agreement
- Patent Option Agreement

## **Training Students and Health Professionals**

The Children's Hospital of Philadelphia has many ties with the University of Pennsylvania, Drexel University and with other academic institutions. Many undergraduates, graduate students, medical students and postdoctoral fellows conduct research in the laboratories and research programs of the Children's Hospital of Philadelphia; many of these and others, including nursing students, also receive clinical training at Children's Hospital. The Children's Hospital of Philadelphia works to ensure that it has an appropriate training environment for these individuals. Research training takes place mostly within the research group, but the Research Institute is developing a series of initiatives designed to provide postdoctoral fellows and others with training and skills in areas such as responsible conduct of research, presentation and writing skills, and grantsmanship.

## **Commercial Research Development Training**

The Office provides a number of services to help CHOP inventors better understand technology transfer, including such topics as patenting, marketing, and licensing. OTT staffers regularly meet with investigators to discuss research projects and to have in-depth conversations related to invention disclosures, patentability opinions and office actions from the US Patent & Trademarks Office. OTT participates in monthly Research Institute investigator meetings and occasionally present short overviews of specific technology transfer topics (e.g., Material Transfer Agreements: Why You Need One) and the institution has hosted an intellectual property attorney to provide a patent primer to Research Institute investigators. Other tools regularly provided by the Office to investigators include an electronic Discovery Disclosure Form, an electronic Inventor's Assignment Agreement, and hard copies of the AUTM Education Series "An Inventor's Guide to Patents and Patenting".

OTT continues to create and update web-based educational materials and tools to assist our investigators relative to intellectual property protection and licensing. The goal is to create an easy and efficient electronic environment to enable investigators to access the tools at any time as well as to enable them to focus on their research. OTT has initiated a monthly column in an internal CHOP newsletter that focuses on specific commercialization topics.

The Office of Technology Transfer has an active internship program for post-doctoral fellows seeking training in commercialization of academic intellectual property. OTT also works with Penn's Wharton School of Business students and the Penn Biotech Group on discreet market research and business development projects.

### **Outreach to Businesses Regarding Recent Research Developments**

The Office engages in corporate outreach that targets the major multinational biopharmaceutical companies as well as smaller biotechnology companies. Regularly scheduled meetings with licensing and new business development counterparts in industry are held to discuss the research programs at the Research Institute and to review the technologies available for license.

The Office of Technology Transfer works with faculty and Research Administration to foster mutually beneficial links between the Institute's investigators and industry. OTT's Division of Corporate Alliances is responsible for negotiation of all clinical trial and industry-sponsored research agreements. In addition, the Division executes confidential disclosure agreements that enable CHOP investigators to discuss their research with industrial colleagues while protecting intellectual property rights. When investigators wish to exchange research materials with colleagues outside the institution, the Division enters into Materials Transfer Agreements on their behalf. These agreements outline the materials to be exchanged, how they are to be used and stored, and outline the framework for publication in peer-reviewed journals as well as intellectual property protection.

In early 2007, the Institutional Intellectual Property Advisory Committee (iiPAC) was formed to: provide advice and guidance on invention disclosures, patent prosecution, and other IP-related decisions. It is also engaged in reviewing the policies and procedures associated with institutional intellectual property. Committee members include representatives from OTT, Research Administration, Office of General Counsel, and most importantly, CHOP researchers. The Charter was renewed in 2010 and the committee has evolved into a vibrant, active group offering valuable assistance to the Office of Technology Transfer.

The Office uses a database for managing business contacts and grouping companies contacted by technology. Other venues for corporate outreach include the aforementioned networking fairs at annual AUTM, LES, BIO, and other conferences.

### **Research Development Collaboration**

Research Institute faculty members are routinely engaged in collaborative research projects with investigators at other research centers or institutes. These relationships occasionally result in joint-inventorship, the outcome of which is assignment to multiple institutions of joint rights in that intellectual property. OTT utilizes a standard Interinstitutional Agreement (IIA) that outlines the respective rights and obligations of the co-owning institutions. To date, nearly thirty IIA's have either been completed or are being negotiated, demonstrating CHOP researchers' propensity for strong collaborations outside the institution.

OTT encourages licensees to fund further research in inventors' labs when we enter into an exclusive license with a pharma or biotech company. This can speed the timeline for product development as well as provide much-needed research funding for the program. This enables support of high-paying technician jobs and support of the local, national, and international businesses that provide research equipment, tools, and reagents to the investigators.