

Drexel University

Research Development Report

Reporting Period:

July 1, 2013 – June 30, 2014

Commercial Development of Research

Drexel's Entrepreneurship & Technology Commercialization Office commercializes Drexel intellectual property. The key strategies include 1.) license technology to start-up or existing companies, 2.) assist faculty and other inventors with start-up companies which includes mentoring and sharing the dynamics and critical success factors for starting a new company and 3.) develop relationships with early stage venture capital organizations and with industry to explore mutual opportunities.

Drexel's Entrepreneurship & Technology Commercialization Office actively sought to establish relationships that would result in the adoption of Drexel technologies by commercial partners to bring inventions to the marketplace. The overall goal of Technology Commercialization was to set in motion an interactive process that aims to provide significant benefits to the inventors, the university, the business community and the general public.

At Drexel, commercialization activities are university wide, driven by the philosophy that research and the "research enterprise" are integral and essential enhancements to the education that the university provides. Start-up companies provide exciting opportunities for the faculty and develop paths to bring discoveries from laboratories to the market. It provides relevant industry experience to the faculty and also represents a potential for significant economic reward to faculty, university and shareholders. In addition, it creates business and employment opportunities for the local community. However, these are high risk ventures; about one in ten will be successful. These ventures are challenging to finance especially in the last three years. Most investors would not be interested funding a new venture without professional management. Often complex negotiations are required between different institutions with very diverse expectations and needs. In addition, there are real and perceived individual and institutional conflicts of interest which must be managed effectively.

Research shows that majority of funding for taking research from laboratory to market comes from three funding sources: corporations, federal government and angel investors. Drexel focused on these organizations for its commercial activities.

The following were the basis for Drexel's plan to cultivate commercial development of research:

- Worked with industry leaders, venture capitalists and university researchers to create new product ideas for commercial development.

- Determined and improved the commercial viability and success potential for new inventions.
- Fostered a team spirit among industry, university researchers and research administration to formulate strategies for success in the commercial marketplace and the medical community.
- Encouraged the development of an environment for creativity, innovation and entrepreneurship.
- Incentivized the research community through shared rewards with business and industry.
- Helped the University, through its technological prowess, to participate in economic development for the well-being of the community, the region and the nation by increased business competitiveness in a global marketplace.

Key strategies were:

- Promoted relationships with industry to foster translation from the academic setting to the commercial sector and to facilitate local economic development
- Licensed technology to start-up or existing companies;
- Assisted faculty and other inventors to establish start-up companies which included mentoring and sharing the dynamics and critical success factors for starting a new company
- Developed relationships with early stage venture capital organizations and with industry to explore mutual opportunities.

Research Licensing Agreements

Drexel University and Drexel University College of Medicine continue to use the research licensing agreements developed by the Research Office. The listed forms and Sample Agreements are available on the Technology Commercialization page on Drexel's website.

IDF

- [Invention Disclosure Form \(IDF\)](#)
- [Instructions for IDF](#)
- [Software Disclosure Form](#)

NDA/CDA

- [Mutual Non-Disclosure - Drexel](#)
- [Mutual Non-Disclosure Agreement - DUCOM *](#)

MTA

- [Materials Transfer Agreement - Drexel](#)
- [Materials Transfer Agreement - DUCOM](#)
- [Materials Transfer Agreement \(receiving materials\) - Drexel](#)
- [Materials Transfer Agreement \(receiving materials\) - DUCOM](#)

SRA

- [Sponsored Research Agreement - Drexel](#)
- [Sponsored Research Agreement - DUCOM](#)

Training Students and Health Professionals

Drexel University now claims a leadership role in creating technological solutions to solve societal problems in the 21st Century. This bold statement reflects not only the accomplishments of its faculty and leadership during the recent past, but more importantly, their collective vision going forward. Research is an integral part of Drexel's educational philosophy. Drexel is committed to "use-inspired" research and is poised to respond to novel opportunities for research, scholarship and technological development. The synergies provided by bringing the health sciences of medicine, nursing and public health together with the technological prowess of the engineering units have yielded dramatic successes in translating the questions of clinical care and epidemiology into new answers for the community. Drexel University College of Medicine (DUCOM) is the largest private medical school in the country, with an enrollment of more than 1,000 medical students and 200 in the biomedical graduate student program. The research training programs span traditional disciplines in Biochemistry, Biology, Molecular Biology and Genetics, Microbiology and Immunology, Neuroscience, Pathology, Pharmacology and Physiology, Biomedical Engineering, Mechanical Engineering, Chemical Engineering, Materials Engineering, & Electrical Engineering and Physics, as well as unique, recently developed programs in Molecular Medicine, Neuroengineering and Physical Cell Biology. Combined, these programs take full advantage of Drexel's strengths in engineering, medicine and biology and are complimented by affiliations with research laboratories. Such a diverse and prolific research environment serves as an exciting backdrop for a multitude of opportunities in undergraduate and graduate education and research training.

The *Professional Studies in the Health Sciences Program*, with an enrolment of over 650 students offers a variety of programs that help better position students and professionals for careers in the health sciences. *Premed Programs* include: Interdepartmental Medical Sciences, Interdisciplinary Health Sciences, Master of Biological Science, Medical Science Preparatory, Drexel Pathway to Medical School, and Evening Post-Baccalaureate Pre-Medical. These programs are structured to prepare students for entry into medical, dental, podiatric and veterinary and other health professional schools, as well as advanced degree programs. *Clinical research programs* include Clinical Research Organization and Management, Certificate Studies in Clinical Research, Clinical Research for Health Professionals. These programs expand the knowledge of standards and management of benchtop research, with a special focus on drug development. *Forensics programs* (Master of Forensic Science and Master of Criminalistic Science) train students in the real-world application of forensic science. *Laboratory technician programs* (Master of Pathologists' Assistant and Master of Histotechnology) train individuals to work alongside pathologists. This may include careers in the allied health sciences, clinical laboratory science, tissue diagnosis and structure.

The Drexel College of Medicine offered several summer research opportunities

Drexel University College of Medicine's Minority Summer Research Training Program provided

underrepresented minorities with an opportunity to enhance their understanding of health-related sciences at a nationally recognized, doctoral/research - intensive nonprofit institution. The program's primary objective is to identify and engage underrepresented minorities in the health and research professions through a ten-week summer fellowship at Drexel University. The ten-week research experience is conducted in an academic/research environment consisting of mentors, professional role models, postdoctoral fellows, high school, undergraduate and graduate students.

Research interns are mentored by Drexel faculty, who work in various disciplines including, but not limited to: Biochemistry, Molecular and Cell Biology and Genetics, Neuroscience, Microbiology and Immunology, Pathobiology, Pharmacology and Physiology, Surgery and Biomedical Engineering. Drexel faculty and members of their laboratory guide students through the planning and practice of daily research experiments and activities. Each student is assigned to work in a specific laboratory for the duration of the program. Under the direction of the laboratory supervisor, the student works on a unique project related to the research goals of that particular laboratory. Students are integrated into the daily laboratory routine, participating in laboratory meetings and gaining exposure to many different facets of the research process.

Summer Undergraduate Research Fellowships (SURF) for undergraduate students interested in a career in biomedical research providing them with an opportunity to greatly enhance their analytical and technical scientific research skills, while earning a stipend to support their participation. Research interns are mentored by Drexel Med faculty, who work in various disciplines including biochemistry, molecular and cell biology, neuroscience, microbiology, immunology, pathobiology, pharmacology and physiology.

Drexel Med faculty and members of their laboratories guide students through the planning and practice of daily research experiments and activities. Each student is assigned to work in a specific laboratory for the duration of the program. SURF students typically work on a unique project related to the research goals of that particular laboratory. Students are integrated into the daily work of the laboratory, participating in laboratory meetings and gaining exposure to different facets of the laboratory's research. Mentors help students apply their current knowledge and skills and assist them in making the connection between laboratory experiences and their academic studies. Successful applicants are matched with a participating faculty member according to their research interests.

At the end of the summer, students gave a specific, conference-styled presentation describing their research project to an audience of Drexel Med faculty and graduate/medical students. The students met periodically with their mentors to prepare and review the content of their oral presentations. In addition, the students returned on October 3, 2013 to present their research at Discovery 2013, the annual day of research at Drexel University College of Medicine. The College's annual research day exhibited more than 300 posters on topics as diverse as infectious diseases, cancer, spinal cord repair, behavioral neurobiology and many more.

Summer Research Internships (HSSRI) for students from area high schools with an interest in biomedical research provided an opportunity for students to enhance their understanding of current biological/biomedical principles and cultivate their analytical/technical skills in a

research environment.

Research interns were mentored by Drexel Med faculty who work in various disciplines including biochemistry, molecular and cell biology, neuroscience, microbiology, immunology, pathobiology, pharmacology and physiology. Drexel Med faculty and members of their laboratory guided students through the planning and practice of daily research experiments and activities. Each student was assigned to work in a specific laboratory for the duration of the program. Interns typically worked on a unique project related to the research goals of that particular laboratory. Interns were integrated into the daily work of the laboratory, participated in laboratory meetings and gained exposure to different facets of the laboratory's research. Mentors helped students apply their current knowledge and skills and assisted them in making the connection between laboratory experiences and their academic studies.

Medical Student Summer Research Program at Drexel University College of Medicine offered ten Summer Research Fellowships for first-year medical students. The purpose of this program is to identify opportunities for first year medical students to engage in full-time research under the direction of a member of the faculty. Students worked on their projects during the summer. Fellowship recipients were required to submit a summary report of their research experience at the conclusion of the research project and presented their work at the College of Medicine's annual day of research, Discovery Day.

The Third Annual Medical Student Research Day was held on March 13, 2014, on the Queen Lane Campus. Posters were presented from 1-4 p.m., followed by a keynote lecture by Jean Bennett, MD, PhD, tenured professor of ophthalmology and cell and developmental biology, and vice chair for research in ophthalmology at the University of Pennsylvania (Penn) School of Medicine.

Dr. Bennett's lecture was followed by a reception and awards presentation. There were 64 posters submitted. Judging was done for three separate categories of research:

- MD/PhD students who work full time on their research between Years 2 and 3 of medical school
- Basic science research
- Clinical research

The Drexel Materials Science and Engineering Summer Institute (Materials Summer Institute) is a fee-based one-week summer camp focused on the areas of nanotechnology and sustainability as they relate to the fields of energy, biotechnology, and electronics. This camp is for rising juniors, seniors, and recent high school graduates looking to deepen their knowledge about materials science and engineering

Materials Camp, a weeklong academic camp that features highly interactive, lab-based activity tailored to individual student interest is tailored to high school students in their junior and senior years. The *Summer Engineering Experience at Drexel* (SEED) gave high school students an opportunity to gain hands-on experience and knowledge about the world of engineering.

The Drexel Center for Biotechnology and Virology Research (DIBVIR) located in Doylestown, PA shares space and resources with the Hepatitis B Foundation (HBF) and Research Institute in the Pennsylvania Biotechnology Center. Faculty, staff and students of Drexel University carry out biomedical research in a mission-oriented environment. Coursework at DIBVIR was offered in conjunction with the Masters and Ph.D. programs in the Department of Microbiology and Immunology of Drexel University College of Medicine. Courses included Molecular Virology, Experimental Therapeutics, Emerging Infectious Diseases, and Laboratory Techniques in Molecular Biology. Summer research opportunities for undergraduates at DIBVIR were available through a partnership with the HBF, in addition to training fellowships for recent graduates. Teaching and educational programs were offered in the form of courses, workshops and colloquia that expanded the educational opportunities for the biomedical workforce in the northern suburbs of Philadelphia.

Two formal research training programs were offered at the Drexel University College of Medicine: 1) 4th year program in research AAMC platform: Training of medical students in clinical research; 2) Fundamentals of Medical Research: Training of residents, fellows and faculty in research.

Commercial Research Development Training

Drexel University established the Charles D. Close School of Entrepreneurship, which is one of a very small number of freestanding schools of entrepreneurship in the nation. Building on an outstanding foundation of curriculum, programming, and thought leadership at Drexel, the Close School is the engine driving the expanded culture of entrepreneurship envisioned by the University's strategic plan.

Students from every college and school at Drexel are able to connect through the Close School to curricular, extracurricular and experiential programs that support entrepreneurial efforts. The Close School also serves the regional entrepreneurial and business community through thought leadership in entrepreneurship research.

Drexel students benefit from several Close School programs, including an Entrepreneurship Living-Learning Community, where like-minded students live in a residential environment dedicated to entrepreneurship programming; Entrepreneurial co-ops, offering mentoring and financial support to students who spend a co-op period working in their own business; and a "Launch It" course that provides students with guidance and seed money to "de-risk" their own business model.

The faculty consists of 1) joint appointments with Drexel professors across the university whose work incorporates entrepreneurship and innovation, and 2) a "clinical faculty" of practicing entrepreneurs whose involvement will deepen Drexel's connection to the corporate and entrepreneurship communities.

The Charles D. Close School of Entrepreneurship is also home to the Laurence A. Baiada Institute for Entrepreneurship, an already successful catalyst and incubator for student business ideas.

The Laurence A. Baiada Institute for Entrepreneurship bridges education and entrepreneurship by linking research, coursework, experiential learning, and entrepreneurial thinking with practical guidance for budding entrepreneurs. The Institute's mission - underscored by a deep interdisciplinary nature - to develop entrepreneurial leaders and foster the creation of successful technology ventures within the Drexel community distinguishes it as one of the nation's leading entrepreneurship programs. The Baiada Institute translates the Close School of Entrepreneurship's groundbreaking curriculum into disruptive ideas led by innovative companies, created by Drexel students from all academic disciplines.

The Institute focuses on Entrepreneurship in Action, offering mentoring programs, business incubation, student clubs, and unique opportunities that advance entrepreneurs, such as Seminars in Entrepreneurial Excellence.

Students from every academic discipline are encouraged to participate through interactive workshops, entrepreneurial courses, and an annual business plan competition and entrepreneur conference.

The Baiada Institute is home to students, staff, and alumni that can be leveraged as during work to get launched. The resources below are also available.

The ExCITE Center

Drexel University's *Expressive and Creative Interaction Technologies (ExCITE) Center* is a hub for enabling teams of faculty, students, and entrepreneurs to pursue highly multi-disciplinary collaborative projects. ExCITE project participants come from engineering, fashion design, digital media, performing arts, computer and information science, product design, and many other fields.

The Lindy Center

The Lindy Center for Civic Engagement promotes the ideals of social responsibility and public service by facilitating community-based experiential learning for students, faculty, and staff. The Lindy Center collaborates with schools and colleges across the university to guide scholarship and research in the areas of civic engagement and community-based experiential learning.

The URBN Center

The URBN Center is the home for programs in the Antoinette Westphal College of Media Arts & Design. Students enjoy newfound collaboration with industry professionals, in addition to other Drexel schools and colleges.

Drexel Entrepreneur Association

The Drexel Entrepreneur Association (DEA) is a student-run organization that focuses on preparing students to be entrepreneurs in the future. The organization's two main focuses are: the development of interest and passion within students, and opportunity creation and connection.

The DEA holds a variety of programs that link students to available opportunities for growth in the region, including panels, guest speaker events, networking events, and competitions. The DEA also works closely with the Baiada Institute for Entrepreneurship to connect students with

opportunities such as business plan competitions, local venture seed programs, workshops, and more. Members of the DEA hone their business plan creation skills and have ample opportunities to network with regional entrepreneurs - which can lead to mentorship and internship opportunities.

Graduate Entrepreneurship Club

The Graduate Entrepreneurship Club (E-club) works closely with the Baiada Institute for Entrepreneurship to provide all Drexel graduate students with the necessary resources and networking opportunities - both within and outside the Drexel Community -- to help them start businesses.

To foster this entrepreneurial spirit, the E-club:

- Hosts series of events with hot topics for startups and lessons from experienced entrepreneurs. All events are followed by networking receptions which give the opportunity to students to connect with the key people for financing/advising issues.
- Holds general membership meetings to discuss entrepreneurial ventures, form teams to participate in business plan competitions, and lead future entrepreneurs to the right resource direction.
- Publicizes "Entrepreneurial Inter-View" articles with real-life lessons by successful entrepreneurs throughout the world

Companies that incubate in the Baiada Institute have access to all that the state-of-the-art facility has to offer. Businesses are given dedicated office space and everything that comes with it, like desks, phones, and Wi-Fi.

Baiada is also home to numerous collaboration and conference rooms, for company meetings or brainstorming sessions with other Baiada entrepreneurs.

Technology & Infrastructure Resources

- Phones
- Desks
- Wi-fi
- Projectors
- Video screens
- Collaboration labs
- Conference rooms

Legal

Every entrepreneur needs access to legal resources to help during the creation and growth of their startup. The types of legal advice and services that entrepreneurs must consider include:

- Company formation: legal entity creation, founder's agreements, employment agreements
- Intellectual property protections: patents, copyrights, trademarks
- Basic contracts: including strategic vendor contracts, customer contracts, and leases

- **Capital:** investor agreements when raising capital

Law Resources at Drexel

The *Entrepreneurial Law Clinic* at the *Drexel University School of Law* provides legal advice for Philadelphia start-ups by matching Drexel Law students with a select number of innovative start-up company clients.

Accounting & Taxes

Every entrepreneur needs access to accounting and tax resources to help with the creation and growth of their startup. The types of accounting advice and services that entrepreneurs must consider include:

- City, state and federal accounting requirements for your legal entity structure
- Tax implications of granting equity and of fund raising
- Sales tax requirements
- Record-keeping and documentation requirements including accounting software

Funding

The Baiada Institute is committed to helping student entrepreneurs secure funding. Funding can help accelerate the launch of a business, extend a team, and grow sales and marketing efforts. Funding can include loans, government grants, and equity capital. Crowdsourced funding is another option for many new ventures.

The Close School of Entrepreneurship offers classes designed to help students to assess how much capital they need and develop the right investor development strategy. The Close School's courses are open to students from all academic disciplines. Students in the Close School's *Launch It!* class receive \$2,000 in seed funding (per team) to develop their idea and begin work on a new venture.

Entrepreneurship Co-op

We recognize that many undergraduates have already started their own companies. To encourage this entrepreneurial spirit within our student body, the Close School, in collaboration with the Steinbright Career Development Center, offers to all Drexel undergraduate students the chance to use their own company as their co-op experience. Students who qualify for this opportunity will receive \$15,000 in support of their ventures.

Outreach to Businesses Regarding Recent Research Developments

Drexel engaged with a variety of local groups, including the Chamber of Commerce and Select Greater Philadelphia, to develop regional best practices and approaches to commercializing the fruits of the region's research. This process was actively facilitated and supported by the Commonwealth of Pennsylvania, whose support for local economic development through the Ben Franklin Technology Partners (BFTP) and BioAdvance tangibly support new businesses. In addition, they supported innovative programs that focus on developing and commercializing cutting-edge technologies.

Drexel continued its participation in Pennsylvania BIO and the Technology Commercialization Group, an initiative of Ben Franklin Technology Partners of Southeastern Pennsylvania. The Group works with companies to develop new products for commercialization. As a partner in the University City Keystone Innovation Zone, Drexel is assisting in commercialization efforts of biotechnology enterprises. University City Science Center (SC) is the largest urban research park in the U.S. whose stakeholders include virtually all of the non-profit research institutions in the region including Drexel University.

The SC developed a program dubbed “QED,” that is designed to provide support to research in the region. The QED Proof-of-Concept Program provides business development support for academic researchers developing early-stage life science technologies with high commercial potential. As angel investors, venture capitalists, and established industry increasingly invest in later-stage enterprises, it has become especially difficult to accelerate early-stage innovations in the life sciences. The QED Program launched in early 2009, will continue to participate in its multi-institutional efforts, soliciting life science R&D project proposals from the leading research centers across the Greater Philadelphia region. The key goal is to retire the business risk in these early-stage projects, increasing their attractiveness to follow-on investment by established life science companies and private investors.

Drexel University and Drexel University College of Medicine continued to build strategic relationships and identified mutual research interests for future partnerships.

Drexel University College of Medicine offers the advantage of having a business organization, the Clinical Research Group (CRG), to support the business side of research while investigators focus primarily on the science.

Research Development Collaboration

The Drexel University College of Medicine established Regional Initiatives in Clinical Research with the following institutions and will continue the collaborative efforts with: Fox Chase Cancer Center, Abington Hospital, Doylestown Hospital, Temple University, Jefferson University, University of Pennsylvania, St Christopher’s Hospital for Children and St Peter’s Healthcare System.

Drexel University has an ongoing relationship with Good Shepherd Rehabilitation Network (in Allentown) through which Drexel co-op students are being placed and biomedical devices being tested in a collaborative venture that gives Drexel access to a large rehab patient population, and gives Good Shepherd access to state-of-the-art developments in Biomedical devices.

In cooperation with the Ben Franklin Technology Center of Southeastern Pennsylvania, DIBVIR continues as a Ben Franklin Innovation Center, providing research and educational resources to commercial and academic scientists working together to advance partnerships in the areas of medical biotechnology and to promote the development of a highly skilled workforce in the Greater Philadelphia region.

Drexel Coulter Translational Research Partnership Program

Drexel University School of Biomedical Engineering oversees the *Drexel Coulter Translational Research Partnership Program* that promotes, develops, and supports innovations to improve patient care. The program provides mentoring, project management, and funding to promising translational projects with the goal of moving innovative technologies to clinical application through commercialization. The ultimate goal of this partnership is to develop health care solutions that address unmet or underserved clinical needs and lead to improvements in patient health care. Typical projects focus on applying developed technologies to solve an unmet or underserved clinical need, or to change a medical practice. Project proposals are evaluated on the basis of their clinical merit, their potential health care impact and significance, their timeline and pathway to commercialization, and most importantly their potential for obtaining further financial investment to translate the particular solution to healthcare.

Drexel's Clinical & Translational Research Institute (CTRI)

Drexel recently established the Clinical & Translational Research Institute (CTRI) to foster translational, or "bench to bedside," research throughout the University. The CTRI builds on existing strengths within Drexel, fostering collaborative translational research, while taking steps to remove impediments to the process of research translation.

The CTRI aims to substantially elevate the landscape in which biomedical research is conducted, therapeutic discoveries are made, and advances in clinical care are developed into therapeutic and commercial opportunities. The Center embraces disciplines in the fields of medicine, biotechnology, drug discovery and development, engineering, business, entrepreneurship, law and public health.

Drexel is committed to training our students to be competitive in a changing biomedical and health care environment. The CTRI maximizes this strength by creating a sustainable institutional enterprise, developing a coordinated core technology infrastructure, and generating seed funding to launch critical research initiatives.

The CTRI's key objectives are:

1. To elevate the overall scope, infrastructure, and support for basic and clinical biomedical and life sciences research.
2. To provide a clear organizational center that will bridge different schools within Drexel University and support interdisciplinary research.
3. To increase the opportunities for Drexel physicians to engage in clinical and translational research.
4. To continue to develop innovative educational programs that complement translational research and that lead to new opportunities for faculty and students.

2014 International Symposium on Molecular Medicine and Infectious Disease at the Drexel University College of Medicine.

The 2014 Symposium was the third in the Annual Symposium Series of the College's Institute for Molecular Medicine and Infectious Disease. The Symposium serves to highlight the

scientific achievements of the Institute's faculty, postdoctoral fellows, graduate students, and research staff relating to molecular mechanisms, diagnosis, treatment, and prevention of infectious, inflammatory, oncogenic, and metabolic disease. The Symposium also recognizes seminal scientific achievements in the form of Drexel Prizes in Infectious Disease, Immunology, and Translational Medicine. This year, two additional awards were introduced that include the Drexel Prize in Cancer Biology and Drexel's Hilary Koprowski Prize in Neurovirology. At the heart of the Institute for Molecular Medicine and Infectious Disease is the performance and promotion of basic scientific discovery, and the advancement of these discoveries by utilizing innovative collaborative interactions within academia and the pharmaceutical industry to translate today's discoveries into tomorrow's products to diagnose, prevent, and treat human disease. Many of the discoveries made by members of the Institute for Molecular Medicine and Infectious Disease and collaborators will be promoted through the efforts of the new Clinical and Translational Research Institute.

Drexel University Research Day 2014

Members of the Drexel University community participated in the celebration of research, innovation, scholarship and creativity with a day of posters (over 400) and presentations at the Daskalakis Athletic Center on April 10, 2014.

Discovery 2013

Drexel University College of Medicine held an annual day of research on October 3, 2013. The College's annual research day exhibited more than 300 posters on topics as diverse as infectious diseases, cancer, spinal cord repair, cardiovascular disease, behavioral neurobiology and many more. Alumni, faculty and staff, students and guests were invited to view posters and meet with the presenters followed by an afternoon of oral presentations. The keynote speaker, Donald Ingber, M.D., Ph.D., founding director of the Wyss Institute, and the Judah Folkman Professor of Vascular Biology at Harvard Medical School and Boston's Children's Hospital, presented "Programmable Nanotherapeutics and Organs on Chips."

4th Annual College of Arts and Sciences Research Days

From rising sea levels and access to healthy foods, to postpartum depression and zero-tolerance policies, there was no telling what one could learn at the College of Arts and Sciences' 14th Annual Research Days. After the success of the previous year's new oral presentation category, this year's event featured TWO DAYS of research, with the first reserved for oral presentations and the second for poster presentations. Graduate and undergraduate students conducting research in the humanities, sciences or social sciences participated in this event.

Translational Medicine and Applied Biotechnology Workshops

The Translational Medicine and Applied Biotechnology Workshops provided a venue where researchers from various disciplines met to attend evening symposia. Under the tagline, "promoting bench to bedside research," this symposium series brings together clinicians, basic scientists and engineers at all levels to brainstorm and collaborate on new approaches to specific health topics. At these symposia, speakers (clinicians, basic scientists and engineers) presented their research. The floor was opened for a lively discussion by faculty, researchers and students. These workshops increased faculty and researchers' awareness of the resources available across

the various Drexel campuses. The Working Group organized interdisciplinary scientific workshops including two networking events held on February 11, 2014 and February 26, 2014 including researchers from Drexel University's College of Engineering and College of Medicine. A "Biomedical Imaging Symposium" was held on June 30, 2014. These events offered a great opportunity to coordinate, exchange, and disseminate research information.

Drexel University, Children's Hospital of Philadelphia, and Hebrew University Research Initiative

Drexel University, Children's Hospital of Philadelphia, and Hebrew University launched a research initiative. An event held in January, 2014 was the symposium on "Advancing Health Care for Children", organized jointly by The Children's Hospital of Philadelphia (CHOP), Drexel University (DU), and Hebrew University (HU). The symposium brought together researchers with complementary expertise from the three institutions and provided a series of opportunities for sharing new results and ideas with the ultimate goal of forming collaborative "Dream Teams" in translational pediatric health care. The plenary sessions provided broad overviews of research at each location, and lively breakout sessions allowed discussions of on-going projects. Concept papers for joint projects were prepared to respond to an RFP for innovative translational research targets that address unmet needs in pediatric healthcare with the potential for commercialization.