EMORY UNIVERSITY | Office of Technology Transfer

Annual Report 2013

Technology Transfer By The Numbers

A Decade of Research Achievement

$4.4B
Sponsored Research Funding

$3.1B Federal Funding

$288.7M Corporate Funding

Ideas
31,901
Grants awarded

Knowledge
31,172
Publications

Training
18,196
Graduate and Professional degrees awarded

Fiscal Year 2013

Disclosures — 213
213 disclosures
Five year average of 218

Material Transfer — 702
702 material transfers; All time high
Turn around time of 12 days

IP Protection — 176
176 U. S. patent apps; All time high
18 issued U. S. patents

Marketing — 137
137 confidentiality agrmts; All time high
1,193 technology briefs mailed

Agreements — 52
52 licensing agmts; 3 start-ups
All time high; Five year average of 42

102313

All numbers fiscal year 2004 thru 2013 except
Publications which is calendar year 2003 thru 2012 and Graduates which is academic year 2004 through 2013.
Sponsored research funding comprised of six sources: federal, state, private, corporate, university, and foreign.

EMORY UNIVERSITY

Office of Technology Transfer

Progressive

... Ambitious, Dedicated, Talented

Todd Sherer, PhD
Assoc. VP for Research,
Executive Director

Innovation is Alive at Emory

Academic technology transfer finds itself in the midst of intense national scrutiny and is now routinely contemplated as a solution to employment and funding declines. The global financial crisis, patent reform and litigation, research funding cuts, and attacks on the Bayh-Dole Act are all contributing to a rapidly changing landscape. Locally, there are unprecedented financial pressures on universities due to economic factors, health care reform, and tuition decline, resulting in a need to identify alternative income sources.

Since its passage over 30 years ago, the Bayh-Dole Act has proven instrumental

EIDD & DRIVE:
Bridging the Valley of Death

Today, one would be hard pressed to find a list of elite research institutions that doesn't include Emory University; Emory ranks among the top in the world as a research university, especially in the field of medicine. The Emory Institute for Drug Development (EIDD), Emory's premier drug development institution, is one of the reasons why. Founded in 2009 by an Emory chemistry professor and co-inventor of the widely proliferant HIV drug Emtriva®, EIDD has the state of the art facilities and exceptionally qualified staff needed to stay at the top of the cutthroat and unforgiving drug industry.

Drug Innovation Ventures at Emory, LLC (DRIVE), EIDD's sister institution, is Emory's latest weapon in the drug creation fight. Launched in June 2013, DRIVE is a novel approach to overcoming the toughest stage of drug development: the aptly named "Valley of Death," where hundreds of potential drugs stall out each year before clinical trials. DRIVE, with its close ties to EIDD but the independence to behave and operate as a private biotechnology company, gives Emory the business and regulatory expertise needed as well as the capacity to license developments from Emory or even outside sources. This partnership is an unprecedented method of making the endeavor of developing drugs more efficient and commercially favorable.

New Frontier for Drug Development

EIDD and DRIVE together expand Emory's development capabilities with its aforementioned ability to license creations from EIDD or from other developers. Using either its own funds or capital raised from outside investors, DRIVE can efficiently quicken the development cycle by licensing drug developments directly, shortening the supply chain between R&D and market availability. This combination is often unheard of across the biotechnology industry and could serve as a model for peer institutions. The symbiotic relationship between EIDD and DRIVE suggests that more efficient ways of drug development exists over the status quo.

Already, the EIDD-DRIVE one-two punch is in effect for compounds that could treat dengue fever and hepatitis C. EIDD's top-tier resources and staff, coupled with DRIVE's unique public-private approach, promises that Emory University could not only be at the vanguard of research universities but of the drug development industry as well.

Teamwork

... Alliance, Collaboration, Partnership

TI:GER:
The Next Generation

The Technological Innovation: Generating Economic Results, or TI:GER program, is a unique collaboration between Emory University and the Georgia Institute of Technology (GA Tech) that brings together business, law, and science. TI:GER organizes students into teams comprised of two GA Tech MBA students, two Emory Law students, and a PhD candidate in the field of science or engineering.

During the TI:GER program, students are directly involved in the innovation process and working together to bring discoveries to the marketplace. Teams are challenged with the task of preparing a commercialization strategy and business plan based around the PhD candidate's research. One of the hallmarks of the program is that the economic, regulatory, and legal issues are considered prior to the research being completed. These considerations can then be incorporated into the research plan and commercial development strategy.

The two year program includes multiple components, ranging from classroom instruction and guest lectures, to internships and networking.

Tyler Dutton, an Emory Law student in the program, explained that TI:GER helps students learn about and apply patent law, contract law, venture capital, angel investors, company valuation, pitch strategies, the business model canvas, and many other interrelated concepts. Dutton truly appreciates the skills he has been able to develop, saying, "I knew that TI:GER was a unique program and I would learn valuable skills, but the biggest surprise has been the level of skills, especially business skills, I have developed."

Rohan Vora, a current GA Tech MBA student in the program, appreciates the involvement of the local startup community in the program. Vora credits their involvement as a huge component of the program's success. Beyond engaging with the local startup community, Vora highlights the multi-disciplinary nature of the program as the biggest and most challenging aspect.

The diverse makeup of participants in the TI:GER program, as well as its proven local, national, and international impact, will no doubt continue to serve as a draw for Emory and GA Tech students.

Determination

... Conviction, Dedication, Persistence

ACTSI:
Partnership in Action

The Atlanta Clinical and Translational Science Institute (ACTSI) is a multi-institutional partnership with the goal of improving both clinical research and translational science (a cross-disciplinary effort of finding real world applications for medical research) across the Atlanta area and the nation as a whole. Founded in 2007 through a $30.9 million grant from the National Institutes of Health (NIH), the Emory-led alliance includes Emory University, The Georgia Institute of Technology (Georgia Tech), and Morehouse School of Medicine (MSM) and synergizes the strengths of the three institutions: healthcare and biomedical research, biomedical engineering and computation, and diversity and community engagement expertise, respectively.

An Emory Innovation

ACTSI is a complex organization with a straightforward philosophy: "Community, Discovery, and Training." This philosophy translates to an institution that from its inception has prioritized the creation of an Atlanta-based home for "clinical and translational investigators," the education and training of future researchers, the study of health inequality on the local and national scale, and the development of the infrastructure needed for medical research plus the research's subsequent communal applications.

So far, ACTSI's efforts have lead to several impressive accomplishments, including research and funding that has lead to breakthroughs like the first human hand transplant in the United States' Southeast (performed at the Emory University Hospital). The accomplishments of ACTSI won attention and praise from sources such as Governor Nathan Deal, who noted that "The ACTSI has been an extremely successful research partnership that positions Georgia as a leader in improving access to new discoveries that improve health outcomes for all its citizens." Finally, last August, ACTSI reaped the much deserved fruits of its labors: an NIH renewal of ACTSI's nearly $31 million grant, ensuring that the organization remains a productive and impactful mainstay of the research field for the near future.

Creative

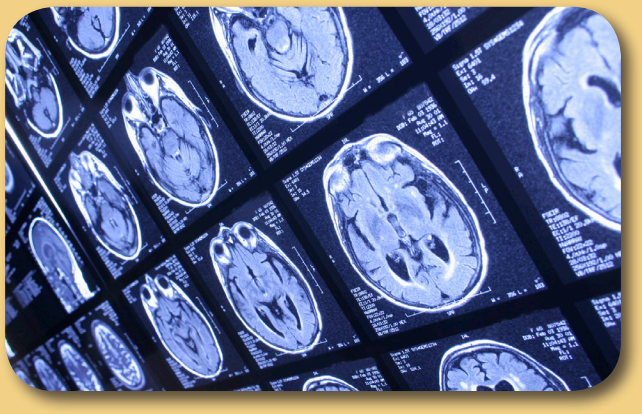
... Inventive, Enthusiastic, Proactive

ENTICe:
An Interesting Proposition

The advent of neuromodulation, the therapeutic alteration of neural activity via an implanted device, has revolutionized the treatment of neurological and neuropsychiatric disorders. Emory has long been at the forefront of this revolution with pioneering research on the pathophysiology of Parkinson's disease, techniques for deep brain stimulation (DBS) in treating psychiatric disorders (e.g., major depression), and the use of DBS for epilepsy and dystonia. The success of these programs has propelled the expansion of neuromodulation-related research, which now spans the Departments of Neurosurgery, Neurology, Psychiatry, Rehabilitation, Biomedical Engineering, Neuroscience, and Psychology as well as the Yerkes Primate Center and our colleagues at Georgia Tech.

Emory is now prepared to take the next step. By bringing together these clinicians, researchers, and engineers into a single center focused on developing these discoveries into practical solutions and products. This new center is called the Emory Neuromodulation and Technology Innovation Center (ENTICe). The goal of ENTICe is to advance the understanding and effectiveness of neuromodulation in order to reduce the burden of neurological and psychiatric disorders. The key to its success is the creation of an organization and environment that nourishes synergistic interaction among basic neuroscientists, engineers, and clinician scientists.

With an eye toward eventual transfer and commercialization, ENTICe will bring investment, resources, integration, and coordination to the groundbreaking work already underway. This interdisciplinary program, with both technical and theoretical work, will be poised to propel the field forward towards novel discoveries, technology, and devices.



in recognizing federal patent policy as an integral part of U.S. competitiveness. Its beauty lies in its alignment of ownership and control of patent rights to create market incentives for universities, researchers, and companies to invest in patenting, licensing and developing new technologies.

Technology transfer is not perfect. After all, we work at the riskiest of all stages in the innovation pathway, where funding and resources are the hardest to secure. The odds that any particular technology will make it to market are low, and figuring out how to improve those odds has not been easy.

Despite these challenges, Emory is exceling at innovation. Discussions and activities all across campus are focused on better ways to strategically leverage our resources to catalyze innovation. In this year's annual report, we highlight five of these initiatives: EIDD, DRIVE, TI:GER, ACTSI, and ENTICe. These and other unique programs are significantly transforming Emory's approach to commercializing its discoveries.

We, in OTT, look forward to participating in these conversations and partnering with the leaders of these initiatives for greater impact. While our focus is often on negotiating license agreements, this is simply a means to an end. The end game is moving technologies to the market for the benefit of humanity.

EMORY UNIVERSITY | Office of Technology Transfer

Director's Office

Todd Sherer, PhD
Associate VP for Research, Executive Director

Susanne Hollinger, PhD, JD
Director, License & Patent Strategy

Kevin Lei, MS, MBA
Director, Faculty & Start-up Services

Linda Kesselring, MBA
Operations Director

Connie Newsome
Senior Program Associate, Executive Assistant

Licensing

J. Cale Lennon, III, PhD, MBA
Director, Licensing

Philip Semprevio, II, JD
Licensing Associate

Lisa Matragrano, PhD
Marketing Associate

Cory Acuff, PhD
Senior Licensing Associate

Panya Taysavang, MBA
Licensing Associate

Carol Lowenhaupt
Compliance Associate

Cliff Michaels, PhD
Licensing Associate

David J. Giannantonio, MS, JD
Contract Specialist

Emory Patent Group

Randi Isaacs, JD
Patent Counsel

Jim Mason, MS, JD
Patent Counsel

Winsome Dunn, MBA
Patent Manager

Administration & Finance

Lauran Fechte
Senior Financial Analyst

Maritta Allison
Senior Accountant

Tundra Ivy
Senior Administrative Assistant

Ashley Myers, CPT
Program Associate