



University of Colorado

Boulder | Colorado Springs | Denver | Anschutz Medical Campus

TECHNOLOGY TRANSFER OFFICE

TECH TRANSFER

Annual Report 2013-14

Founded in Boulder in 1876, the University of Colorado has developed into a premier teaching and research university with four campuses: the University of Colorado Boulder, the University of Colorado Colorado Springs, the University of Colorado Denver and the University of Colorado Anschutz Medical Campus. With nearly 59,700 students, over 4,900 full-time instructional faculty members and an additional 1,200 research faculty members across the four campuses, CU is the largest institution of higher education in the state of Colorado.

CU research faculty secured more than \$861M in sponsored research funding in fiscal year 2013-14, a figure bested only by FY2009-10, when one-time federal stimulus dollars helped fuel research awards of \$884M. Researchers at CU's Anschutz Medical Campus received nearly \$426M in sponsored research funding. CU-Boulder researchers received over \$412M in sponsored research funding; CU Denver researchers received over \$13M and UCCS received over \$9M.

www.cu.edu/techtransfer

Fiscal Year 2013-14 Summary

In the past fiscal year, CUTechTransfer saw a remarkable increase in all of our activities, particularly license agreements, as the economic recovery spurred more companies to turn to outstanding CU research innovations to grow their product pipelines.

Looking back on the past decade-plus of growth, CUTechTransfer has developed a strong team and has benefitted from significant support from the community. Technology transfer staff and CU researchers have been trained and mentored by outstanding professionals in the legal community on patent work and corporate governance. CU also has a rich community of faculty entrepreneurs who have a foot in both academic and industry worlds, and have taken time to mentor new faculty and students in entrepreneurship. The “pay it forward” culture that exists within and outside university walls has been a tremendous asset to technology transfer staff and faculty entrepreneurs. All four CU campuses are also located in top ten entrepreneurial communities for tech startups (Boulder, Denver (including Aurora) and Colorado Springs) according to the Ewing Marion Kauffman Foundation. Support from Colorado’s Advanced Industries Accelerator and organizations like Innovation Center of the Rockies and the Colorado Institute for Drug, Device and Diagnostic Development have amplified the impact of technologies that otherwise might not have moved beyond the lab bench.

CUTechTransfer recognizes and celebrates our community for their contribution to the success and growth of the technology transfer office. In 2001, CU had 20 exclusive licenses in force; by the end of the last fiscal year, this was over 150 licenses, each of which represents products garnering private-sector investment to move towards real-world impact. A subset of these licenses represent products already on the market, which have generated over \$3.2 billion in sales – while the royalties received by CU are a small fraction of that, we can be proud of the tremendous impact of CU innovations.

Last year was also a time of accelerating change in many industries. Public research institutions face significant challenges as federal research funding plateaus and state support is projected to decline. CUTechTransfer staff is increasingly engaged in intellectual property management supporting collaborative innovation, an important activity that accelerates the impact of fundamental research discoveries. As faculty increasingly look to industry for research funding, technology transfer services are key to open innovation; industry partners want their academic collaborators to understand and manage intellectual property rights, information, material data and discoveries appropriately. Through this process, research groups, including graduate students, become more prepared to engage effectively with collaborators outside of the institution’s walls.

Looking ahead, CUTechTransfer will begin a new stage in our evolution, working closely with campus research administrations to craft a strategic vision for technology transfer services that is aligned with industry research strategies. To be successful, we will rely on continued support from our community in Colorado’s front-range technology ecosystem.

Warm regards,

Kate Tallman, Associate Vice President, Technology Transfer

Portfolio Snapshot July 1, 2014

U.S. Patents in Force	403
U.S. Patent Applications in Prosecution	346
Exclusive Licenses in Force	180
Non-exclusive Licenses in Force	197
Active companies created based on CU IP	113
Companies in which University License Equity Holdings, Inc. (ULEHI) holds equity	71

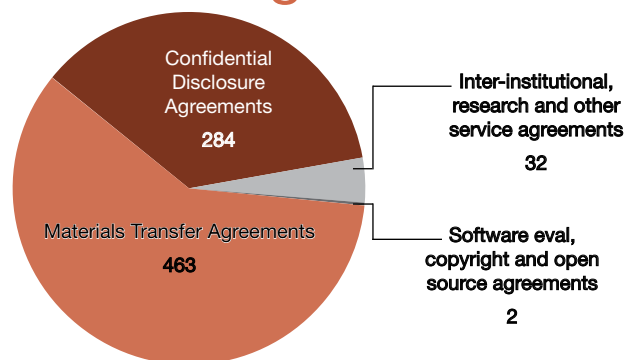
TTO Performance FY2013-14

Invention Disclosures	250
New Patent Filings	90
Follow-on Patent Filings	227
U.S. Patents Granted	51
Total Options & Licenses	57
Exclusive Options & Licenses	43
Non-exclusive Licenses	14
Start-up Companies Formed from CU IP	9
Service Agreements Executed	781
Revenue (in millions)	\$4.3
Patent investment (in millions)	\$1.32

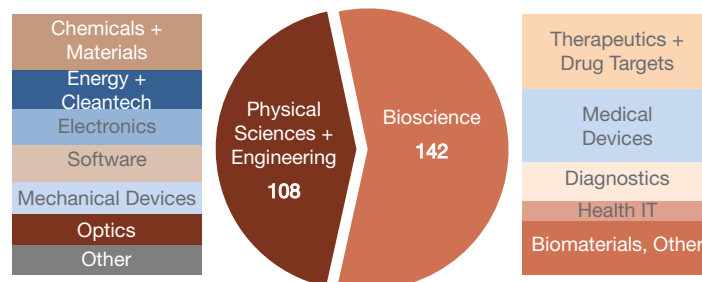
TTO Expenses FY2013-14

Salaries, Benefits, Students	\$ 2,440,650
General Operating Expenses	232,701
System/UCB Overhead	250,679
Building Rentals	190,442
Patent Investment/Maintenance	1,319,652
Innovation Center of the Rockies	75,000
ULEHI Management Service Fee	39,290
Proof of Concept Programs	510,834
Total Expense	\$ 5,059,248

Service Agreements



New Inventions



CU Startup Sustainability

In the last 20 years, 141 companies have been formed based on CU IP. 28 are known to be non-operational.

Of the 113 companies known to be operating,

- 96 have headquarters or research operations in Colorado
- 19 have received CU Technology Transfer Office Proof of Concept investments
- 33 have received matching grants under the State of Colorado's Advanced Industries Accelerator and Bioscience Discovery & Evaluation Grant programs
- 8 have "gone public," becoming publicly traded companies (through an IPO or a reverse merger)
- 19 have been acquired by public companies (including seven of the above eight that have gone public)

CU Startups (FY2013-14)

BioElectric Bioelectrochemical water reconditioning for oil and gas production

Clear Creek Networks Flexible, secure networking communications for electrical grids

edTRESX Software platform supporting individualized curricula and student learning objectives

EnteroTrack Non-Invasive diagnosis and monitoring of esophageal disease

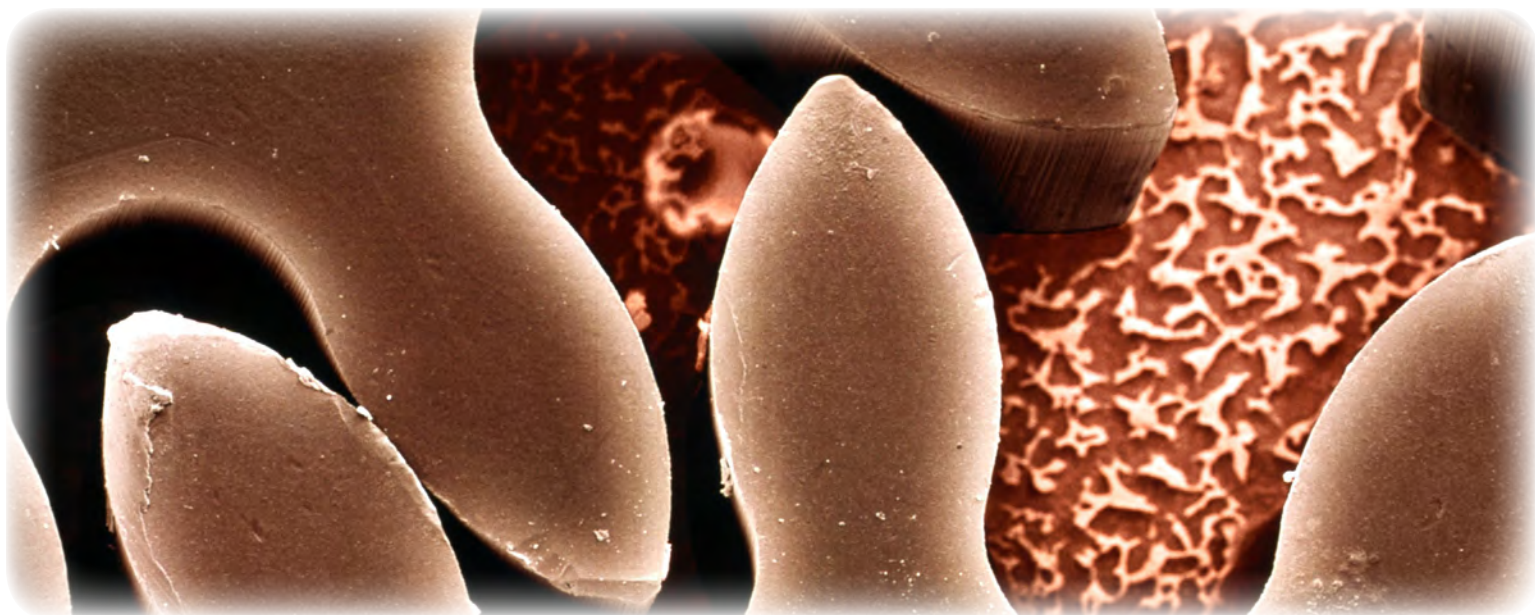
Galaxy Ophthalmics Implantable medical device to help prevent loss of vision resulting from glaucoma

Mile High Ophthalmics Ophthalmic device for enhanced precision in cataract surgery

Ocugen Novel biotherapeutics to treat eye diseases

OcuTherix Non-invasive glaucoma treatment device

Recreo Pharma Resistance-modifying agents to combat antibiotic resistance



Grants/Gifts	\$ 5,287,534
Federal Grants	20,400,000
Seed/Bridge	1,500,000
Series A	2,000,000
Series B	12,310,111
Series C/D/E/F/other	24,310,000
State funding	500,000
SBIR/STTR	2,320,855
Other	1,470,000
Total Financing	\$70,098,500

Major Financing Events for CU Startups

Based on ~25 transactions, companies created based on CU technology secured approximately \$70 million in financing in FY2013-14. Compared to other years, FY2013-14 saw a lack of acquisitions and mergers, and somewhat decreased venture financing (an area where CU Tech Transfer is growing its support for startups). Cumulatively, CU startups have raised a total of over \$6.2 billion. This year's financing events were led by a \$15M DOE grant to ION Engineering, an \$11M financing round for MedShape, \$10M in new funding to SomaLogic, and significant financings of Globelimmune, EndoShape and others.

Success Stories

The CU Technology Transfer Office presented its annual awards in spring 2014 to university researchers and companies who represent best practices in commercialization of university technologies. This year's award recipients are developing several new diagnostic and medical imaging tools, as well as research tools enabling fields from quantum computing to nano-manufacturing; their stories illustrate the impact of successful technology transfer.



Robert Doebele, MD, PhD
Inventor of the Year,
CU Denver | Anschutz

Dr. Doebele (medical oncology, University of Colorado Hospital) has worked with TTO since 2012 to commercialize two novel companion diagnostics to guide therapy for NSCLC patients, both of which are currently being licensed for development by a large molecular diagnostics company.



Henry Kapteyn, PhD
Margaret Murnane, PhD
Inventors of the Year, CU-Boulder

Drs. Kapteyn and Murnane, both physics professors, develop ultrafast lasers and x-rays, which have important applications in research on natural processes and in the visualization of other nano-scale processes for the development of nano devices. In 1994, Kapteyn and Murnane founded KMLabs to commercialize their work and make their innovations available to academic and industry researchers.



Steve VanNurden
Business Advisor of the Year

VanNurden is President and CEO of the Fitzsimons Redevelopment Authority. He came to Colorado in 2012 from the Mayo Clinic, where he established MayoClinic.com, managed a venture portfolio, and oversaw a technology licensing and commercialization enterprise. VanNurden's experience in new enterprise formation, investing, and commercial development has been readily available and invaluable to TTO and to CU faculty members working towards commercializing CU research.



Anushree Chatterjee, PhD
Prashant Nagpal, PhD
New Inventors of the Year,
CU-Boulder

Drs. Chatterjee and Nagpal (chemical and biological engineering) have developed a platform technology for fast, reliable, high-throughput and cost effective single-molecule sequencing of nucleic acids; an important step in the development of new diagnostic tools for personalized medicine, as well as in rapid identification of DNA sequences that allow bacteria to develop drug resistance. Chatterjee and Nagpal are working with TTO to develop a commercial pathway for this technology.



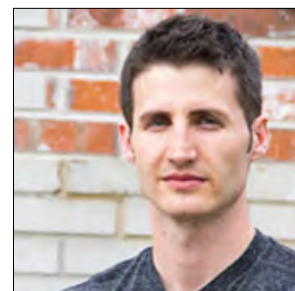
Janusz Hankiewicz, PhD
New Inventor of the Year, UCCS

Dr. Hankiewicz, a UCCS research associate, developed improved imaging procedures and contrast agents, and was selected to receive a proof-of-concept award under the State of Colorado's Bioscience Discovery and Evaluation Grant (BDEG) program to allow the team to further develop a novel contrast agent designed to provide precise internal temperature measurements, which can be used to detect some cancers and some types of inflammation.



Christopher Yakacki, PhD
New Inventor of the Year,
CU Denver | Anschutz

Dr. Yakacki (mechanical engineering) runs CU Denver's Smart Materials and Biomechanics (SMAB) Lab. Since joining CU 2012, he has fabricated a medical imaging accessory device to solve an unmet need identified by clinicians in interventional radiology, and has also worked with TTO on two subsequent ideas that have received positive early commercial feedback.



EndoShape, Company of the Year

EndoShape (Boulder) is a medical device company in the coil embolization and occlusion market. The company was founded based on shape memory polymer technology licensed from CU in 2007, from the laboratory of Robin Shandas, who remains on the board and executive team of EndoShape today. The company's Medusa™ Vascular Plug product received 510(k) marketing clearance and will be commercially available in 2014, with the potential to positively impact the 50,000 U.S. patients who have peripheral vascular embolization procedures each year.



ColdQuanta, Company of the Year

ColdQuanta (Boulder) produces high performance, cutting edge cold and ultracold atom technology. Their products utilize Bose-Einstein Condensate, or BEC, a new form of matter created just above absolute zero, with potential applications in a wide range of research and commercial settings. The company grew out of decades of research by CU-Boulder physics professor and JILA member Dana Anderson, who also serves as the company's CTO.

