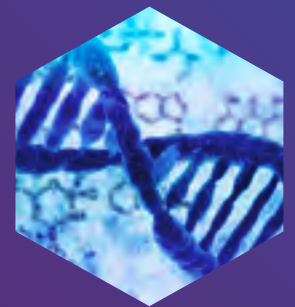


Cutting Edge of Research and Science

THE UNIVERSITY OF TOLEDO
ANNUAL REPORT ON TECHNOLOGY TRANSFER
FISCAL YEAR

2015

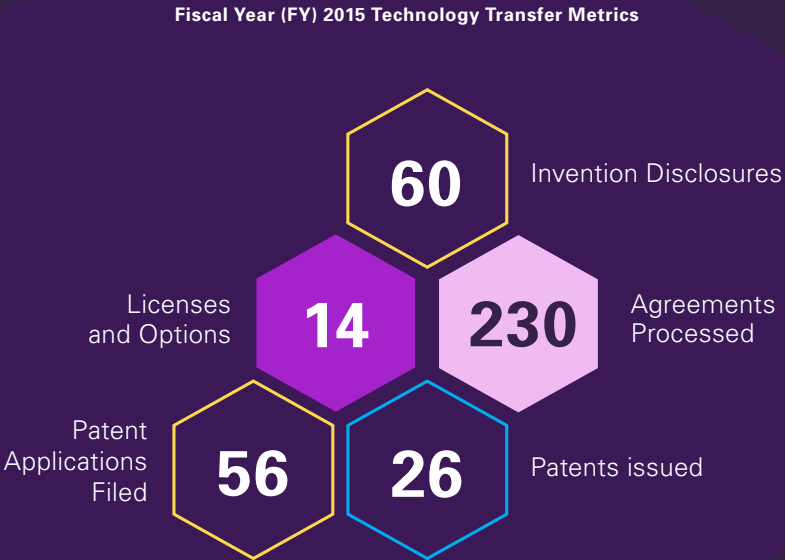


Technology Transfer

The process of transferring creations, discoveries and innovations resulting from university research to the commercial sector, with a goal of improving the health and prosperity of the worldwide community.

Translating UT Research into Commercial Success

The numbers tell the story

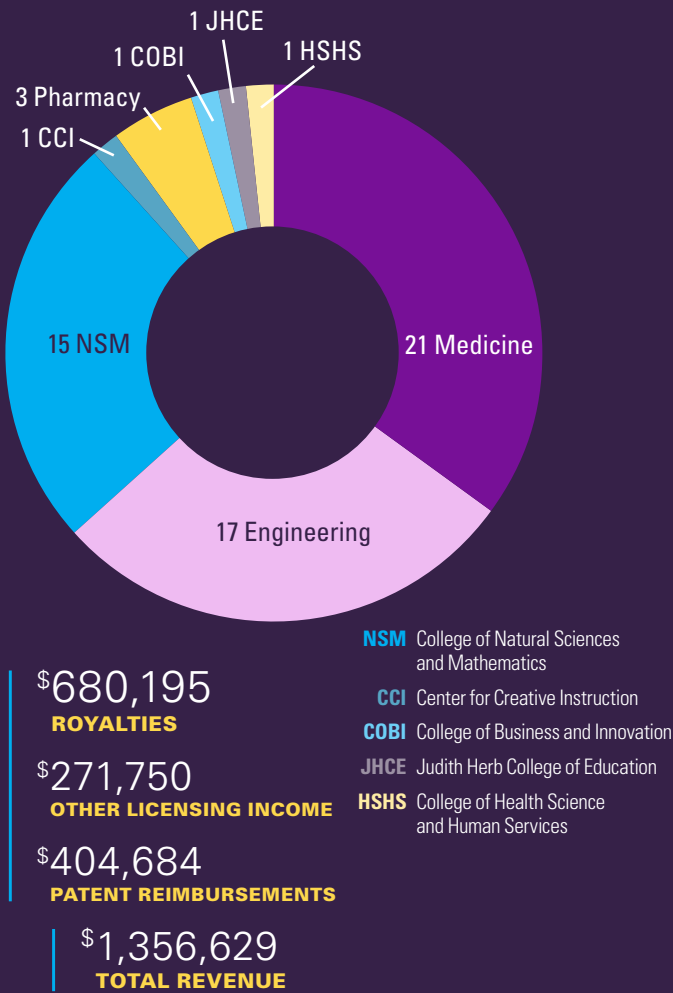


The University of Toledo (UT) technology transfer team provides professional services to faculty, staff and students as they develop commercializable innovations that create new jobs and economic growth for the local community and beyond.

The team works to smoothly facilitate the transfer of UT-developed creations, discoveries and innovations to the marketplace. Primary duties include guiding inventors through the intricate process of protecting and licensing university-developed intellectual property, identifying and helping to secure funding — including grants and sponsored research opportunities — for further development, and working with inventors to help validate their platform technologies as commercially valuable or form spin-off businesses.

Other functions of the technology transfer team include:

- Assisting with invention disclosure forms;
- Analyzing commercial potential of creations, discoveries and innovations;
- Obtaining protection for intellectual property and marketing technologies to potential licensees;
- Preparing and executing agreements including confidentiality, material transfer, industry-sponsored research, inter-institutional, memoranda of understanding, and licenses;
- Developing and maintaining relationships with industry to obtain feedback on new technologies and execute agreements.



Issued Patents — Novel, Useful, Non-obvious Inventions

The University of Toledo recognizes the following inventors’ contributions in promoting the progress of science through designation as an inventor on one or more patent grants. Names in gold are inventors who contributed to patents issued in fiscal year 2015. Since 1972, The United States Patent and Trademark Office has issued more than 225 United States patents to The University of Toledo.

Mamoun Alhamadsheh	Kuan-Chen Fu	Zhichuan Li	Steven Selman
Richard Andaloro	James Gano	Xianbo Liao	Kalpathi Seshan
Jared Anderson	Greta Garbo	Xiangxin Liu	Joseph Shapiro
Donald Angelbeck	Dean Giolando	Branden Long	Lirim Shemshedini
Bernard Arulanandam	Vijay Goel	Jeffrey Lovelace	Diana Shvydka
Ragheb Assaly	Peter Goldblatt	Jian-Yu Lu	Henry Simon
Bradley Austermiller	Stephen Goldman	Rosa Lukaszew	Dimitris Skalkos
Abdul-Majeed Azad	Bing Gong	Edward Lumsdaine	Ewa Skrzypczak-Jankun
Kenneth Bachmann	Anne Graves	Amarjit Luniwal	James Slama
James Baril	Timothy Graves	Xianda Ma	Clifford Smith
Sarit Bhaduri	Akhlesh Gupta	Parani Madasamy	Edward Snell
Ashok Biyani	Jiwan Gupta	Balakrishna Maddi	Morris Srebnik
Thomas Blomquist	George Hageage	Konstantin Makhrtachev	Sujatha Srinivasan
Gloria Borgstahl	James Hampton	William Maltese	Stanislaw Stepkowski
Michael Brattain	Gregory Haselhuhn	Maurice Manning	Thomas Stuart
Renee Buchanan	Judy Hendricks	Mark Mason	Steven Sucheck
Jeffrey Burnham	Channing Hinman	Aaron Matyas	Desikan Sundararajan
James Byers	James Horner	Yunjing Meng	Verner Swanson
Changmeng Cai	Wayne Hoss	William Messer Jr.	Rafal Swiercz
Brent Cameron	Chen-Lin Hsieh	Dennis Metzger	Majid Tabesh
Yang Cao	Xuefei Huang	Yoshihiro Miyahara	Rommel Talan
Keming Chen	Richard Hudson	Alan Morgan	Sridhar Thirupathi
Shao-Yong Chen	Chiung-Yu Hung	Naser Mostaghel	Jiang Tian
Wenhao Chen	James Huttner	D’Anna Mullins	Liyanaaratchige Tillekeratne
Xia Chen	Clara Jackson	Durgesh Nadkarni	Christopher Trabbic
Yiliang Chen	John Jaegly	Ganapathy Naganathan	James Trempe
Jiqi Cheng	Douglas Jambard-Sweet	Terry Ng	Stefan Uhlenbrock
Joanna Chorostowska-Wynimko	Jerzy Jankun	Babatunde Ojo	Sasidhar Varanasi
Garry Cole	Ralph Jansen	Jorhan Ordosgoitti	Anthony Vasko
Alvin Compaan	Ahalapitiya Jayatissa	Jean Overmeyer	Sridhar Viamajala
Erin Crawford	Rashmi Jha	Scott Pappada	Darcy Wagner
Anantha Dadi	Partha Karmakar	E. Ishmael Parsai	James Walker
Julian Davies	Victor Karpov	Naba Raj Paudel	Haojie Wang
Robert Deck	Stamatios Kartalopoulos	Danny Pincivero	Yu Wang
Laurent Deloux	Peter Kascak	Henry Povolny	Kristy Warner
Jeffrey DeMuth	Rick Keck	Kent Price	David Weaver
Xunming Deng	Amin Khan	Demetrios Raftopoulos	Anthony Webb
David Dick	Rahul Khupse	Walajapet Rajeswaran	Kristopher Wieland
John Dignam	Roger King	Kripa Rao	James Willey
Philip Dunbar	Jon Kirchhoff	Glenn Reimer	Zi-Jian Xie
Graham Durant	Thoe Kirkland, III	Patricia Relue	Liwei Xu
Sylvain Dutremez	Rita Klein	Michael Robinson	Jianmin Xue
Mohammad Elahinia	Wieslaw Klis	William Roll	Qicheng Yang
Paul Erhardt	Charles Knight	Yann Roussillon	Zhong Ye
Ervin Faulmann	Steven Kramer	Sairam Rudrabhatla	Jieh-Juen Yu
John Feldmeier	Kenneth Kropp	Jeffrey Sabin	Quilin Yu
Ronald Fournier	Frederick Kurtz	Murray Saffran	Dawei Yuan
Peter Fraleigh	Harold Lee	Jeffrey Sarver	Fei Zhao
James Fry	Aklilu Lemma	Constance Schall	Bin Zheng
	Marc Levine	Padmanabhan Sekher	Donald Zrudsky

Looking for Research Funding?

Academic researchers know that state and national funding opportunities are available for developing new and innovative technologies. Recent trends require that new technologies also possess protectable intellectual property that can be developed for commercialization. Funding agencies look to support technologies that have the potential to add to economic growth through the market entry of new products or platform technologies that could form the basis for a start-up company to produce jobs.

Ohio Opportunities:

The Third Frontier Technology Validation and Start-Up Fund (TVSF) is one opportunity on which UT's technology transfer office collaborates with faculty inventors. The fund is offered for two separate phases of technology development and is available on a periodic basis to Ohio institutions of higher education and start-up companies that have licensed intellectual property from those institutions.

- Phase 1 provides up to \$50,000 from the fund, plus 1:1 matching funds from the institution to help researchers generate the proof needed to move the technology to the point where it is ready to be licensed by an Ohio start-up company, or deemed unfeasible for commercialization. The funding pays for validation activities such as prototyping, demonstration and assessment of critical failure points in subsequent development, scale-up, and commercialization.
- Phase 2 provides up to \$150,000 for start-up companies that have licensed intellectual property developed at Ohio research institutions during the critical early life of the company. These funds are used to help accelerate the time to market. No match dollars are required for Phase 2.

See page 3 for information on this year's awardees and their technologies.

I-Corps@Ohio is a statewide program launched in Spring 2015 to validate market potential and accelerate commercialization of Ohio's university-based technologies. Its goal is to assist faculty and graduate students from Ohio universities and colleges to validate the market potential of their technologies by developing market-driven value propositions and scalable business models to attract angel and venture funding to support company formation and market entry. I-Corps@Ohio is modeled after the National Science Foundation's (NSF) successful I-Corps program, which has been proven to increase innovation, entrepreneurship and industry collaboration. A competitive application process culminates in a \$15,000 award that is used toward travel for all team members' mandatory attendance at the I-Corps@Ohio program sessions, as well as other necessary expenses connected with program goals.

Since its inception in January 2012, UT inventors and start-up companies have received more than \$1.5M from TVSF and matching funds to support research toward commercializable products and processes. Thus far, UT has claimed 16 TVSF grants — third in the state for number of awards, behind only The Ohio State University and the University of Akron.

Other Funding:

The NSF offers two programs that provide funding sources for university inventors as well: Innovation Corps (I-Corps) and Partnerships for Innovation: Accelerating Innovation Research (PFI: AIR).

I-Corps was created to develop and nurture a national innovative ecosystem by helping discoveries from fundamental research become new technologies that benefit society. Since that program's inception in July 2011, UT faculty members Dr. Vijay Devabhaktuni, Dr. Mohammad Elahinia, Dr. Champa Jayasuriya, Dr. Rashmi Jha, Dr. Dong-Shik Kim, Dr. Ashok Kumar, and Dr. Kana Yamamoto have received seven of the 21 grants awarded to Ohio inventors.

PFI: AIR program funds previously recognized NSF research and encourages, enhances and accelerates innovation and entrepreneurship toward commercialization, including demonstrating proof-of-concept, prototyping and/or scale-up, while providing entrepreneurial/innovative training for faculty and students. In FY2015, UT faculty members Dr. Sasidhar Varanasi, Professor, Chemical and Environmental Engineering and Dr. Patricia Relue, Professor, Bioengineering, received the grant in April for further development of furans from biomass hydrolysates; Dr. Sridhar Viamajala, Associate Professor, Chemical and Environmental Engineering, received the grant in June to develop a low-cost method to harvest algal biomass from dilute cultures.

Inventors wishing to apply for any grant opportunity are invited to contact Anne Izzi in the Technology Transfer Office at 419.530.6226 or anne.izzi@utoledo.edu to learn how we may be able to help you secure funding.

CONGRATULATIONS!

UT's Successful FY 2015 Ohio TVSF Grant Recipients

PHASE 1

MECHANICAL, INDUSTRIAL AND MANUFACTURING ENGINEERING (MIME)

ADDITIVELY MANUFACTURED PATIENT

SPECIFIC- IMPLANTS — \$50,000

Dr. Mohammad Elahinia and his team have created an implant design and manufacturing methodology for Nitinol fixation hardware that is stiffness-matched to an individual's needs. The team has shown that through a careful understanding of design it is possible to produce porous Nitinol devices that have similar stiffness to bone. This technology will solve the problems of stress shielding and stress concentration that cause current fixation devices to fail.

PHASE 2

OSTEONOVUS, INC. — \$100,000

OsteoNovus is an early stage orthopaedic medical device company focused on developing biologic materials to support and regenerate bone. The technology licensed from The University of Toledo features novel synthetic calcium phosphate-based cements suitable for several clinical applications, including bone voids and treatment of various fractures and spinal disorders. The company is based upon innovative technology developed by Dr. Anand Agarwal, Dr. Sarit Bhaduri and Dr. Vijay Goel at The University of Toledo.

PHASE 2

THERMOMORPH LLC — \$150,000

Thermomorph LLC is a start-up company based upon patent-pending foundational technology developed by Mohammad Elahinia, PhD, Professor, MIME, and Christopher Cooper, MD, Professor of Medicine and Dean of the College of Medicine and Life Sciences. The QuickFlow PE is a simple and effective device that provides a unique solution for pulmonary embolism. The most important feature of this technology is that treatment of a pulmonary embolism can be completed and blood flow can be restored within 30 minutes of the patient's arrival. This is significantly faster than all other modes of treatment including competitive catheters.

Start-ups*

2014

OsteoNovus Inc.

Sarit Bhaduri, Vijay Goel & Anand Agarwal

OsteoNovus is an early-stage orthopaedic medical device company focused on developing biologic materials to support and regenerate bone. The company is based on innovative technology developed by established researchers at The University of Toledo. The technology features novel synthetic calcium phosphate-based cements suitable for several clinical applications, including bone voids and treatment of various fractures and spinal disorders.

Spinal Balance Inc.

Vijay Goel & Anand Agarwal

Spinal Balance is committed to developing intuitive instruments, advanced implants and processes that will enhance the surgical experience for physicians, improve patient outcomes and reduce costs. The company plans to commercialize several innovations from The University of Toledo, the first of which is expected to be a bioactive facet screw.

NWO Stem Cure LLC

Paul Erhardt

NWO Stem Cure was founded in 2013 for the development and application of small molecules to mesenchymal stem cells for treatment of musculoskeletal disease and other medical conditions.

IRISense LLC

Brent Cameron

IRISense is a unique, noninvasive glucose monitoring system that uses an ocular imaging technique to analyze the human iris. IRISense will provide the opportunity for the millions of diabetes sufferers to have quick and painless access to important knowledge about the state of their blood glucose levels at any time, which will positively affect their lifestyles and improve their health. In addition, this technology can be viewed as a “platform” technology, as its inventors envision expanding its use to measure lactic acid (fatigue in military/sports), blood alcohol (law enforcement, employment) and applications for other analytes.

*Start-ups were established to commercialize technology developed by named faculty member(s).

2013

Analytic Diabetic Systems LLC

Brent Cameron

Analytic Diabetic Systems is a wholly-owned subsidiary of Dayton, Ohio’s Aptima, Inc., focused on deploying medical analytics specifically for predicting glucose in both inpatient and outpatient settings.

Butterfly Spine LLC

Vijay Goel & Anand Agarwal

Butterfly Spine is dedicated to the discovery, development and commercialization of spinal products that are necessary to fuse a degenerated segment. Its current project is a novel interspinous dynamic fusion device in collaboration with Paradigm Spine.

EndoSphere Spine LLC

Vijay Goel & Anand Agarwal

EndoSphere Spine is a biotechnology company dedicated to the discovery, development and commercialization of a minimally-invasive endoscopic fusion cage that will be used to restore spinal alignment and fuse degenerated segments which have sustained minor soft tissue trauma.

2012

Digital Therapeutics LLC

Bashar Kahaleh

Digital Therapeutics is focused on developing treatments for orphan diseases with high unmet medical need, particularly on inflammation.

2011

AccuGenomics LLC

James Willey

AccuGenomics provides comprehensive and accurate gene expression tests to diagnose, monitor and direct cancer treatment and ensure confidence in clinical decisions.

Excellent Energy Solutions (ExEnSo)

Peter Kascak, Ralph Jansen & Timothy Dever

ExEnSo is developing an innovative flywheel energy storage system that may be used for distributed or centralized energy management. This proprietary system will be combined with enabling technological advances under joint development by ExEnSo, NASA and UT.

2009

Acense LLC

Abdul-Majeed Azad

Acense develops and tests sensors focused on early fault-warning for oil-immersed electrical equipment.

2008

Lucintech Inc.

Al Compaan

Lucintech is engaged in the development of thin-film photovoltaic (PV) modules that convert sunlight directly into electricity. These PV modules are semitransparent and ideally suited for building-integrated PV windows and PV automobile sunroofs.

2007

SuGanit Systems

Sasidhar Varanasi, Connie Schall, Jared Anderson, Patricia Relue, & Glen Lipscomb

SuGanit Systems is involved in research and development of renewable and clean energy.

2006

Xunlight Corporation

Xunming Deng

Xunlight develops, markets and manufactures low-cost thin-film silicon-based photovoltaic products and manufacturing equipment for high-throughput production of flexible and lightweight photovoltaic modules.

Spinal Designs

Ashok Biyani

Spinal Designs provides products and services to orthopaedic surgeons.

Freedom Meditech

Brent Cameron

Freedom Meditech is a developmental stage medical device company focused on non-invasive blood glucose testing for diabetics.

2005

The Turning Point LLC

Vijay Goel, Danny Pincivero, John Jaegly, & David Dick

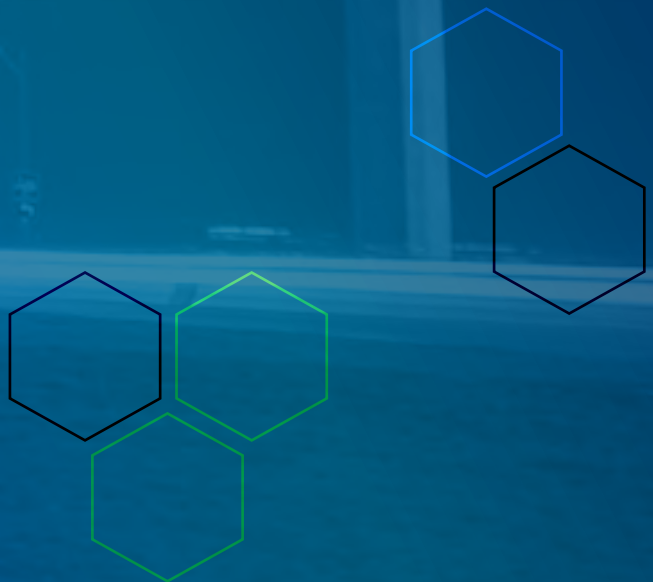
The Turning Point produces state-of-the-art golf exercise and therapeutic devices for spine strengthening and rehabilitation.

2001

Schneider and Morse Group

Roy Schneider & Dennis Morse

The Schneider and Morse Group develops computer-based educational tools for animal anatomy and dissection.



FY2015 Invention Disclosures

CENTER FOR CREATIVE INSTRUCTION

Sherry Andrews, Daniel Brainard, Jamie Carothers, Brock Clagg, Tonya Floyd-Bradstock, Lisa Procyk, Roy Schneider, Susan Shible, & Brian Szabo
Anatomy and Physiology Revealed: Fetal Pig

COLLEGE OF BUSINESS AND INNOVATION

Finance

Ryan Jorgensen±
Innovative athletic clothing

JUDITH HERB COLLEGE OF EDUCATION

Education Foundations and Leadership

Snejana Slantcheva-Durst, Penny Poplin Gosetti, Debra Harmening, Christine Knaggs, & Ron Opp
Community college student internationalization experience survey

COLLEGE OF ENGINEERING

BioEngineering

Edward Nyman, Jr.
Athletic footwear interaction system for the reduction of knee injury risk

Jason Walker‡
Selective laser melting fabrication of NiTi 3D structures

Chemical and Environmental Engineering

Yakov Lapitsky
Antibacterial surfactant and microgel mixtures

Balakrishna Maddi‡, Sasidhar Varanasi & Sridhar Viamajala
Two-step thermal fractionation of biomass of non-lignocellulosic origin for high-quality biofuels and products

Dong-Shik Kim
Peptide nanotube for slow release of drugs

Civil Engineering

Youngwoo Seo
Antibacterial surfactant and microgel mixtures

COLLEGE OF ENGINEERING (CONT.)

Electrical Engineering and Computer Science

Mehdi Hashemi & Alireza Nematiz
Earth-fixed inertial frame-based radio controller

Vijay Devabhaktuni, Daniel Georgiev & Rohan Repalez
Frequency-steerable acoustic-transducer design software

Thomas Stuart
Controller for a variable-speed induction starter/generator

Engineering Technology

Drew Bendele±, Matthew Hoffman±, Timothy Inkrott±, Joel Long±, & Aaron Soldenwagner±
Hands-free hitch

David Jensen±
Blooming deserts global terraforming initiative

Shane Horrigan±, Chris Kline±, James Opperman±, Scott Purgason±, and Vincent Wilkinson±
The perfect snow shovel

Mechanical, Industrial and Manufacturing Engineering (MIME)

Mohammad Elahinia & Christoph Haberland
Selective laser melting fabrication of NiTi 3D structures

Mohammad Elahinia & Narges Shayesteh Moghaddam‡
Releasable and regenerative bone bandage

Mohammad Elahinia, Michael Koludrovich‡, An Nguyen±, & Alex Wolf±
Minimally invasive thrombectomy invention

Kirsten Duffy
Inductive power device (IDP)

Ray Hixon
Updated EAGLE block-structured 3D volume grid generator

Manish Kumar
Earth-fixed inertial frame-based radio controller

Ivan Locci
High-efficiency, high temperature titanium heat pipe radiation

Process development to reduce porosity in alloy castings

Isaac Nichols±
The Contour

Joseph Strobbe±
Silverback casualty extraction pack

COLLEGE OF HEALTH SCIENCE AND HUMAN SERVICES

Rehabilitation Sciences

Anthony Boyle± & Eric Ondrus±
Prosthetic joints for special testing

COLLEGE OF MEDICINE AND LIFE SCIENCES

Biochemistry and Cancer Biology

David Dignam
Multi-organ Dysfunction Syndrome (MODS) severity assay

William Maltese & Jean Overmeyer
MOPHIPP

Randall J. Ruch
One-handed pipet gun

Ivana de la Serna
^ Plasmid for the study of SOX10 protein

Cardiovascular Medicine

Christopher Cooper
Minimally invasive thrombectomy invention

Medical Microbiology and Immunology

Caitlin Baum‡, Stanislaw Stepkowski & Rohit Vyas‡
Next-generation sequencing method for determination of HLA haplotypes

Jason Huntley
^ E. Coli strains expressing recombinant outer membrane proteins from francisella tularensis

Jyl Matson
Novel small molecule inhibitors of vibrio cholerae

COLLEGE OF MEDICINE AND LIFE SCIENCES (CONT.)

Medicine

Kevin Christopher‡
Use of fluorescent ANTS to examine the blood-brain barrier-permeability of polysaccharide

Maria Alfonso-Jaume, Shah Nawaz Imam & Juan Carlos Jaume
^ Spontaneous autoimmune diabetes in humanized mice carrying human type 1 diabetes susceptibility

Nezam Altorok, Vivek Nagaraja & Bashir Kahaleh
Treatment of Raynaud's phenomenon by inhibition of transient receptor

Treatment of Raynaud's phenomenon by topical application

Nezam Altorok & Ragheb Assaly
Multi-organ Dysfunction Syndrome (MODS) severity assay

Anand Mutgi
Built-in weight measuring shoes and shoe inserts

James Willey
Next-generation sequencing method for determination of HLA haplotypes

Neurosciences

Joshua Park & Nicolas Chiaia‡
Peptide nanotube for slow release of drug

Joshua Park & Vishruti Makani‡
Use of fluorescent ANTS to examine the blood-brain barrier-permeability of polysaccharide

Otolaryngology

Reginald Baugh & Payam Entezami‡
Laryngeal mechanosensor stimulator (LMS)

Pathology

Thomas Blomquist
Next-generation sequencing method for determination of HLA haplotypes

Kenneth Hensley
Compositions and methods of use for novel compounds in therapy of autophagy-related pathologies

Composition of derivatives of lanthionine ketamines and methods for their synthesis

COLLEGE OF MEDICINE AND LIFE SCIENCES (CONT.)

Physiology and Pharmacology

Ashok Kumar & Sudhir Jain

^ Generation of transgenic mice containing human angiotensinogen gene

Radiation Oncology

John Feldmeier & E. Ishmael Parsai

Expanding multi-lumen applicator operating within a balloon

E. Ishmael Parsai & Diana Shvydka

True multilayer thin film detector for imaging and spectroscopy

Urology

Rick Keck & Steven Selman

AY-27 rat bladder tumor cell model

COLLEGE OF NATURAL SCIENCES AND MATHEMATICS

Biological Sciences

Maria Diakonova

^ cDNAs encoding HA-PAK1 proteins

^ cDNAs encoding pNTAP-PAK1 proteins

^ cDNAs encoding myc-PAK1 proteins

^ cDNA encoding mRFP-Nck2

Chemistry and Biochemistry

Peter Andreana, Jean Paul Bourgault‡ & Kevin Trabbic‡

^ Thomsen Friedenreich-polysaccharide A1 conjugate

Peter Andreana, Mengchao Shi‡ & Kevin Trabbic‡

Specific monoclonal IgM antibody (murine) from novel construct

Mark Mason & Chris Gianopoulos‡

Green conversion of dipyrromethanes to dipyrromethenes

Donald Ronning, Steven Sucheck & Sandeep Thanna‡

Novel anti-infective, anti-inflammatory, anti-cancer, cytoprotective, neuroprotective, and anti-oxidant agents

Ronald Viola & Roger Moore

^ Assay of aspartate semialdehyde dehydrogenase

Ronald Viola & Stephen Zano‡

^ Expression vectors for metK genes

Bharani Thangavelu‡ & Ronald Viola

Development of selective aspartate pathway inhibitors as novel antibiotics

COLLEGE OF NATURAL SCIENCES AND MATHEMATICS (CONT.)

Physics and Astronomy

Khagendra Bhandari‡ & Randall Ellingson

Modification of CdS/CdTe solar cell design to improve performance parameters, including conversion efficiency

Passivation of pinholes in CdTe polycrystalline thin films

Michael Heben, Adam Phillips & Nikolas Podraza

Ultraviolet and hardcoat protection of polycarbonate substrates

Victor Karpov

True multilayer thin film detector for imaging and spectroscopy

Yanfa Yan

New metal oxides for photoelectrochemical water splitting and photovoltaic solar cell applications

COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

Center for Drug Design and Development

Paul Erhardt & Chris Trabbic

MOPHIPP

Pharmacology and Experimental Therapeutics

Wissam AbouAlaiwi & Surya Nauli

^ Generation of transgenic mice to study the role of cilia in the vascular system

^ Generation of transgenic mice to study the role of polycystin-1 in the vascular system

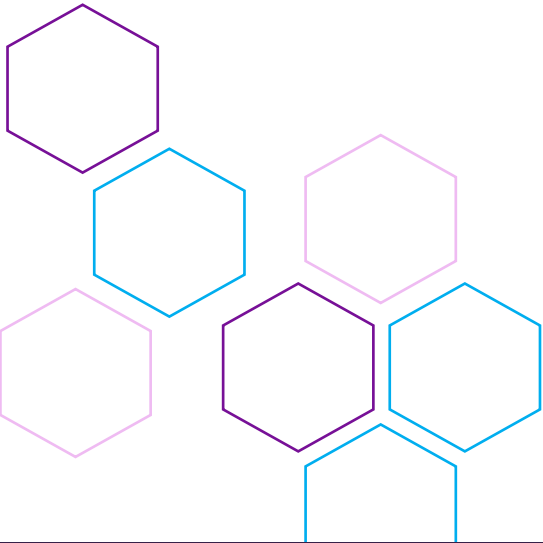
^ Generation of transgenic mice to generate immortalized Tie2Cre inducible surviving knockout cell lines

Pharmacy Practice

Sai HS Boddu

Treatment of Raynaud’s phenomenon by inhibition of transient receptor

Treatment of Raynaud’s phenomenon by topical application



Our Mission

1. Support UT’s mission to improve the human condition;
2. Provide accessible, responsive, timely, and professional patenting and licensing services to UT’s faculty, staff and students;
3. Serve as an efficient and effective conduit for licensing promising UT technologies to industry to promote their entry into the commercial marketplace and:
 - Attract and retain the highest quality faculty and students
 - Increase and expand UT’s research enterprise
 - Create and reinforce commercial relationships
 - Generate institutional acclaim and recognition, and
 - Provide an additional revenue stream
4. Support and encourage local economic development by licensing locally, by licensing to start-up companies, by favoring licenses to faculty start-up companies, and by encouraging and supporting faculty start-up activities;
5. Serve as a resource for information about patents and licensing and encourage recognition that such matters have become meaningful and valuable aspects of academic life and education; and
6. Facilitate greater integration and increased sponsored research activity between academia and industry to improve the flow of innovative university technologies to the public marketplace.

Contact Us



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Experience + Creativity = Lab-to-Launch

The Lab-to-Launch program at The University of Toledo encourages and enables faculty start-up businesses which can potentially contribute to local and regional economic development. This progressive program is tightly coordinated and orchestrated to move technologies with the highest commercial potential from the laboratory bench to launch as quickly and efficiently as possible.

The technology transfer team works closely with faculty inventors to identify potentially valuable commercial opportunities and connects them with regional economic development organizations, including Rocket Innovations and the LaunchPad Incubation program at The University of Toledo, as well as Rocket Ventures — northwest Ohio's venture capital and entrepreneurial resource. These organizations review the technology and initial business plan, provide management consultation, help secure funding for proof-of-concept and further development, and provide many other services to start-up companies. If the new business opportunity qualifies, Rocket Innovations and Rocket Ventures can provide additional funding up to a combined total of \$600,000.



ROCKET INNOVATIONS

THE UNIVERSITY OF TOLEDO

Rocket Innovations is a not-for-profit economic development organization that was established to spur and support innovation and commercialization in order to better facilitate interactions between The University of Toledo (UT) and industry to enhance access to research expertise, intellectual property and commercial opportunities. If consistent with UT's mission, investments are awarded based upon the company's degree of local presence; validation of scientific/technical, educational and charitable merits; contribution to the region's stability and sustainability; and potential for business development within the northwest Ohio region. For more information regarding Rocket Innovations please contact Rhonda Wingfield at 419.530.5759. Rhonda.wingfield@utoledo.edu

Rocket Ventures
TECHNOLOGY ... REALIZED



Rocket Ventures is an investment fund and entrepreneurial services organization whose primary goal is to accelerate the commercialization of early stage, high-tech business opportunities in northwest Ohio. Our experienced team members provide technology-based startup companies with services including business planning, product development, mentoring, fund raising, grant writing, C-Level management placement, and other talent recruitment. These activities are funded from private contributions matched with dollars from the Ohio Third Frontier fund, which allows Rocket Ventures to provide services free of charge to its clients. For more information please contact a representative from Rocket Ventures at 419.464.0353, or visit RocketVentures.org



LAUNCHPAD
INCUBATION
AT THE UNIVERSITY OF TOLEDO

The LaunchPad Incubation program at The University of Toledo focuses on taking new business ventures from concept to commercialization by providing a framework for companies to become thriving, self-sustaining members of the community. Funded by the Ohio Third Frontier and The University of Toledo, the program works to bolster innovation in our region by providing state-of-the-art facilities, access to University of Toledo faculty and student expertise, business model development, hands-on coaching and mentoring, essential networking opportunities, and access to funding and investment resources designed specifically for entrepreneurial development. For more information, please contact our team at 419.530.6044, or visit utoledo.edu/incubator