2014

Office of Technology Transfer

IMPACT REPORT

UNIVERSITY OF MICHIGAN

TECH TRANSFER IMPACT

We take pride in reporting that 2014 was a record-breaking year for tech transfer performance at the University of Michigan. In fiscal year 2014 U-M researchers submitted a record 439 new inventions and our staff completed a record-setting 148 agreements with existing and new businesses. In addition, we helped to launch a record-setting 14 new business startups. These achievements and our performance in years past place us in the top ten of all universities. This performance is a testament to the quality of our research, the commitment of our University and the generous support that U-M Tech Transfer receives from our business, venture, government and community partners.

This report describes the impact of tech transfer with performance metrics and stories that illustrate the University's contribution to the economic vitality and quality of life of our communities. Speaking on behalf of the entire U-M Tech Transfer team, we're proud of our role in transforming the ideas of today into the opportunities of tomorrow.

Ken Nisbet

ASSOCIATE VICE PRESIDENT
U-M Tech Transfer

The U-M Tech Transfer executive team (from left): Robin Rasor, Rick Brandon, Ken Nisbet and Jack Miner

"Innovation and entrepreneurship are at the heart of our mission as a research university. Research on our campus not only leads to advances that have transformed practice in many fields, but also prepares generations of students to meet the challenges they will face as innovators in a wide range of careers."

MARK S. SCHLISSEL | President, University of Michigan

"U-M's exceptional research enterprise inspires a steady stream of ideas that have potential in the marketplace. We are working closely with industry, government and venture partners to ensure that society benefits from the concepts and expertise emerging from our laboratories."

S. JACK HU | U-M Interim Vice President for Research

INNOVATION + ENTREPRENEURSHIP

Today's university plays a vital role in fostering innovation and entrepreneurship. Innovation transforms the university's discoveries and ideas into new products and services that enrich our lives and revitalize our economies. Entrepreneurship extends some innovations into exciting new startup ventures that, along with innovations licensed to existing businesses, create jobs and opportunity for our state and our nation.

Tech Transfer is a key component in our University efforts to foster innovation and entrepreneurship. Our licensing professionals work with faculty to assess, protect and market research discoveries that fuel the competitiveness of our business partners. Our Tech Transfer Venture Center acts as a one-stop hub for entrepreneurs and investors interested in U-M startup opportunities. Our activities help connect faculty and students to real-world research, educational and business opportunities that speak to the core missions of the University.

TECH TRANSFER

+ Transforms research discoveries into tangible benefits for the general public
+ Helps attract and retain the very best students, faculty and entrepreneurial partners
+ Improves the flow of research dollars and resources for our academic community
+ Enriches the educational experience through student internships and hands-on learning experiences
+ Leverages business and venture partnerships to stimulate regional and national economic development
+ Enhances the reputation and stature of the University

Court Innovations co-founders J. J. Prescott and Ben Gubernick with CEO Mary Jo Cartwright, seen here at the University of Michigan Law School, hope to revolutionize the way high-volume, minor offenses are handled by court systems throughout the nation.

MAKING THE JUSTICE SYSTEM MORE ACCESSIBLE

Court Innovations Inc.

"Our goal is to make the courts more accessible by enabling litigants to negotiate and settle their cases online, fairly and conveniently."

Every year, as many as 75 million Americans cited for minor charges such as unpaid traffic fines are issued warrants—and forced to have their day in court. Typically, the experience is frustrating, confusing, time-consuming and expensive. But that could soon change, thanks to an online mediation system developed by a U-M law professor and his former student.

The idea for Court Innovations took shape in 2011 when Professor J. J. Prescott and third-year law student Ben Gubernick began discussing social issues stemming from inefficient access to the courts. As Gubernick explains, "Ninety-five percent of the cases making their way through the justice system involve minor criminal offenses that allow judges and prosecutors to exercise their discretion. We created Court Innovations in order to target those cases. Our goal is to make the courts more accessible by enabling litigants to negotiate and settle their cases online, fairly and conveniently."

Starting in 2013, the project received Venture Center assistance to secure gap funding for prototype development and business modeling. At the same time, Mentor-in-Residence Ken Spenser, a software company executive with more than 30 years of experience, was assigned to assist with venture creation services. With Spenser's help, the team refined their value proposition, cultivated potential customers, strengthened their patent portfolio and hired CEO Mary Jo Cartwright.

In the spring of 2013, a $270,000 grant from U-M's Third Century Initiative enabled the team to complete the build out of their software and implement pilot programs in Michigan courtrooms.

Feedback from magistrates, judges, court staff and litigants has been consistently positive. Now, with a second-phase grant of $2.77 million from the Third Century Initiative, Court Innovations is preparing to scale its technology.

"We plan to increase the number of pilot programs in Michigan and beyond," says Cartwright. "We'll also be expanding the types of cases in the system, developing the back-end technical platform and building the core infrastructure to support and sustain the technology over time."

TECHNOLOGY FOR THE ATHLETE'S TOOLBOX

Motion Tracking for Improved Performance

"Our technology…offers a rich understanding of performance that has never been achieved before."

Fourteen years ago, Professor Noel Perkins had no idea that his love of fly fishing would result in a transformative technology for sports training. At the time, he had just one goal: improve his fly casting. Frustrated with books and videos, he attached an angular-rate gyroscope to the grip of his fishing rod to measure and assess his movements.

Within months, Perkins began collaborating with engineer and fly casting expert Bruce Richards of Scientific Anglers to refine and commercialize his inertial motion capture technology. In 2006, the two launched a startup called CastAnalysis. It was clear the technology could benefit many other sports, from baseball and basketball to bowling, golf, tennis, hockey and football.

With research funding from manufacturers such as PING Golf, iTrainer Golf, Rawlings/Worth and Louisville Slugger, Perkins and his colleagues in U-M's Micro-Dynamics Lab began developing sensors and algorithms capable of directly measuring the motion of sports equipment and delivering real-time data for assessing and training athletes. That same technology could also be used to customize sporting equipment and evaluate athletes for recruitment.

"Our technology can record as many as 6,000 pieces of data per second," says Perkins. "This offers a rich understanding of performance that has never been achieved before for important metrics such as acceleration, swing plane, spin axis and spin rate."

Pittsburgh-based Diamond Kinetics, a U-M startup, was among the first to license the technology, acquiring exclusive rights in baseball and softball. The most recent, and largest, licensee is The Wilson Sporting Goods Company, which acquired exclusive rights in tennis and American football, and non-exclusive rights in all inflatable ball sports. With the U-M license, Wilson is rapidly moving forward to bring products to market, the first of which is a Smart Tennis Sensor co-developed with Sony. Wilson president Mike Dowse cites the technology as part of a "digital onslaught that we believe will revolutionize training and the athlete's toolbox."

Meanwhile, the innovation continues. Perkins and his team are now moving beyond sports to explore applications in other areas such as healthcare and soldier training.

Diamond Kinetics' SwingTracker® software for baseball hitters is based on technology developed by Noel Perkins and the U-M Micro-Dynamics Lab. The system records a player's swing trajectory in real time, generates an image, displays easy-to-understand data for improving technique and even maps the batter's progress over time.

"The University of Michigan's track record in drug development for orphan diseases is excellent," says James Shayman. "In the case of Cerdelga™, the lead compound was invented here and proof of concept was developed here. U-M hopes the drug will significantly improve quality of life for thousands of Gaucher type 1 patients. The FDA approval of Cerdelga™ provides further motivation for me and my collaborators to bring other drugs through the pipeline."

DEVELOPING A NEW TREATMENT FOR GAUCHER'S DISEASE

Cerdelga™

It was 1972 when U-M neurochemist Norm Radin began researching a lead compound that could block glycolipid synthesis and, potentially, treat a group of rare and often fatal genetic disorders. Sixteen years later, he happened to meet nephrologist James Shayman. Within a short time, the two began a collaboration that resulted in a promising new drug for victims of Gaucher's disease, a rare disorder that affects roughly 10,000 individuals worldwide.

Cerdelga™ is the first chemical entity developed at U-M to obtain drug approval.

Shayman and Radin built their research program on a shared interest in lysosomal storage disorders. Lysosomes are organelles within a cell involved in the breakdown of lipids, proteins and sugars. With Gaucher's disease, an enzyme deficiency causes a buildup of fat in major organs such as the liver, kidneys, lungs and brain. In adults, the disease is debilitating. For children, it can be fatal.

By 1998, Dr. Shayman and members of his research team had developed a family of inhibitors that were both effective and selective in blocking the lysosomal lipids related to Gaucher's disease. And, unlike conventional enzyme replacement therapy, these drugs might be taken orally, in the form of a pill. Within two years, and with the help of U-M Tech Transfer, the inhibitors had been licensed to the Genzyme Corporation (now a Sanofi company), which sponsored clinical trials of one of those compounds.

On August 19, 2014, the FDA announced approval in the United States of Genzyme's Cerdelga™ capsules, the only first-line oral therapy for certain Gaucher's disease type 1 patients. Cerdelga™ (eliglustat) represents the first chemical entity conceived and developed at U-M to achieve FDA approval. The drug is also being reviewed by regulatory agencies in other countries.

REPROGRAMMING BRAIN CIRCUITS TO ALLEVIATE THE SYMPTOMS OF TINNITUS

An Innovative Treatment for a Common Hearing Disorder

"Our hope is that we may have found a way to alleviate the symptoms of tinnitus, which could be hugely beneficial for millions of people."

For the nearly 50 million Americans who suffer from the hearing condition tinnitus, every moment of every day is filled with unwanted noise. Whether it manifests as ringing, hissing, humming or buzzing, that non-stop sound can be disruptive and even debilitating.

U-M Professor Susan Shore first became interested in tinnitus while studying brain function in the dorsal cochlear nucleus, the first station for signals arriving from the auditory nerve. Early on, she discovered that other sensory information from the body's "touch system"—the somatosensory system—was also integrated in the cochlear nucleus. This helped explain why people with tinnitus could often alleviate symptoms by pressing on their face, moving their jaw or clenching their teeth.

Follow-up studies showed that, after hearing loss, there was upregulation of somatosensory projections to the auditory system, leading to increased firing of these neurons, or hyperactivity, which is a hallmark of the brains of tinnitus sufferers. Further, by stimulating the sensory connections, Shore and her team were able to modify the firing rate of the neurons, a rate that increases in tinnitus sufferers. This technique resulted in long-lasting effects—a process known as long-term neuroplasticity.

Shore harnessed these findings to build a device, presently being assessed in a proof-of-concept trial, to make the neuron firing rate decrease at the particular tinnitus frequency, thereby relieving symptoms.

While a commercially available treatment is likely still some time away, the initial findings have been promising, and Shore has been working with U-M Tech Transfer to assess the feasibility of a system that could be distributed through existing audiological channels.

"There may never be a cure for tinnitus, and we have no universally effective treatment to offer right now," says Shore. "Our hope is that we may have found a way to alleviate the symptoms of tinnitus, which could be hugely beneficial for millions of people."

Professor Susan Shore has led the development of an experimental auditory somatosensory device that uses electrical stimulation to recalibrate connections between auditory nerve signals and somatosensory neurons in the face and neck. The neurons, which carry information about touch, can be a major trigger for tinnitus. "In the future," says Shore, "it may be possible to treat tinnitus patients by reprogramming these auditory-touch circuits in the brain."

2014
A RECORD YEAR

148
LICENSE/OPTION AGREEMENTS
NEW RECORD

439
INVENTION REPORTS
NEW RECORD

BY SCHOOL/COLLEGE:

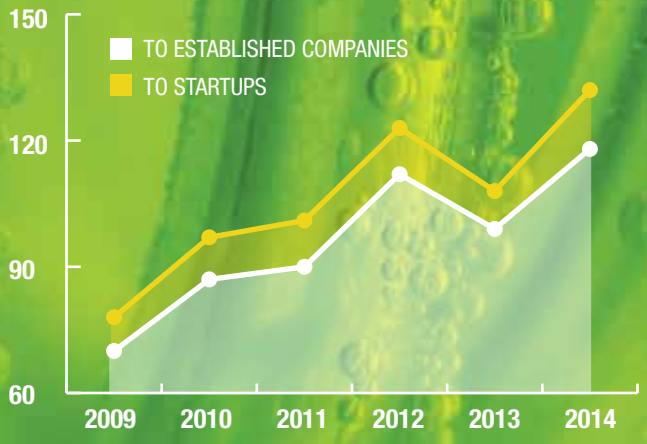
32 LSA
88 OTHER
133 MEDICINE
186 ENGINEERING

132
PATENTS ISSUED

14
STARTUPS
NEW RECORD

INVENTION REPORTS FY14=439

LICENSE AGREEMENTS FY14=148



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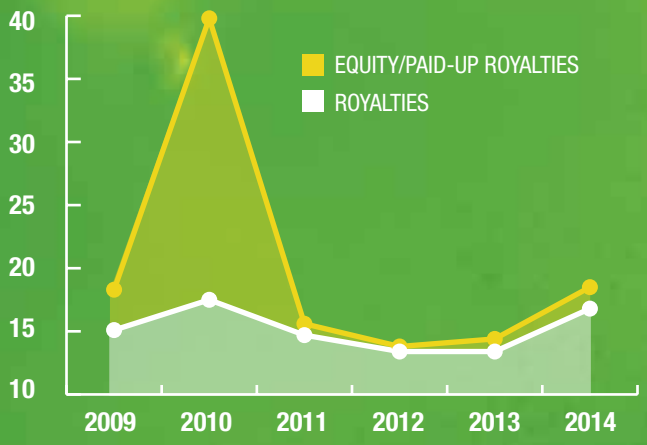


AEROSPACE ENGINEERING

- A Method to Increase Structural Performance, Strength and Durability of Fiber-Reinforced Composite Materials
- A Windshield-Mounted Aid to Visual Landing for Aircraft
- Manufacturing One-Piece Composite Structures
- Progressive Failure Analysis Tool (PFAT) Using Enhanced Schapery Theory and the Discrete Cohesive Zone Model (DCZM)
- Reactive Vehicle Trip Planner
- Software for Modeling Material Response to Heat Transfer

ANATOMY & CELLULAR BIOLOGY

- Don MacCallum's Michigan Histology

ANESTHESIOLOGY

- BlackBox ICU

ARCHITECTURE & URBAN PLANNING

- Disposable Cardboard Forms for Composite Filament Winding Processes
- Multi-cellular Pneumatic Aggregate Envelope Systems

ART & DESIGN

- Sun-Powered Gobo/Film/Video Projection System
- Sun-Powered, Laserlike Projector
- Sun-Powered Street Video Game Console

BIOLOGICAL CHEMISTRY

- Antibody against Human Methylenetetrahydrofolate Reductase
- Uses of Flavivirus Protein 3D Structure and Protein Production

BIOMEDICAL ENGINEERING

- Analyte Enriching and Preserving Collection Tube
- Assay to Study Reproductive Toxicity
- Bioresorbable Polymer for Transcatheter and Minimally Invasive Surgical Closure of Congenital and Acquired Heart Defects and Vascular Anomalies
- Cartilage Defect Cap
- Cryogenic Manipulation Device
- Integrated Histotripsy and Ultrasound Parametric Imaging System: Histoscopy
- Method of Giving Motor Cortex Temporary Control over the Limbs during Physical Therapy
- Micelles for Encapsulating Lipophilic Therapeutic Agents
- Optoelectronic Microprobe for Tissue Diagnostics
- Patient Specific CPAP and Anesthetic Masks
- Rapid Ultrasound Scanning Histotripsy
- Sitting Drop 3D Cell Culture Array Plate
- Vortex Histotripsy: Synthesis of Continuous Rotating Bubble Clouds

CARDIOLOGY

- A Catheter and Method to Localize Reentrant Activity in the Heart
- A Random Forest Based Risk Model for Reliable and Accurate Prediction of Risk of In-Hospital Mortality in Patients Undergoing PCI
- A System for Angioplasty of Calcified Atherosclerotic Lesions
- Anti-arrhythmic Properties of Membrane-Permeable Peptides
- Artery Occlusion Device
- Biodegradable Nanoplatform Bisphosphonate Formulation to Minimize Cardiac Side Effects
- Injectable Device and System for Heart Rhythm and Other Physiologic Monitoring
- Method and Device for Detection of Hierarchical Patterns of Activation during Cardiac Arrhythmias
- Methods for Visualization of Phase Singularity Density during Atrial Fibrillation
- Risk Prediction of Transfusion Needs in Patients Undergoing PCI
- Synthetic Psgl-1 Polymer Inhibitor for Inflammation and Vascular Disease
- TiPARP for Lipid Disorder and Cardiovascular Disease
- TM6SF2 for Lipid Disorder and Cardiovascular Disease

CELLULAR & DEVELOPMENTAL BIOLOGY

- Alterations in Telencephalic Neuronal Tate, Neuronal Calcium Signaling and Neurotransmitter Release in iPSC Models of Bipolar Disorder
- Methods of Treating Neurological and Mental Disorders Involving Down Syndrome Cell Adhesion Molecule
- Mouse Line to Allow Intestinal Epithelium-Specific Gene Modulation

CHEMICAL ENGINEERING

- Asynchronous Magnetic Bead Rotation (AMBR) Microviscometer for Label-Free DNA Analysis
- Bacterial Strain Detection Using Chiroplasmonic Effects
- Breath Activated Images and Anti-counterfeit Tags on Nanopillars
- Cavitation Rheology Applied to Small Volume Limits for Material Characterization and Tissue Diagnostics
- Co-cultures for Producing Polyglutamic Acid (PGA)
- CTC Expansion
- Direct Writing of Solution Electrospun Multicompartmental Fibers
- Electromagnetic Media with Plasmonic and Semiconductor Nanowires and Nanocrystals with Narrow Optical Windows
- Methods, Systems, and Devices for Designing Molecules
- Microfluidic Design for On-Chip Rapid Quantification of Circulating Extracellular Vesicles for Cancer Monitoring
- Ni Catalyst for Hydrothermal Hydrodeoxygenation
- Personalized Knee Brace from 3D Printed Aramid Nanofiber Composites
- Spatially and Temporally Reconfigurable Assembly of Colloidal Crystals
- Spontaneously Formed Terminal Assemblies from Nanoparticles for Enzyme Stabilization
- Wax Deposition Modeling Software

CHEMISTRY

- Benchtop Machine for Cancer Cell Morphology Analysis
- Bioluminescent Metal Ion Assay
- Copper Catalyzed [18F] Fluorination of (Mesityl)(Aryl) Iodonium Salts
- Copper Mediated Nucleophilic Fluorination of Aromatic/Heteroaromatic Systems
- Handheld Meter for Measurement of Glucose in Tears
- High-Confidence Single-Molecule Detection of RNA Biomarkers Using Transiently Binding Probes
- Improved Methods for the Detection of Cysteine Oxidation
- Integration of Molecular and Enzymatic Catalysts on Graphene for Biomimetic Generation of Antithrombotic Species
- L-Arg and L-Arg Rich Peptide-Based Rinse Solutions/Aerosol Sprays that Increase Natural Production of Sinus NO
- Portable Field Sensor for Lead Paint Based on Gelation
- Process for Fluorinating Compounds
- Process for Fluorinating Compounds 2
- Process for Fluorinating Compounds 3
- Ruthenium Dehydrogenation Catalysts
- Treatment for Dyskinesia
- Treatment of Diabete Mellitus Type II and Alzheimer's Disease
- Ultrasmall Metal Nanoclusters with Exceptional Absorption to Volume Ratio for Linear and Non-linear Optical Applications

CIVIL & ENVIRONMENTAL ENGINEERING

- CaddieBot: Semi-autonomous Robotic Platform for Golfer Assitance Based on an Outdoor Implementation of the Real-Time "Follow-Me" Algorithm
- CraneVision: Real-Time Visual Information Support for Improved Productivity and Safety in Crane Operations
- Process for Electro-Hydrodynamically Enhanced Bioaerosol Inactivation
- Strain Hardening Brittle Matrix Composites with Fire Resistance and High Ductility

COMPUTATIONAL MEDICINE AND BIOLOGY

- Early Detection of Severity of Hemodynamic Decompensation Using S-Transform and L1-Norm on ECG Signals
- Epsilon-Tube Filtering for Artifact Reduction in Impedance and Other Physiologic Signal Monitoring
- P-QRS-T and U Detection Using L1-Norm Optimization from ECG Signals

DENTISTRY

- Ameloblastin Knockout LacZ Knockin Mouse Model
- Bioactive Smart Dental Composite Material
- Fam83h Conditional Knockout Mouse Model
- Fam83h Knockout LacZ Knockin Mouse Model
- Injectable and Self-Integrating Hydrogels
- Maxillofacial Oncology and Reconstructive Surgery Cooperative Oncology Group Database
- Nanofibrous Spongy Microspheres, Their Composition and Fabrication
- Optimized Human Pluripotent Stem Cell (hPSC) Media for Use with PMEDSAH Grafted Plates and Other Feeder-Free Synthetic and Biological Substrates
- Personalized Auto Activated Technology for Bone Correction in Patients with Craniofacial Anomalies and Other Craniofacial Skeletal Dysplasias
- Plasmid Constructs Driving Specific Gene Expression in Ameloblasts
- Process for Manufacture of Mucosa for Grafting
- Rabbit Anti-mouse Amelogenin Antibody
- Tumorigenic Human Salivary Mucoepidermoid Carcinoma Cell Lines
- Wdr72 Knockout LacZ Knockin Mouse Model

DERMATOLOGY

- Hedgehog Pathway Inhibitors as Treatments for EGF Receptor Inhibitor-Mediated Skin Inflammation
- Met Inhibitors for Dermatological Conditions

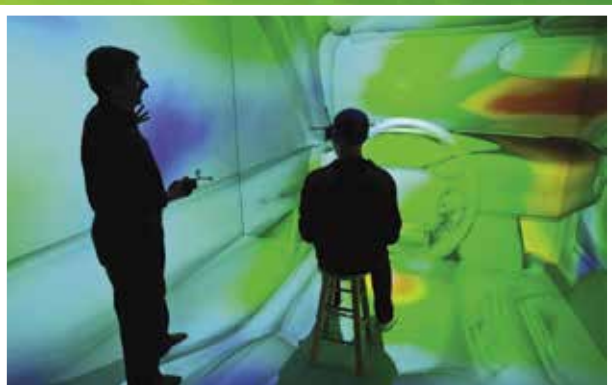
EDUCATION

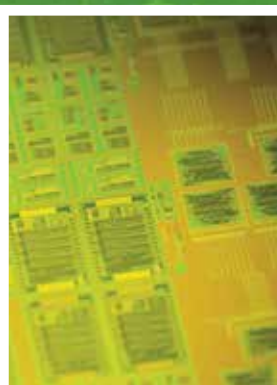
- High-Leverage Practices List
- Mathematical-Knowledge-for-Teaching Item Development Tools
- Performance Assessment Involving a Standardized Student
- Style Shifting Program
- Templates for Assessments of High-Leverage Practices

ELECTRICAL ENGINEERING & COMPUTER SCIENCE

- 3D Swizzle Switch with Built-In Arbitration
- 3G Universal Plug-in for Car Remote Starters, Key Fobs and Alarm Systems

TODAY'S **INNOVATIONS** *for a* BETTER **TOMORROW**





9T and 11T SRAM Cells with Improved Write Noise Margin

A 1.6nJ/bit, 19.9uA Peak Current Fully Integrated 2.5mm2 Inductive Transceiver for Volume-Constrained Microsystems

A 300nW Near-Threshold 187.5 - 500 kHz Programmable Clock Generator for Ultra Low Power Internet of Things Applications

A C-Q Delay Measurement Circuit for Flip-Flop Testing

A Method for Controlling Phase and Power Flow of Electromagnetic Fields

A Method for Generating Provably Secure Random Numbers with the Least Assumptions

A Method for Predicting the Maliciousness of Networks

A Method for Quantifying the Maliciousness of Networks

A Method for Randomness Expansion Using Untrusted Quantum Devices

A Microsystem to Extract Volatile Compounds from Liquid Media

A Multi-chopper Amplifier for Neural Signal Recording

A Pipeline for Out-of-Order Execution of Stack Instruction Sets

A Reconfigurable Sense Amplifier

A Sense Amplifier for 6T SRAMs with Passive Pre-amplification of Bitline Differential Voltage

A Traction System for Vehicles

Adaptive Battery Supervisory Circuit with Battery Internal Resistance Monitor

An 8.1nJ/b 2.4GHz Short-Range Zigbee Compatible Receiver with Near-Threshold Digital Baseband in 65nm CMOS

An Energy-Efficient Network Architecture for Low Duty-Cycle for Wireless Communication

An Oscillator Regulation Scheme Using Frequency Feedback

An Out-of-Order Pipeline with Memory Contents Preserved in the Register File

Bitline Physical Unclonable Function

Bitstream Beam-Former with Integrated Array of Continuous-Time Bandpass $\Delta\Sigma$ Modulators

BumpFree: Real-Time Warning for Distracted Pedestrians with Smartphones

Cell Failure Analysis of Lithium-ion Batteries

Current-Mode Correlation Architecture for Spread-Spectrum Receivers

Decorative Semi-transparent Photovoltaics Creating Angle Insensitive Transmissive Colors

Detecting Irregular Retransmissions

Digital Output Fluid Flow Sensor

Directly Heated Phase Change Switches

Dynamic Range Extension Scheme for Time-of-Flight 3D Camera

Efficient Memory Consistency Models Using Dataless Coherence

Efficient Over-the-Air Block Transfer for Low-Power and Batteryless Embedded Devices

Electromagnetic Energy Transducer for Energy Harvesting or Mechanical Actuation

Electrostatic Discharge Clamp Circuit for Ultra-low Power Applications

Exciton Management in Organic Photovoltaic Multi-donor Energy Cascades

Exciton-Blocking Phosphonic Acid-Treated Buffer Layers for Organic Photovoltaics

Extended OLED Operational Lifetime through Doping Profile Management

Fabrication of LED Displays Combining Thin Film Inorganic Light Emitting Diodes with Organic Light Emitting Diodes

Fast-Switching between Tightly-Coupled Heterogeneous Cores

Flexible Antenna Integrated with an Epitaxial Lift-off Solar Cell Array

Floating-Gate Transistor Array for Performing Weighted Sum Computation

Fully-Synthesized True Random Number Generator

Hallway-Based Automatic Indoor Floor Plan Construction Using Room Fingerprints

Hardware Acceleration for Unstructured Big Data and Log Processing

Hardware Acceleration for Unstructured Big Data Processing

Hardware Counters to Predict Software Resource Requirement

Heterodyne Nanoelectronic Vapor Sensor

High-Efficiency Multiple Junction Small Molecule Photovoltaic Cell Design

High-Efficiency Single Cell Capture Scheme for Rare Cells in a Small Sample Volume

High-Efficiency Small Molecule Tandem Solar Cell

Hybrid Planar-Mixed Heterojunction with a Fullerene-Based Exciton Filter

Imaging of Oil Well Fracture Using Injected and Distributed Magnetoelastic Pseudoparticles and Interrogating Antenna Arrays

In-memory Computing and Reconfigurable BCAM/TCAM/SRAM

In-Order Execution in Out-of-Order Cores

Incremental Sigma-Delta Capacitance-to-Digital Converter

Inferring TCP Initial Congestion Window

Integrated LCC Compensation Topology and Coil Configuration for Wireless Charger in EVs and PHEVs

Integration of Epitaxial Lift-off Solar Cells with Mini-parabolic Concentrator Arrays via Printing Method

Laser Active Optical System

Level Conversion Circuit Using Bootstrapped Capacitor

Majorization Method for Fast Parallel MR Image Reconstruction

MASK: Masquerade of Mobile Applications against Behavioral Tracking

Mechanical Amplifier for Energy Transducer Devices

Memory Aware Scheduling and Cache Access Re-execution

Memristor Crossbar Memory for Hybrid Ultra-low Power Hearing Aid Speech Processor

Metamaterial Sensor Platforms for Terahertz DNA Sensing

Method and Apparatus for Inferring State Transitions in a Wireless Communications Network

Method and Apparatus for Normailizing Communications Network

Method and Apparatus for Performing a Demotion in a Cellular Communications Network

Method and Apparatus for Providing a Dynamic Inactivity Timer in a Wireless Communications Network

Method for Rapid Magnetic Resonance Imaging with Spectral Tailored Signal Recovery Pulse

Methods for Generic Quantum Simulation Using the Stabilizer Formalism

Methods for Increasing Transmission through Scattering Random Media

Minimally Invasive Intracranial Hermetic Medical Device

Mixed Layer Crystallinity by OVPD Improves Performance of Organic Photovoltaic Cells

Monolithically Integrated Full-Color Nano-LED Arrays

Monolithically-Integrated Micro-LEDs on Silicon Substrate for Implantable Neural Probes

Multi-camera Calibration System

Multi-film Roll Transferring Process Using Highly Conductive and Solution-Processed Silver Solution for Fully Solution-Processed Polymer Solar Cells and Polymer LEDs

Nanowire-Based Schottky Diode Structure

Near Cache Computing

Non-destructive Wafer Recycling for Epitaxial Lift-off Thin Film Device Using a Superlattice Epitaxial Protection/Buffer Layer

Non-destructive Wafer Recycling for Fabrication of Thin-Film Inorganic Light Emitting Diodes for Display Application

Non-destructive Wafer Recycling for III-V Thin-Film Transistor Based Logic Gate and Display/Image Sensor Backplane Circuits Fabrication on Stretchable Substrate

Robust 13T SRAM Cell for Improving Write Margin in Ultra-low Power Applications

On-Chip CMOS Wake-up Timer Using a Constant Charge Subtraction Scheme

Operating a Network Using Relational Database Methodology

Polymer Photovoltaic Cells with a Graded Active Region Achieved Using Double Stamp Transfer Printing

Power-Aware Networks-on-Chip through Routing and Topology Reconfiguration

Printed-Circuit Tensor Impedance Surfaces

Q-Learning on Crossbar Fabric

Real-Time Battery Thermal Management for Electric Vehicles

Real-Time Prediction of Battery Power Requirements for Electric Vehicles

Reconfigurable Sense Amplifier for 6T SRAMs with Auto-Zero Calibration and Preamplification

Rotation-Invariant Local Radius Index (RI-LRI)

Scalable High-Performance Magnetoelastic Tags Using Frame-Suspended Resonators

Self-Oscillating Switched-Capacitor DC-DC Converter

Single Cell Detachment and Retrieval in the Microfluidics

Sub-ITO Grid for Outcoupling Waveguided Light in OLEDs

TCP Flow Clock Extraction

Thermally Assisted Cold Weld Bonding under Vacuum for Epitaxial Lift-off Process

Thin Disk EDP-Laser Amplifier

Timing Analysis and Correlation Synthesis of Stochastic Circuits

Tomographic Image Reconstruction Using Linearized Augmented Lagrangian Method

Trace-Based Phase Prediction for Tightly-Coupled Heterogeneous Cores

Transforming Designs with Clock Gating to Two-Phase Latch Timing

Ultra-low Power Temperature Insensitive Current Source with Line and Load Regulation

Ultra-thin Doped Noble Metal Films for Optoelectronics and Photonics Applications

Uncooled, Highly Sensitive Bowtie Nano-antenna Embedded IR Detector

Unidirectional Near-Field Focusing

Unified Diagnosis and Reconfiguration for Frugal Bypass of Faults in Networks on Chip

Using Entropy Calculation to Analyze Scores in Graded Assignments

Using Mobile Devices for Aphasia Rehabilitation through Automatic Speech Scoring and Analysis

Vehicle Speed Profile Prediction Using Neural Networks

Wire Grid Polarizers with Suppressed Reflection for Display Applications

ZMap Network Scanner

Method and Apparatus for Characterizing Infrastructure of a Cellular Network

EMERGENCY MEDICINE

A Control Mechanism for Optimization of Negative Pressure Ventilation (NPV) and Positive Pressure Ventilation (PPV) Ventilation Systems

Airway Support Device

Assessment and Prediction of Cardiovascular Status during Cardiac Arrest and the Post-resuscitation Period Using Signal Processing and Machine Learning

Means for Continuous Monitoring during Permissive Hypotension for Critical Care

Methods and Apparatus for Optimizing Therapeutic Temperature Control

Novel Chemical Oxygen Generation System

Segmentation and Fracture Detection in Title CT Images for Traumatic Pelvic Injuries

EPIDEMIOLOGY

Bacterial Cell-Cell Signaling Molecules as an Indicator of Periodontal Disease

Use of Arginine as Biofilm Destabilizer

FAMILY MEDICINE

ColoDATES: An Interactive Web-Based Decision Aid to Help Clarify Patients Preference Regarding Colorectal Cancer Screening

GASTROENTEROLOGY

MyChemoCare

Peptides Specific for Claudin-1 and Uses Thereof

Peptides Specific for Epithelial Growth Factior Receptor and Uses Thereof

GEOLOGICAL SCIENCES

Device for Separating Boron from Carbonate

HEMATOLOGY/ONCOLOGY

9H-Pyrimido[4,5-B]Indoles as BET Bromodomain Inhibitors

Deubiquitinase Inhibitors as Therapeutic Agents

Indoloquinolone Compounds as Anaplastic Lymphoma Kinase (ALK) Inhibitors

Small-Molecule Inhibitors of BET Bromodomains

Targeting Siglec-G and CD24 for Improving Outcomes after Allogeneic Cellular Transplantation

HUMAN GENETICS

Method for Efficient Ligation of Oligonucleotide to Single Stranded cDNA or RNA

HUMAN RESOURCES

MHealthy Active U iOS App

INTERNAL MEDICINE

A Hyperlink-Based Learning Tool for Reading Scientific Articles

An Assay for Screening and Monitoring of Sickle Cell Disease

Analogs of Fexaramine and Methods of Making and Using

Artificial Intelligence Text Messaging Support for Medication Adherence

Biomarkers and Methods for Progression Prediction for Chronic Kidney Disease

Combination Rectal Therapy for Urgency Associated with Ulcerative Colitis

EMT-Based Prognostic Signature for Non-small Cell Lung Cancer

Generation of Transgenic Mice with Colon-Specific Mosaic Cre Expression (CDX2P-G22Cre Mice)

Maturation of Human Stem Cell Derived Cardiovascular Cells and Tissue for Drug Toxicity Testing

Nanoemulsion Wound

Small Molecular Compounds for Arthritis and Bone Erosion Treatment

Structural Determinants of Lectin Mitogenicity

Topical Nanoemulsion Therapy for Burn Wounds

Ultrasound Lung Water Measurement

KINESIOLOGY

Isolation and Measurement of Noise during Electrophysiological Recordings

MATERIALS SCIENCE & ENGINEERING

Apparatus and Method for Mobile Refining of Fuel Products

Embolic Fluid-Based Therapy to Occlude Atrial and Ventricular Septal Defects

Improved Organic Vapor Jet Printing Nozzles with Exhaust Plenum

Low-Profile Solar Concentrator with Autonomous Self-Tracking

Self-Powered Photovoltaic Ion Sensor

Wettability Engendered Templated Self-Assembly (WETS) for Fabricating Multi-phasic Particles

MECHANICAL ENGINEERING

A Flexible, MEMS-Based Cochlear Implant

A Nanoparticle Trapping Slow-Light Photonic Crystal Biosensor

Active Assist Stage for Scanning Applications

Bioimpedance and Ultrasound Method to Estimate Edema Status

Blast/Impact Frequency Tuning and Mitigation

Dual-Layer Surface Haptic Device

Efficient Hybrid Energy Storage System

Fiber-Reinforced Elastomeric Enclosures

Growth and In Situ Stress-Driven Transfer of Graphene from Ni onto SiO2

High-Performance Battery Electrodes by Self-Assembly Processing

IMU Array for Assessing Proper Head and Torso Posture during Tackling

Integrated Localized Surface Plasmon Resonance Sensor in an Optofluidic Device

Materials for High-Density Natural Gas Storage

Mechanical Actuation Needle Core Biopsy Device

Method for Measuring the Contraction and Force of Soft Pneumatic Actuators

Microfluidic Actuators with Integrated Addressing

Miniature Piezoelectric Cardiovascular Monitoring System

Plasma Doping of Two-Dimensional Materials for Making Nonvolatile Multi-bit Data Storage Memory Devices

Regenerative Differential Powertrain with Embedded Vibration Absorber and Isolator

Smart Material Actuator Motion System and Method

Sparse-Structural Pattern for Fused Deposition Modeling

Systematic Configuration and Mode Design for Power Split Hybrid Vehicles Using Multiple Planetary Gears

MICROBIOLOGY & IMMUNOLOGY

An Extended Gene Cluster for the Biosynthesis of a Chemotherapeutic Natural Product

Anti-campylobacter Growth Inhibitors

Antivirals against Norovirus

Concept and Methods for Interdicting Norovirus Outbreaks Using Genetically Engineered Probiotics

MOLECULAR AND INTEGRATIVE PHYSIOLOGY

A Procedure to Isolate and Enrich Thermogenic Beige Fat Precursors from Human Subcutaneous Depot and an Engineered 3D Culture System for Autologous Transplant

Fixed Combination of IKKe/TBK1 Inhibitors with Beta Adrenergic or Sympathetic Nervous System Activators for the Treatment of Obesity and Metabolic Syndrome

MOLECULAR CELLULAR DEVELOPMENTAL BIOLOGY

GRASP55 Rabbit Polyclonal Antiserum (N-Terminal): Antigen, GST-Rat GRASP55 Aa1-212; 10 Ml or More. WB: Rat, Human; IF: Rat, Human; And GRASP55 Rabbit Polyclonal Antiserum (C-Terminal): Antigen, GST-Rat GRASP55 Aa232-End; 10 Ml. WB: Rat, Human; IF: Rat, Human

Protein Stabilization by Inorganic Polyphosphates

MOLECULAR PHYSIOLOGY

Carbamoyl Phosphate Synthatase-1 is a Prognostic Biomarker in Acute Liver Failure

ECG Data Processing Method and Matrix Display

FLIC: High-Throughput, Continuous Analysis of Feeding Behaviors in Drosophila

Pharmacological Methods for Treating Obesity and Autophagy Defect-Associated Diseases

Publication Database and Modelling of Working-Hypotheses

NAVAL ARCHITECTURE MARINE ENGINEERING

Passive Peak Strain Sensor

Smartphone Compatible Gears for Swimmers and Divers

Visual Localization within LIDAR Maps for Automated Urban Driving

NEUROLOGY

A Forebrain Model of DYT1 Dystonia

A Global Genetic Model of DYT1 Dystonia

Assay for mTOR Activation and Epilepsy

Floxed Tor1a Mice

FMR1PolyG Antibodies

Sleep Educational Website

The Lesion: Charcots Tournament

NEUROSURGERY

A Hemostasis Method with Cold Thrombin Mist and Energy-Based Coagulation

Implantable Intracerebral Needle Guide

Simvastatin to Treat Bone Cancer

NURSING

Home Care App

Pregnancy and Traumatic Stress Psychoeducation Program

Self-Instructional Voiding/Intake Diary and Individualizing Target Bladder Health Goals through Beverage Management

OBSTETRICS & GYNECOLOGY

P&G Protocol

Urinary Biomarkers of Lower Urinary Tract Symptoms in Women with Cystocele

OPHTHALMOLOGY

Circular Cutting Capsulorhexis Device

Laser Retinectomy for the Treatment of Glaucoma and Ocular Hypertension

Nanoparticle Therapy in Cancer

Occludin Point Mutants to Control Pathologic Angiogenesis

Systems and Methods for Diagnosing Inherited Retinal Diseases

The Eyes Have It Mobile Application

OTHER

- Policy Persuasion Tool
- Apple iBook: Get Involved!
- Apple iBook: Greek Life 2013: Fraternities and Sororities at the University of Michigan
- Apple iBook: My Unions Are For Me: University Unions Student Orientation Guide 2013
- Apple iBook: University of Michigan Panhellenic Association: Your Guide to Recruitment 2013
- Fibrocyte Cell Therapy in Sepsis
- Gate Raise System
- International Field Directors and Technology Conference App
- Method for Predictive Modeling
- Network Security Monitoring System for Determining Cost of Insurance
- One Cool Thing App for Michigan Engineering
- Stay in the Blue App
- Task-Enabling Exercise
- The Positive Leadership Game
- University Unions Parent and Family Visitors Guide 2013

OTOLARYNGOLOGY

- A Method to Establish Cell Lines from Primary Tumor Care

PATHOLOGY

- 1H-Pyrazolo[3,4-b]Pyridine Analogs as a Novel Class of Mcl-1 Inhibitors
- Activating Estrogen Receptor Mutations in Hormone Resistant Metastatic Breast Cancer
- Biomarker for Tuberculosis Infection
- Genomic Variant Analysis Tool
- Identification of Outlier Kinase Expression by RNA Sequencing as Targets for Precision Therapy
- MAP2K1 Mutations in Langerhans Cell Histiocytosis
- Interactors of RAS
- Oncogenic TYK2 Gene Fusions in Cancer
- PLUTO Transcripts in Prostate Cancer Progression
- Rapid Primer Design from Next-Generation DNA Sequencing
- RAS Engagement of AGO2 Attenuates RNA Silencing to Promote Oncogenesis
- The Landscape of Antisense Gene Expression in Human Cancers
- The Landscape of Long Non-coding RNAs in Cancer
- Therapeutic Targeting of BET Bromodomain Proteins in Castration Resistant Prostate Cancer
- Tumor Suppressor in Castrate Resistant Prostate Cancer

PEDIATRICS

- A Method for Detection of Proteinuria and Induction of Podocyte Injury in Transgenic Zebrafish
- Catheter Deliverable Pulmonary Valve
- Determining AED Location Using Smartphone Technology
- Development of a Prosthetic Flared Shunt for Congenital Heart Defects
- Method for Bacterial Species Identification and Strain Typing

PHARMACOLOGY

- Nitric Oxide Synthase Proteins

PHARMACY

- Antiviral Benzamides
- Biocatalytic Synthesis of Macrolide Antibiotics
- Biologically Active Aqueous Formulations of MET-12 Peptide
- CNS-Permeable Inhibitors of Glucosylceramide Synthase
- Composition of Synthetic HDL Nanoparticles and Optimized Treatment Regimen for Sepsis
- Construction of Inner/Outer Core-Less E. coli Cell Line
- Delivery Drugs and Nucleotides to ScavengerReceptor Expressing Cancers by Synthetic HDL6
- Efficient Aqueous Encapsulation and Controlled Release of Bioactive Agents
- Heart Failure Application
- Inhibitors of Rho/MRTF/SRF Gene Transcription
- Lipid-Based Vesicles and Gold Hybrid Nanoparticles for Drug Delivery Applications
- Lipid-Biopolymer Hybrid Nanoparticles for Drug Delivery Applications
- Markers of L-Carnitine Drug Response in Patients with Sepsis
- NIR-Induced Dissociation of Thermo-Cleavable Magnetic Micelles for Morphology Transformation and Controlled Drug Release
- Regio- and Stereoselective Enzymatic C-H bond Oxygenation through Substrate Anchoring
- Selective Inhibitor of T315I c-Abl
- Structural Class of Broad Spectrum Antibiotics Derived from a Marine Microbial Natural Product
- Targeted Cancer Stem Cell Inhibitors for Cancer Therapy

PHYSICAL MEDICINE & REHABILITATION

- A Direct Selection Brain-Computer Interface for Multiple Choice Testing
- Sit to Stand Walker Attachment

PHYSICS

- A Miniature Mechanical Shutter
- An Optoelectronic Neutron Detector
- Directional Neutron Detector with Integrated Moderator
- Absolute Calibration of Magnetic Fields Using 3He Magnetometry
- Charging and Discharging of Lichtenberg Electrets
- Guard Flow Organic Vapor Jet Printing Implementation
- High-Efficiency Small Molecule Single-Junction Organic Solar Cell Based on DTDCPB Donor
- Highly Efficienct Triple- and Four-Junction Small Molecule Photovoltaics
- Increasing Blue PHOLED Operational Lifetimes 100X–1000X via Excited State Management
- Organic Electrophosphorescent Light Emitting Concentrator
- Software in Support of ECoach and Related Projects
- System to Record Video of a Specific Object

PSYCHIATRY

- Mindfulness Manager, an IPhone App to Monitor One's Mindful Awareness
- Telephone-Delivered Insomnia Therapy

PUBLIC HEALTH

- A Software System for Supporting Ongoing Research Data Capture as Part of Routine Parent Care Processes
- A YouTube Channel Communicating about the Science behind Human Health Risks
- Inkblots

RADIATION ONCOLOGY

- Bub1: A Novel Target for Inhibition of TGFbeta Signaling
- Therapeutic Targeting of Mutant KRAS

RADIOLOGY

- Dual-Inhibitor Antitumor Compounds
- Dual Inhibitors of Lipid and Receptor Tyrosine Kinases
- Fluorine-18 Reactions in Aqueous Ethanol
- Photoacoustic Physio-Chemical Tissue Analysis
- Ultrasound Method and Device for Measuring Brain Blood Flow in Neonates

SOCIAL WORK

- Evidence-Based Common Elements Modules
- MDad
- Mobile Dad

SURGERY

- A Biological Venous Flow Assist Device
- Clinical Performance Improvement: Using Electronic Medical Records Data for (1) Data Acquisition and Validation, (2) Analytics and Benchmarking, and (3) Quality Improvement
- e-Consent
- Gated-Spiral Membrane Lung
- Michigan Surgical and Health Optimization Program (MSHOP)
- Prognostic Gene Signature in Renal Cell Carcinoma
- Targeting IL-22 Signaling and DOT1L Pathway to Treat Colorectal Cancer
- Targeting MDSC via CD33 Antigen to Treat Human Solid Cancer
- Use of Effector B Cells for Cancer Immunotherapy

SURGERY, CARDIAC

- Creation of Neovasculature
- Device for Lymphatic Regeneration

SURGERY, PEDIATRIC

- Dilating Fenestrated Mesh for Internal Selective Attachment to Soft Tissue Organs
- Successful Laboratory Plan and Budget Development
- Utilizing M-Phenylenediamine as a Protective Coating for Electrode Sites

SURGERY, PLASTIC

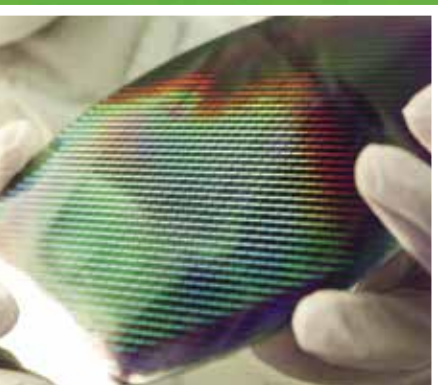
- Materials and Surgical Toolkit for Treatment of Neuromas
- Sensors to Modify Positioning for Patients at Risk for Pressure Ulcers
- Use of Adipose Derived Stem Cells Over Expressing ALK2 Receptors for Bone Regeneration

SURGERY, VASCULAR

- Device to Prevent Cerebral Ischemia during Percutaneous Aortic Valve Replacement
- New Panel to Rule-In Deep Vein Thrombosis
- Temporary Endovenous Balloon Catheter

TRANSPORTATION

- Body Shape Modeling and Presentation System
- Concentrated Development, Testing and Evaluation Environment for Wireless and Automated Transportation
- Pedestrian and Bicyclist Safety through Wireless Communication
- RF Patch Antenna Target to Identify Trailer Location on Articulated Vehicles
- RF Patch Antenna Target to Identify Vehicles, Other Road Users, and Non-moving Objects
- Surrogate Vehicle Target for Testing Crash Avoidance Vehicle Technologies
- Website for Parents of Teen Drivers
- Website for Parents of Teen Drivers in Michigan



HUB FOR LAUNCHING HIGH-GROWTH U-M STARTUPS

U-M Tech Transfer Venture Center

In 2009 U-M Tech Transfer created the U-M Venture Center to be a one-stop hub for entrepreneurs and investors interested in a U-M startup opportunity. Over the last five years, the Venture Center has provided a wealth of guidance, talent, funding and resources to create an impressive array of new startups based on U-M intellectual property. In FY14, the Venture Center helped to launch 14 exciting new startups, a new record for U-M.

The Venture Center has a core staff of two venture creation specialists who work with their licensing peers in U-M Tech Transfer to assess new opportunities and provide hands-on assistance to build attractive, venture-quality new startup models. Other Venture Center resources include:

Funding

- "Gap" funds to address commercial validation and market readiness
- Access to translational funds for technical readiness
- Access to grant, pre-seed, angel and venture capital funds, including U-M MINTS venture funding

Talent

- Mentors-in-Residence—experienced entrepreneurs embedded within Tech Transfer offering venture creation services
- Advisors and consultants to address key business and technical issues

Other

- Venture Accelerator—for launched U-M startups
- Venture Center workshops and events
- Access to a wide array of University and regional partners with expertise and resources

Mentors-in-Residence are seasoned, proven entrepreneurs "embedded" within the Venture Center, providing hands-on assistance with invention assessment, customer and market identification, venture modeling and extending our connections to key resources and partners.

2014 STARTUP CLASS

Last year, the U-M Venture Center helped to launch 14 startups, bringing the total number of companies in its portfolio to 130.

Animal Diversity Web
A regionally customizable mobile field guide for fauna identification

Battery Nano Technology
Novel lithium ion battery technology for greater safety and significantly higher performance

Collabrify.IT
Software that allows developers to easily and inexpensively create apps to support synchronous collaboration

Court Innovations
Improving the justice system's accessibility through online, guided negotiation between courts and citizens

Diamond Kinetics
Motion tracking and analysis tools to improve player performance in baseball and softball

HygraTek
Advanced omniphobic surface coatings and low-energy oil/water separation systems

Inmatech
Supercapacitor with improved safety and significant cost savings

LFLA
Flexible concrete solutions for civil infrastructure systems

Maize Analytics
EMR privacy and security through big data analytics

Mia Motors
Energy storage and wireless charging systems for electric vehicles

ONL Therapeutics
Therapies to protect photoreceptors and preserve patient vision from retinal diseases

Optimal Process Technologies
Innovative and intelligent technologies for the joining of dissimilar materials with production line quality assurance

PhasiQ
Solution microarrays for the sensitive, precise quantitation of protein biomarkers

Ventris Learning
Educational curriculum for young children to reduce the black/white reading gap

"Osage University Partners analyzed the new venture creation organizations at many of the top universities. We found the U-M Venture Center has a robust process with resources to create valuable startup opportunities, and a track record that places it among the top universities in startup investment performance."

MARC SINGER | Managing Partner, Osage University Partners

SPEEDING THE DEVELOPMENT OF SOFTWARE-BASED PRODUCTS

The Digital Discovery Center

"With DDC's help…we produced a much better, more focused concept."

University of Michigan faculty are increasingly coming up with software innovations as part of their research mission. But are those ideas viable? Do they meet real market needs? And what are the critical market requirements that can make or break a new innovation?

Since January of 2014, faculty have been finding the answers to those questions at Tech Transfer's Digital Discovery Center (DDC). This "front-door" resource, being lead by Drew Bennett of U-M Tech Transfer, was launched with a two-year, $650,000 grant from the William Davidson Foundation and, more recently, as part of a broader grant from the Michigan Economic Development Corporation.

At the DDC, faculty work with teams that can include commercial software experts, consultants in market development and compliance issues, IT developers and Venture Center mentors. Over a four- to six-week period, the teams concept-harden their ideas, assess commercial opportunities and create models to accelerate the commercial pace of their software innovations.

Initially focusing on health IT applications, the Center has completed 23 projects within its first seven months of operation. For one project, the NPO Calculator, the DDC worked with pediatric plastic surgeon Christian Vercler, MD, pediatric urologist Julian Wan, MD and pediatric anesthetist Thuy Phan, CRNA to lay the groundwork for an app to let parents know, hour by hour, what their child can eat and drink prior to any given medical test or procedure.

As Vercler explains, "We came to the Center with a general concept to improve patient care and reduce the costly delays that occur due to noncompliance with preoperative instructions regarding when food and drink can be taken." "With DDC's help," added Wan, "we developed a value proposition, a series of primary use cases and a full set of comps and wireframes to demonstrate the user interface. The DDC also helped with an initial compliance and technical review, including FDA regulatory requirements. It was intense, but we produced a much better, more focused concept."

Drew Bennett and his Digital Discovery team help faculty establish a value proposition for their idea and provide visualization and technical assessments that move the concept from theory to wireframes and initial screens. Compliance experts are brought in to provide guidance on regulatory, privacy and security issues.

U-M TECH TRANSFER NATIONAL ADVISORY BOARD

The U-M Tech Transfer National Advisory Board (NAB) was founded in 2002 to provide advice and connections to enhance tech transfer performance. Composed of industry, venture, government, university and community leaders, the NAB has transformed the University and our region with several initiatives, including Ann Arbor SPARK, the Catalyst Talent Network and the U-M Venture Accelerator.

The NAB is now helping in the launch of a U-M "Commercialization Fund" to provide additional resources to enhance our capabilities in creating valuable technology-based opportunities for existing businesses and new startups. The goal is to raise $10 million from donors and foundations who share our vision of increasing the economic, educational and societal impact from University research discoveries.

NAB Members

Wendell Brooks
Intel Capital
San Francisco, CA

Thomas Bumol
Lilly Research Lab and
Applied Molecular Evolution
San Diego, CA

Kristina Burow
ARCH Venture Partners
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Maria Thompson
Arsenal Venture Partners
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Jack Turner
MIT, Technology Licensing Office
Cambridge, MA

Tom Washing
Sequel Venture Partners
Boulder, CO

Teri Willey
Office of Technology Transfer
Cold Spring Harbor Laboratory
Cold Spring Harbor, NY

PARTNERSHIPS

Stimulating Innovation and Entrepreneurship

University partners such as Fast Forward Medical Innovation, the Center for Entrepreneurship, the Zell Lurie Institute, the Coulter Translational Research Partnership and others in the schools of Public Health, Information and Law help to create programs and resources to stimulate innovation and entrepreneurship activities among our students and faculty. Events and activities with University and regional partners, including Celebrate Invention and Entrepreneurs Engage, expand our talent networks and stimulate participation in innovation and entrepreneurship.

Expanding Economic Opportunities

Ann Arbor SPARK, our regional economic development partner, provides venture support services for many of our startups, and we partner on numerous business attraction, talent and infrastructure projects. The statewide Michigan Economic Development Corporation provides generous financial support to a portfolio of funding, talent and business development programs. Our U-M Business Engagement Center and sister corporate relations units in Engineering and Medicine partner with us to enhance the University's engagement with businesses and other organizations.

Venture Funding and Resources

U-M Tech Transfer enjoys a close relationship with the Michigan Venture Capital Association, working on programs that augment our relationships with premier venture capital firms who invest in our U-M startups. Many of our launched startups also benefit from our partnership with the U-M MINTS program, which provides venture funding alongside qualified venture partners. In addition, U-M Tech Transfer is part of Osage University Partners, a funding and resource collaboration founded by eight leading universities.

TECH TRANSFER
UNIVERSITY OF MICHIGAN

CONTACT US!

The U-M Tech Transfer team is ready to introduce you to your next big opportunity. Contact us at 734.763.0614, techtransfer@umich.edu or www.techtransfer.umich.edu

U-M TECH TRANSFER STAFF: (row 1, from left to right) Laura Charlick, Tom Marten, Diane Rice, Nadine Wong, Luana King, Sally Ingalls; (row 2) Jessica Soulliere, Elaina Zverina, Debbie Watkins, Lisa Johnson, Carmen Atkins, Maryann Kostiuk; (row 3) Jay Ellis, Mark Maynard, Robin Rasor, Ken Nisbet, Jack Miner, Tara Hartman; (row 4) Greg Choiniere, Brian Copple, Wes Huffstutter, Steve Maser, Ed Pagani, Rick Brandon; (row 5) Keith Hughes, Chris Fick, Drew Bennett, Dan Chagnovich, Tiefei Dong, Mike Psarouthakis. Not pictured: Jackie Borowski, Dennis Linder, Brad Martin, Katie Moynihan, Megan Reichert

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MIX
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COVER IMAGE: An artist's conception of neuroplasticity, the process in which neural pathways and synapses in the brain change and adapt.