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FIU NSF I-Corps Team Working on Commercialization of a Blood Alcohol Monitoring system

Every two minutes a person is injured in a drunk driving-related crash. Drunk driving costs the United States \$199 billion a year, and 50 to 75% of convicted drunk drivers continue to drink and drive on suspended licenses. According to data released in March 2016 by the National Highway Traffic Safety Administration (NHTSA), 32,675 people died in traffic crashes on the nation's roads in 2014, 31% of whom were categorized as alcohol-impaired-driving fatalities. In a survey conducted by the Centers for Disease Control and Prevention (CDC) in 2012, 29.1 million people admitted to driving under the influence of alcohol. According to the CDC, the average drunk driver has driven drunk an astonishing 80 times before first arrest. The statistics also show that about one-third of all drivers arrested or convicted of drunk driving are repeat offenders.

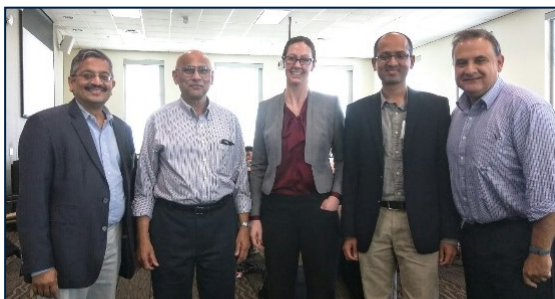
To address this very serious public health problem, a research team at FIU is developing an exciting tool, the Transdermal Alcohol Monitoring System (TAMS). Based on a fuel cell type alcohol sensor developed at FIU, TAMS technology has the potential to revolutionize the wearable alcohol monitoring market and to reduce significantly the incidence and prevalence of drunk driving, which will, in turn, decrease the number of people who perish annually due to alcohol-impaired-driving fatalities.

To explore the commercial viability and value of the TAMS technology, the FIU researchers applied – successfully – to the Na-

tional Science Foundation's (NSF) Innovation Corps (I-Corps™) training program. Their I-Corps team, comprising Principal Investigator Dr. Shekhar Bhansali, chair of the Electrical and Computer Engineering (ECE) Department; Entrepreneurial Lead Dr. Yogeswaran Umasankar, a postdoctoral associate in the ECE department; and Mentor Peter Hernandez, Director of Technology Management and Commercialization at FIU, completed I-Corps training at the NSF I-Corps node at Georgia Institute of Technology. Over the next seven weeks of the I-Corps training program, the TAMS team conducted nearly 140 customer discovery interviews to determine the most appropriate customer segments and value propositions for their wearable transdermal blood alcohol monitoring technology.

Dr. Umasankar described participation in the NSF I-Corps training program as “an amazing learning experience that transformed my view of commercialization.” The team learned many valuable lessons, particularly how to conduct proper customer discovery interviews, develop value propositions based on the information gathered from potential customers, and apply the business model canvas (part of the Lean LaunchPad methodology) that helps visualize the components needed to turn the customer needs and problems (or pains) into a profitable company. “The customer discovery process led us to a deep understanding of societal norms, opportunities and challenges with alcohol. It showed us the potential for our product,” said Dr. Bhansali.

The team members plan to continue the commercialization of the TAMS technology with the knowledge and experience they gained through participation in the I-Corps program. For more information on how to apply for the NSF I-Corps teams program, please contact Peter Hernandez, Director of the Office of Technology Management and Commercialization at (305) 348-30151 or via email at pphernan@fiu.edu.



L to R: Dr. Shekhar Bhansali; NSF Program Officer Mr. Rathindra DasGupta; NSF Program Officer Ms. Lydia V. McClure; Dr. Yogeswaran Umasankar and Mr. Peter Hernandez

Upcoming Events

April 2016

- **April 1, 9 to 10 am, EC 2300, *Current Clinical Status of Tissue Engineered Vascular Grafts in Heart Surgery***, presented by [Toshiharu Shinoka](#)
- **April 1, 11 am to 12 noon, PG5 #153 and BBC: MSB-105, *Forensic Science Research at the US Secret Service***, presented by Robert Ramotowski, Chief Research Scientist in the Forensic Services Division of the United States Secret Service
- **April 1, 1:30 to 12:30 pm, GL 100A, *LIGO, Squeezed States of Light, and Nonlinear Light-atom Interactions***, presented by [Eugeniy Mikhailov](#)—for more info [click here](#)
- **April 5, 10 am to 12 pm, AHC 4 #402, *IRB Part 1—Obtaining Approval***, please contact molinae@fiu.edu to register
- **April 7, 2 to 3:15 pm, PG5 #155, *The Organization of Indigenous Peoples of the Colombian Amazon (OPIAC) Adapts to Climate Change and Preserves Traditional Culture for a Post-Conflict Colombia***, panel discussion
- **April 8, 10 am to 4:30 pm, CBC #155, *Conference in Statistical Methods and Mentoring***
- **April 8 – April 10, Miami Convention Center, *13th Annual Conference of Society for Brain Mapping and Therapeutics***, [register](#) online
- **April 8, 12 to 1 pm, GC 277, *RCR in the Digital Age***, please contact Davfelix@fiu.edu to register
- **April 8, 12 to 1 pm, PG5 #155, *A Vesicle-associated Tyrosine Phosphatase PTP-MEG2 Regulates TrkA Transport and Signal Transduction***, presented by [Guangpu Li](#)
- **April 11, 12 to 1 pm, WC 130, *Teaching with Writing in STEM Courses: A Panel Discussion***, with Jennifer Bartman
- **April 11, 2 to 3 pm, GC 140, *Gentrification and the Magic City: Change and Challenges***, presented by [Paul S. George](#), [RSVP](#) required
- **April 12, 12:30 to 2:30 pm, AHC1 #110, *Summer Planning: How to Write a lot!***, please [RSVP](#)
- **April 13, 12:30 to 1:30 pm, AHC 4 # 402, *Informed Consent***, please contact molinae@fiu.edu to register
- **April 14, 12 to 1 pm, WC 130, *Biomolecular Sciences Institute lecture***, presented by [Milan Stojanvic](#)
- **April 15, 9 to 10 am, EC 2300, *WHC Seminar Series*** presented by [Prabir Patra](#)
- **April 15, 2 to 3 pm, ESC 241, *Computational Thinking*** presented by [Jeannette M. Wing](#)
- **April 18, 12 to 1 pm, WC 130, *Perspectives on Chemistry Education Research***, presented by [Sonia Underwood](#)
- **April 18-19, 9 am to 5 pm, Miami Beach Convention Center, *eMerge Americas Symposium—Innovation and Research—Smart Cities***, [additional information](#)
- **April 20, 12 to 1:30 pm, GL 100B, *RCR Data Acquisition, Management, Sharing and Ownership***, please contact Davfelix@fiu.edu to register
- **April 22, 9 to 10 am, EC 2300, *WHC Seminar Series*** presented by [Javier Jo](#)
- **April 22, 1:30 to 2:30 pm, GL 100A, *Nuclear Physics in Proton Therapy***, presented by [Cynthia Keppel](#), [additional information](#)
- **April 29, 10:30 am to 12 pm, MARC Pavilion, *NSF Funding Opportunities workshop***, presented by [Rajakkannu Mutharasan](#), [additional information](#), [RSVP required](#)
- **April 29, 2 to 3 pm, ECS 241, *Distinguished Women Lecture Series***, presented by [Rosalind Picard](#)

May 2016

- **May 5, 1 to 2 pm, AHC 4 #402, *Preparing for IACUC Site Visits***, please contact molinae@fiu.edu to register
- **May 10, 8 am to 5 pm, *South Florida Child Psychology Research Conference***, deadline for submissions is April 8, 2016, [additional information](#)
- **May 17, 1 to 3 pm, AHC 4 #402, *IRB Part 2—Managing your Approved Protocol***, please contact molinae@fiu.edu to register

Awards Received—February 2016

FIU researchers were awarded \$5,253,741 in February 2016. Below is a listing of awards received.

PI: Marisela Agudelo

COM IMMUNOLOGY

Award Action Type: Continuation

AWARDING SPONSOR: National Institutes of Health

TITLE: EtOH-induced Immunomodulation: Role of Histone Deacetylases **AWARD:** \$ 244,854

PI: William Anderson

COLLEGE OF ARTS SCIENCE & EDUC

Award Action Type: Increase

AWARDING SPONSOR: Consortium For Ocean Leadership

TITLE: IODP Expedition 346 Asian Monsoon **AWARD:** \$ 2,000

PI: Joann Arnowitz

JEWISH MUSEUM OF FLORIDA-FIU

Award Action Type: Initial

AWARDING SPONSOR: Miami-Dade County Cultural Affairs

TITLE: Discovery and Recovery: Preserving Iraqi Jewish Heritage **AWARD:** \$ 9,000

PI: Elizabeth M Bejar

PROVOST AND EXEC VP ACAD AFF

Award Action Type: Initial

AWARDING SPONSOR: University of Pennsylvania

TITLE: HSI-PATHWAYS Hispanic Serving Institutions: Pathways to the Professoriate **AWARD:** \$ 34,164

PI: Shekhar Bhansali

ELEC AND COMPUTER ENG

Award Action Type: Increase

AWARDING SPONSOR: National Science Foundation

TITLE: Graduate Research Fellowship Program **AWARD:** \$ 1,500

PI: Kevin Mershon Boswell

BIOLOGY

Award Action Type: Increase

AWARDING SPONSOR: Prince William Sound Science Center

TITLE: HRM - Non lethal sampling: In situ estimation of juvenile **AWARD:** \$ 56,202

PI: Jeffrey Allen Boyd

COM HUMAN AND MOL GENETICS

Award Action Type: Increase

AWARDING SPONSOR: FIU Foundation

TITLE: Baptist Cancer Research Lab **AWARD:** \$ 36,591

PI: Heather Bracken-Grissom

BIOLOGY

Award Action Type: Initial

AWARDING SPONSOR: National Science Foundation

TITLE: Collaborative Research: The evolution of bioluminescence **AWARD:** \$ 389,020

PI: Henry Briceno SOUTHEAST ENV RESEARCH CTR Award Action Type: Increase AWARDING SPONSOR: Environmental Protection Agency TITLE: WATER QUALITY MONITORING PROJECT FOR THE	AWARD: \$ 415,000
PI: Erika K Coles PSYCHOLOGY Award Action Type: Initial AWARDING SPONSOR: Nova Southeastern University TITLE: Behavior Assessment Team	AWARD: \$ 26,400
PI: Shannon Dick PSYCHOLOGY Award Action Type: Increase AWARDING SPONSOR: National Science Foundation TITLE: Graduate Research Fellowship Program	AWARD: \$ 1,500
PI: Kenneth Feeley BIOLOGY Award Action Type: Increase AWARDING SPONSOR: National Science Foundation TITLE: CAREER: Measuring the thermal tolerances of individuals	AWARD: \$ 100,459
PI: Rebecca Friedman PROVOST AND EXEC VP ACAD AFF Award Action Type: Initial AWARDING SPONSOR: European Commission TITLE: BILAT USA 4.0	AWARD: \$ 7,619
PI: Raul Gonzalez Jr PSYCHOLOGY Award Action Type: Initial AWARDING SPONSOR: National Institute on Drug Abuse TITLE: The Impact of Cannabis Use on the Neurocognitive Functioning	AWARD: \$ 429,807
PI: Boyuan Guan LIBRARY OPERATIONS Award Action Type: Initial AWARDING SPONSOR: University of Florida TITLE: Miami-Dade Bicycle Route Planner	AWARD: \$ 35,000
PI: Tomas R Guilarte ROBERT STEMPEL CPHSW DEANS OFF Award Action Type: Initial AWARDING SPONSOR: Environmental Health Sciences TITLE: Peripheral BDZ Receptor Biomarker of Neurontoxicity	AWARD: \$ 20,000
PI: Tomas R Guilarte ROBERT STEMPEL CPHSW DEANS OFF Award Action Type: Initial AWARDING SPONSOR: Environmental Health Sciences TITLE: Presynaptic Mechanisms of Lead Neurotoxicity	AWARD: \$ 20,000

PI: Mohammed A Hadi CIVIL AND ENVIRON ENGINEERING Award Action Type: Initial AWARDING SPONSOR: Metric Engineering TITLE: Creating Broward County Dashboard and Production of Monthly	AWARD: \$ 6,595
PI: Kathryn Elizabeth Brogan Hartlieb DIETETICS AND NUTRITION Award Action Type: Continuation AWARDING SPONSOR: Eastern Michigan University TITLE: Parent Focused Obesity Intervention for Low Income African	AWARD: \$ 5,862
PI: Pedro Pablo Hernandez OFFICE OF RSCH AND ECO DEVELOP Award Action Type: Increase AWARDING SPONSOR: Triangle Transit TITLE: Bus Stop Management System	AWARD: \$ 30,000
PI: Cheryl L Holder COM HUMANITIES HLTH AND SOC Award Action Type: Increase AWARDING SPONSOR: FIU Foundation TITLE: South Florida Transgender Women HIV Knowledge and Risk	AWARD: \$ 124
PI: Krishnaswamy Jayachandran EARTH AND ENVIRONMENT Award Action Type: Initial AWARDING SPONSOR: U.S. Department of Agriculture TITLE: Broadening Agriculture Science Education (BASE) for Hispanic	AWARD: \$ 250,000
PI: Leonel E Lagos ARC APPLIED RESEARCH CENTER Award Action Type: Increase AWARDING SPONSOR: General Infomatics Inc. TITLE: Cyber Space Technology Research and STEM Development	AWARD: \$ 50,000
PI: Angela Marie Richmond Laird PHYSICS Award Action Type: Increase AWARDING SPONSOR: National Institute on Drug Abuse TITLE: FIU-ABCD: Pathways and Mechanisms to Addiction in the Latino	AWARD: \$ 402,277
PI: Chengxian Lin MECHANICAL AND MAT ENGINEERING Award Action Type: Initial AWARDING SPONSOR: American Society of Heating Refrigerati TITLE: Guidance for CFD Modeling of Data Centers	AWARD: \$ 136,792
PI: Debra Lundy SCH OF HOSP AND TOURISM MGMT Award Action Type: Initial AWARDING SPONSOR: Miami Beach Visitor & Convention Authori TITLE: 2015 Annual South Beach Wine & Food Festival	AWARD: \$ 85,000

PI: Modesto A Maidique
DEPT OF MGMT AND INTL BUSINESS
Award Action Type: Initial
AWARDING SPONSOR: Miami-Dade County
TITLE: Chapmanville Leadership Development Program **AWARD:** \$ 342,125

PI: Mark A Marine
ARCHITCT AND THE ARTS DEANS OFF
Award Action Type: Initial
AWARDING SPONSOR: Florida Department of Transportation
TITLE: FDOT District VI Building envelope project-Phase 3 **AWARD:** \$ 10,436

PI: Michael Maunder
COLLEGE OF ARTS SCIENCE & EDUC
Award Action Type: Initial
AWARDING SPONSOR: FIU Foundation
TITLE: Tropical Conservation Institute **AWARD:** \$ 700,000

PI: Dana Lynn McMakin
PSYCHOLOGY
Award Action Type: Initial
AWARDING SPONSOR: National Institute of Mental Health
TITLE: Treatment Development Targeting Positive Affect Function in **AWARD:** \$ 3,505

PI: Norman D Munroe
MECHANICAL AND MAT ENGINEERING
Award Action Type: Continuation
AWARDING SPONSOR: Florida Agricultural and Mechanical Univ
TITLE: Florida Georgia Louis Stokes for Minority Participation (FGLSAMP) **AWARD:** \$ 7,500

PI: Norman D Munroe
MECHANICAL AND MAT ENGINEERING
Award Action Type: Continuation
AWARDING SPONSOR: Florida Agricultural and Mechanical Univ
TITLE: Florida Georgia Louis Stokes for Minority Participation (FGLSAMP) **AWARD:** \$ 40,500

PI: Norman D Munroe
MECHANICAL AND MAT ENGINEERING
Award Action Type: Supplemental
AWARDING SPONSOR: National Action Council for Minorities
TITLE: NACME Initiative at Florida International University **AWARD:** \$ 42,000

PI: Norman D Munroe
MECHANICAL AND MAT ENGINEERING
Award Action Type: Initial
AWARDING SPONSOR: University of Central Florida
TITLE: 2015-2016 NASA Hybrid Rocket Competition **AWARD:** \$ 1,500

PI: Edward P Murray
METROPOLITAN CENTER
Award Action Type: Initial
AWARDING SPONSOR: University of Miami
TITLE: Miami Dade PHCD Housing Studies **AWARD:** \$ 89,375

PI: Mesut Ozgen

MUSIC

Award Action Type: Initial

AWARDING SPONSOR: D Addario Foundation

TITLE: 2016 Guitar Festival

AWARD: \$ 1,500

PI: Nezh Pála

ELEC AND COMPUTER ENG

Award Action Type: Initial

AWARDING SPONSOR: University of Utah

TITLE: 3D Simulation of THz Plasmonic Structures

AWARD: \$ 17,763

PI: William E Pelham Jr

PSYCHOLOGY

Award Action Type: Initial

AWARDING SPONSOR: National Institute of Mental Health

TITLE: Examining Tolerance to CNS Stimulants in ADHD

AWARD: \$ 652,494

PI: Andy V Pham

LEADERSHIP AND PROF STU

Award Action Type: Initial

AWARDING SPONSOR: Texas Woman's University

TITLE: Inhibitory Control and Working Memory in Monolingual and Bilingual

AWARD: \$ 9,975

PI: Naphtali Rishe

COMPUTER INFO SCIENCES

Award Action Type: Increase

AWARDING SPONSOR: National Science Foundation

TITLE: I/UCRC Phase II: Center for Advanced Knowledge Enablement

AWARD: \$ 9,975

PI: Allan Rosenbaum

PUBLIC ADMINISTRATION

Award Action Type: Initial

AWARDING SPONSOR: Miami-Dade County Port of Miami

TITLE: XXII Inter-American Conference of Mayors and Local Authorities

AWARD: \$ 52,063

PI: Seyedmasoud Sadjadi

COMPUTER INFO SCIENCES

Award Action Type: Increase

AWARDING SPONSOR: Georgia Institute of Technology

TITLE: VIP Program at Florida International University

AWARD: \$ 71,473

PI: Misak Sargsian

PHYSICS

Award Action Type: Initial

AWARDING SPONSOR: Jefferson Lab

TITLE: Next Generation Nuclear Physics with JLab12 and EIC

AWARD: \$ 8,000

PI: Juan Pablo Sarmiento

EXTREME EVENTS RESEARCH CENTER

Award Action Type: Initial

AWARDING SPONSOR: United Nations Office for Project Service

TITLE: Disaster Risk Management in Business Education

AWARD: \$ 201,500

PI: Markus L Thiel

POLITICS AND INTL RELATIONS

Award Action Type: Initial

AWARDING SPONSOR: European Commission

TITLE: Miami Florida Jean Monnet Centre of Excellence (MF-JMCE) **AWARD:** \$ 86,610

PI: Mary Jo Trepka

EPIDEMIOLOGY

Award Action Type: Continuation

AWARDING SPONSOR: National Institutes of Health

TITLE: Neighborhood-Level Determinants of Delayed HIV Diagnosis **AWARD:** \$ 20,673

PI: Anna H Wachnicka Kosiorek

SOUTHEAST ENV RESEARCH CTR

Award Action Type: Initial

AWARDING SPONSOR: University of Miami

TITLE: Assessment of Hydro-Ecological Changes in Nearshore Areas of **AWARD:** \$ 29,007

PI: Eric Wagner

SCHOOL OF SOCIAL WORK

Award Action Type: Continuation

AWARDING SPONSOR: Ware Foundation

TITLE: Yoga as a Complement to Standard Care for Adolescents with Eating **AWARD:** \$ 60,000

Funding Opportunities

The funding opportunities are in a separate excel file, which includes a filter for agency, date and opportunity number.

Contact ORED Senior Leadership

Name	Title	Email Address
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