Excellence in Innovation Awards

Each year, the Excellence in Innovation Awards recognizes faculty for their efforts in taking inventions to market through the creation of new startups; commercialization to their new technologies; and advancing the research and development process through publishing their work in prestigious journals and securing competitive grants to support their projects.

2024 for Achievements July 2022 through June 2023

W. SCOTT BURGIN, MD
Professor and Cerebrovascular Division Chief, Department of Neurology, USF Morsani College of Medicine and Director, Comprehensive Stroke Center, Tampa General Hospital

In 2022-23, Dr. Burgin significantly advanced medical AI. His AI communication assistant, seeded by a $25K Florida High Tech Corridor Grant, empowers stroke patients with coherent, personalized dialogue through sophisticated natural language processing, leading to a provisional patent (#63447514) and the creation of iNur Technologies LLC along with two USF collaborators and a community business partner for commercialization. Dr. Burgin co-devised an AI system for stroke identification (Patent PCT Pub.#: W02022/046612). He co-founded Electron Transport Biotech LLC, formulating new small molecules for various medical issues with a USF colleague and a USF-CONNECT collaborator.

Under an entrepreneurial collaborative translational research agreement and with a strong working relationship, he worked with VuEssence Inc. to guide a Corridor-supported pre-clinical molecular biomarker to the clinical trial phase, which was presented at the 2023 International Stroke Conference. These efforts, exemplifying his commitment to translational research and entrepreneurial drive, mirror USF's vision and establish him as a healthcare innovation leader with additional patents pending.

ASHWIN PARTHASARATHY, PHD
Associate Professor, Electrical Engineering, College of Engineering

Dr. Paro c ro Po D

STEPHEN SADDOW, PHD
Professor, Electrical Engineering, College of Engineering

Within the 2023 fiscal year, Dr Saddow's technology disclosures have formed the basis of agreements and joint patent application filings with Biologic Input Output Systems, Inc. (BIOS), under a Master Sponsored Research Agreement, and Global ETS (GETS), under a collaboration agreement. Negotiations are in effect on license agreements with BIOS and GETS.

License discussions are also underway with Chordata Ltd. with respect to three granted US Patents based on Dr Saddow's research: 1. Electronic Component Authenticity Identification System and Related Methods; 2. System and Method for Testing Integrated Circuits Independent of Chip Package Configuration; and 3. Neural Electrode and Related Methods.

2023 for Achievements July 2021 through June 2022

Manish Agrawal, PhD
Professor, Information Systems and Management, Muma College of Business

Agrawal is the founder of EdVision, a National Science Foundation Small Business Technology Transfer Phase-I funded company. EdVision uses AI technologies, including reinforcement learning, to maximize the impacts of academic programs. EdVision currently focuses on doctoral students and uses granular data on coursework, publications, careers and job postings to provide personalized recommendations for students. This is one of the first commercial attempts to use AI technologies to improve higher education outcomes and has the potential to revolutionize higher education. EdVision began technology development with NSF Small Business Technology Transfer funding in July 2020, and obtained its first commercial customer, North Carolina State University, the following year. During this period, EdVision also began a proof-of-concept at USF with the School of Geosciences.

George Spirou
Professor, Medical Engineering, College of Engineering
Between July 1, 2021, and June 30, 2022, Spirou led several innovations to data visualization virtual reality software syGlass through his co-founded startup company IstoVisio, Inc. During this period, Spirou co-developed solutions for the software to be used by multiple collaborators, to host lectures in virtual reality and to be implemented into a high school neuroscience course. The software is involved in a corporate pilot program with a Fortune 100 company for a product launch in 2023. IstoVisio completed its first year of funding from a National Institutes of Health Direct to Phase II Small Business Innovation Research grant. Through the program, IstoVisio was selected to join the NIH Concept to Clinic: Commercializing Innovation program, through which personnel received coaching from industry expert advisors biweekly for six months. Spirou also co-published two research articles in Cambridge University Press and Physica A during this period and participated on several NIH extramural review panels.

2022 for

2021 for Achievements July 2019 through June 2020

Dr. Summer Decker and Dr. Jonathan Ford saw a desperate need to be met at the sudden outbreak of the COVID-19 pandemic; global shortages of testing supplies hampered efforts to diagnose and track the spread of the disease. Associate Professor Summer Decker and Assistant Professor Jonathan Ford of the Department of Radiology's 3D Anatomical Modeling and Printing Division led a team that worked around the clock over a period of weeks to create a 3D-printed swab. Working with colleagues who are experts in infectious diseases, the team tested prototypes and performed a head-to-head clinical trial comparing the new 3D-printed swab and the traditional swab which showed the new tool is the equivalent, and in some cases better than the swabs that had been in use. Since then, more than 40 million swabs have been created in over 30 different countries and have been credited by health and political leaders for aiding the response.

Dr. Sriram Chellappan of the Department of Computer Science and Engineering is the lead inventor on a patent-pending drone and artificial intelligence-enabled system for mosquito surveillance. Working with colleagues at the USF College of Public Health, Chellappan and his research team developed a system that would automatically detect sources of disease-carrying mosquito habitats from drone videos taken in sub-Saharan Africa. The information is fed back in real-time to local public health officials to eradicate the habitats. The system is the foundation for the startup Digitomy, LLC, which is engaging with local mosquito control boards in Florida as well as the authorities in India and Brazil. The project recently received grant support from the National Science Foundation.

Dr. Sara Smith, Assistant Professor of USF's ESOL and Foreign Language Education programs, invented an application that aims to improve vocabulary instruction for English language and dual-language learners. The novel Multimedia Augmented Reality Vocabulary Learning app, dubbed MARVL, builds on physical vocabulary flashcards with animated, bilingual augmented reality "teachers" who coexist in the child's environment and provide bilingual instruction. She also established a USF start-up company, Marvlous, LLC, which is currently licensing and further developing the technology.

2020 for Achievements January 2018 through June 2019

Dr. Venkat R. Bhethanabotla, Professor, Chemical & Biomedical Engineering, College of Engineering, is recognized for his achievements in inventing, patenting and licensing biological and chemical sensor systems for use in a number of fields from health care to computing devices. His research efforts recently resulted in two new patents, seven patent applications and three option-to-license agreements with three separate companies. Dr. Bhenthanabotla is the founder and co-founder of several startup companies that have been awarded additional financial support through both USF and federal agencies, such as the National Science Foundation. One of those companies, Path Optical Systems, was a finalist last year for the Cade Museum Prize – one of Florida's top recognitions for new innovations – for its small and affordable fiber optics techonology that transport information at the speed of light.

Dr. Kirpal S. Bisht, Associate Professor, Chemistry, College of Arts & Sciences, was nominated for his success in leading a collaboration with colleagues at USF Health's Department of Molecular Medicine in the development of a new ketamine analog drug to treat phantom pain, depression and epilepsy that was licensed in 2019 for commercial development. The analogs can be used at very low doses and demonstrate unique pain-relieving properties effective at one-tenth the induction dose and at a greatly reduced potential for drug abuse and negative side effects.

Dr. Dmitry Goldgof, Distinguished University Professor, Computer Science and Engineering, College of Engineering, was nominated in recognition of his prolific record as an inventor, which included four patents issued during the 18 months in the award period, three patent applications and two technologies licensed for further research and development. Dr. Goldgof is internationally known in the field of computer science and engineering as it applies to biomedical image analysis and its applications in improving the diagnoses of cancer, brain disorders and other medical conditions. In addition to his inventions, Dr. Goldgof was lauded for advancing his projects through successful winning federal grants and continuing to excel in basic research in his field, with 14 articles and dozens of conference papers accepted and published in leading journals during the nomination period.

Dr. Xingmin Sun, Associate Professor, Molecular Medicine, Morsani College of Medicine, is recognized for his research of Clostridium difficile, a toxin-producing bacteria that causes a severe form of diarrhea in people who have taken antibiotics that alter their normal intestinal microbial population. The infection has become a worldwide public health crisis. Dr. Sun has filed a series of patent applications on vaccines and is moving toward licensing his inventions for development as a potential treatment. Additionally, Dr. Sun is collaborating with USF chemists to develop antimicrobial agents to use against Clostridium difficile and continues to publish basic research that guides other scientists in the fight against it.

Dr. Daniel Yeh, Professor, Civil and Environmental Engineering, College of Engineering, is being recognized for his ongoing achievements in developing the NEWgenerator technology – which converts human waste to clean water, energy and nutrients that can be used in sustainable food production. Tested in both India and South Africa and showcased at the Reinvented Toilet Expo in Beijing, China, the NEWgenerator has received nearly $2 million in funding support from the Bill & Melinda Gates Foundation and the project has produced a series of new patents during the nomination period. The technology, which has received worldwide news coverage including a segment on The Daily Show with Trevor Noah, has been licensed to a commercial partner in India for production in that country and is the subject of other licensing negotiations worldwide.

2017 for Achievements in 2016

Dr. Anna Pyayt, Assistant Professor, Chemical and Biomedical Engineering, College of Engineering, was recognized for her Technology for early detection of pregnancy complications, chosen for USF site I-Corps program, successfully completing the site program and awarded a National NSF I-Corps Team grant.
Completed I-Corps program, winner of USF Foundation Bull Ring Accelerator Grant (BRAG) program and received $25,000 for the commercialization activities in Hemolix LLC, company that she co-founded. Published 7 papers and received award at IEEE Sensors conference.

Dr. Chuanhai Cao, Associate Professor, Pharmaceutical Sciences, College of Pharmacy, was recognized for Neurodegenerative research to the innovative understanding rooted in immunological basis for Alzheimer's and Parkinson's disease. Evaluating the effects of cell phone signal (EMF) and THC (tetrahydrocannaboid, a major molecule in marijuana) research in

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2014 for Achievements in 2013

Dr. Michael Fountain, Director of the Center for Entrepreneurship in the Muma College of Business and professor of Industrial and Management Systems Engineering, as well as Psychiatry and Behavioral Medicine, received the award for his pioneering work in the field of micro- and nano-lipid encapsulation technologies for commercial applications; for bringing two landmark liposomal products to the market; and for his role in launching the USF Student Innovation Incubat