Florida Inventors Hall of Fame Unveils 2025 Inductees: Celebrating the Visionaries Behind the Breakthroughs

TAMPA, Fla. (May 19, 2025) – The Florida Inventors Hall of Fame is proud to announce its 2025 Inductees: ten pioneering inventors whose groundbreaking contributions span disciplines ranging from nanotechnology and regenerative medicine to energy systems and video technologies. Their work has established and reshaped entire fields, propelled scientific progress, and exemplified the spirit of innovation that defines Florida's growing ecosystem of discovery and enterprise.

"The 2025 Inductees reflect the extraordinary breadth and depth of innovation flourishing in Florida and beyond," said Dr. Sylvia Wilson Thomas, Vice President for Research and Innovation at the University of South Florida and Chair of the Florida Inventors Hall of Fame Advisory Board. "These individuals have not only advanced their fields but have created real-world solutions with global impact. We are proud to celebrate their vision, perseverance, and ingenuity – the true hallmarks of innovation."

The 2025 Inductees are: **Cleopatra "Cleo" Cabuz**, a trailblazer in Micro Electro Mechanical Systems (MEMS) who revolutionized sensing capabilities across multiple industries; **Michael Francis**, whose groundbreaking contributions to regenerative orthopedic medicine and biomanufacturing technologies advanced clinical and translational science; **Joseph Iannotti**, whose landmark innovations in shoulder repair techniques and pre-operative planning software have reshaped surgical standards and clinical outcomes; **Hari Kalva**, a visionary leader in video compression and multimedia standards whose discoveries are foundational to today's global streaming and video technologies; **Nasser Kutkut**, whose novel technologies in electric vehicle battery charging and energy management systems propelled the global shift toward sustainable mobility; **Richard McCullough**, who was the first to discover regioregular polythiophenes, a class of conjugated polymers that catalyzed innovation in flexible electronics and solar energy; **Sumita Mitra**, whose globally recognized innovations in nanotechnology dental composites radically improved restorative materials and clinical outcomes; **Subhra Mohapatra**, whose innovations in cellular engineering and targeted nanoscale drug delivery opened new horizons in precision medicine and cancer therapeutics; **Edward Rosenthal**, whose invention of staged nutrient release (SNR) fertilizers significantly improved agricultural sustainability on earth and in space; **W. Greg Sawyer**, whose next-generation 3D bioprinting systems and implantable medical devices have revolutionized the design and function of medical implants. (Please see their short bios below.)

"So often, the transformative ideas that shape our daily lives begin quietly – in a lab, a notebook, or a moment of inspiration. By the time they reach society, these innovations feel inevitable, yet the names and faces behind them are too often unknown. At the Florida Inventors Hall of Fame, we are proud to shine a light on these remarkable individuals whose imagination, perseverance, and brilliance drive progress. This recognition not only honors their legacy, but also inspires the next generation of visionary thinkers," said Dr. Thomas, who is a 2024 Florida Inventors Hall of Fame Inductee and holds 13 U.S. Patents

The 2025 Inductees hold more than 460 U.S. patents and represent a distinct blend of academic excellence, entrepreneurial ingenuity, and scientific leadership. Since its founding in 2013, the Florida Inventors Hall of Fame has inducted 87 inventors, who collectively hold over 5,700 U.S. patents.

"From the founding of our country to today, innovation has been the driving force behind America's growth and resilience. The inventors honored this year embody the very spirit of American ingenuity," said Elizabeth Dougherty, Northeast Regional Outreach Director for the United States Patent and Trademark Office and a longtime member of the Hall of Fame's Advisory Board and Selection Committee, "They look at the world not as it is, but as it could be. Their work reminds us that the solutions to our greatest challenges are within reach when we remain curious, courageous, and committed. Recognizing these inventors ensures that we not only celebrate the outcomes of innovation, but also the extraordinary individuals who make it possible."

The Florida Inventors Hall of Fame is dedicated to honoring and preserving the legacy of Florida's most prolific and impactful inventors. Through its annual induction ceremony, IGNITE education

and outreach program, and the newly established Invention Convention Florida at the University of South Florida, the Hall of Fame seeks to inspire future generations of inventors and foster a culture of innovation across the state.

Nominations are open to all inventors (living or deceased) with a connection to the state of Florida. Inductees are selected through a rigorous review process conducted by a Selection Committee composed of distinguished leaders from academia, industry, and government.

The 2025 class will be formally inducted at the **Annual Florida Inventors Hall of Fame Induction Ceremony & Gala** on **Friday, October 31, 2025**, at the **Tampa Marriott Water Street**.

For more information about the 2025 Inductees, the Hall of Fame's mission, or to attend the Induction Ceremony & Gala, please visit www.floridainvents.org.

Introducing the 2025 Inductees to the Florida Inventors Hall of Fame:

CLEOPATRA "CLEO" CABUZ, Ph.D.
Retired Vice President of Technology and Partnerships, in Honeywell's Safety and Productivity Solutions, a $6B division of Honeywell International, Inc., Dr. Cabuz significantly advanced the field of Micro-electromechanical Systems actuators (MEMS) and pioneered a new family of ultra-low power and low-cost polymer-based electrostatic actuators with rolling contacts. Dr. Cabuz also served as the Vice President of Engineering and Chief Technology Officer for Honeywell's Industrial Safety business. With a career spanning industry and academia, Dr. Cabuz's groundbreaking innovations also include Integrated Systems for Chemical and Biological Analysis, especially multidisciplinary research programs leading to the successful demonstration of integrated systems for chemical and biological detection, for example, the MesoSniffer-Portable System for Land Mine Detection and the Micro Cytometer for Blood Analysis. Her innovations also advanced wireless systems and Internet of Things (IoT) in critical human safety applications such as fire protection, gas detection, and worker safety. Dr. Cabuz holds 59 U.S. patents. She is a member of the National Academy of Engineering and a Senior Member of IEEE. She was also recognized with several major Honeywell awards, including the 2000 Technical Achievement Award, the 2003 Lion's Award, and the 2011 Velocity Product Development Award. She is additionally an inductee of the MEMS Industry Group Hall of Fame and Honeywell's Inventor's Hall of Fame.

MICHAEL FRANCIS, Ph.D.
CEO of Asante Bio and Associate Professor of Orthopedic Surgery and Sports Medicine at the University of South Florida, Dr. Michael Francis is a pioneering biomedical engineer and inventor whose innovations have transformed regenerative medicine, orthopedics, and biomanufacturing. He has developed and commercialized dozens of advanced medical technologies, including electrospun implants and collagen microfiber sutures used in orthopedic and spinal procedures. His inventions are widely employed in rotator cuff repair, ACL regeneration, spinal fusion, and other musculoskeletal conditions, improving outcomes for thousands of patients each year. A leader in his field, Dr. Francis drives innovation from discovery to commercialization, generating significant economic and clinical impact. In addition to founding Asante Bio, he co-founded Embody, Inc., which was acquired by Zimmer Biomet for

$275 million – one of the largest exits in regenerative medicine to date. Dr. Francis holds 25 U.S. patents and is a Fellow of the American Institute for Medical and Biological Engineering (AIMBE). He serves on national standards committees and advisory boards and is a dedicated mentor and advocate for science education, innovation, and entrepreneurship.

JOSEPH IANNOTTI, M.D., Ph.D.
Chief Research and Academic Officer and Lang Family Endowed Chair of Orthopaedic Research at Cleveland Clinic Florida, and Professor of Orthopaedic Surgery and Biomedical Engineering at the Cleveland Clinic Lerner College of Medicine at Case Western Reserve University, Dr. Joseph Iannotti is a nationally recognized orthopedic surgeon, educator, and researcher whose work has transformed the field of shoulder surgery and orthopedic innovation through groundbreaking research, cutting-edge clinical applications, and translational innovation in musculoskeletal care. Dr. Iannotti's pioneering technologies in patient-specific surgical planning systems and 3D-printed patient specific instruments have revolutionized shoulder joint replacement. His inventions include the first commercial platforms for patient-specific instrumentation in shoulder arthroplasty and custom software for pre-operative planning that now integrates medical imaging, artificial intelligence, and digital modeling. These technologies are now widely used to increase surgical precision, reduce complications, and improve recovery outcomes for patients undergoing complex joint reconstructions. He has also contributed to the development of biomechanical models that help surgeons evaluate implant performance and soft tissue function, shaping how shoulder disorders are treated worldwide. Dr. Iannotti holds 89 U.S. patents and is an Active Fellow of the American Academy of Orthopaedic Surgeons and a Fellow of the National Academy of Inventors. He also received the Cleveland Clinic Mason Sones Award for Innovation, and he was awarded the Cleveland Clinic Lifetime Achievement Award for Innovation. He has received awards from leading professional organizations, including the Charles S. Neer Clinical Science Award three times from the American Shoulder and Elbow Surgeons.

HARI KALVA, Ph.D.
Chair and Professor in the Department of Electrical Engineering and Computer Science at Florida Atlantic University, Dr. Hari Kalva is a leading innovator in the field of visual computing, best known for his transformative contributions to video compression technologies that power today's global streaming economy. Dr. Kalva's numerous Standard Essential Patents (SEPs) are core to current and next-generation international video compression standards such as AVC/H.264, HEVC/H.265, and VVC/H.266. These technologies are embedded in billions of devices and platforms worldwide, including smartphones, digital TVs, Blu-ray players, and streaming services like Netflix and YouTube, enabling high-quality video delivery across diverse networks. Dr. Kalva's pioneering inventions have improved compression efficiency, reduced bandwidth needs, and lowered energy consumption in data centers, making streaming more accessible globally and more sustainable. He also co-developed the MP4 file format, now a cornerstone of digital video distribution. His latest work focuses on Video Coding for Machines (VCM), which is redefining video compression for artificial intelligence and analytics applications. Dr. Kalva holds 73 U.S. patents. He is a Fellow of the National Academy of Inventors, a Senior Member of IEEE and a Member of the Association for Computing Machinery. He is also a U.S. delegate to the International Organization for Standardization (ISO) subcommittees working on video compression and communication standards.

NASSER KUTKUT, Ph.D., DBA
Founder & CEO of Smart Charging Technologies LLC and Former CTO of Advanced Charging Technologies Inc., Dr. Nasser Kutkut's research and innovations have significantly advanced the field of industrial battery charging and renewable energy technologies. A serial entrepreneur and inventor, Dr. Kutkut has pioneered novel applications in electric vehicle battery charging systems and energy management solutions. His patents, including those for autonomous charging systems and IoT-enabled battery management, have been commercialized globally, with over 72,000 systems deployed at major companies such as Coca-Cola, Walmart, and Amazon Air. These innovations have led to substantial energy savings and reductions in CO2 emissions. Additionally, Dr. Kutkut's groundbreaking research also led to the development of high-frequency and high-efficiency, fast, and opportunity chargers and battery monitors. Dr. Kutkut serves as a Graduate Faculty Scholar at the University of Central Florida (UCF) where he also mentors young inventors and entrepreneurs in UCF's Business Incubation Program. Dr. Kutkut holds 20 U.S. patents and was placed among the top three in the Department of Energy's 2001 Future Energy Challenge.

RICHARD MCCULLOUGH, Ph.D.
The 16th President of Florida State University, Dr. Richard McCullough was the first to discover and develop regioregular polythiophenes, a revolutionary class of conjugated polymers that enhance conductivity, improve charge mobility, and allow for greater processability and solubility. His landmark method for producing conjugated polymers such as poly(3-hexylthiophene) enabled the creation of plastic electronics and significantly advanced the development of low-cost, flexible solar cells, transistors, and displays. Dr. McCullough's groundbreaking work also focuses on printable electronic materials, flexible organic semiconductors, and reactive metal inks, as well as the development of materials for organic light-emitting diode (OLED) televisions, where thin, bendable layers of organic compounds produce longer-lasting displays at lower cost. A chemist and entrepreneur, Dr. McCullough is the founder of two companies, Plextronics, Inc. and Liquid X Printed Metals, which commercialized many of his discoveries. Plextronics was acquired by Solvay, and Liquid X remains in operation. He holds 16 U.S. patents and was inducted into the Advanced Materials Hall of Fame for his pioneering research. He is also a Fellow of the American Association for the Advancement of Science and the National Academy of Inventors.

SUMITA MITRA, Ph.D.
Partner and Co-Owner of Mitra Chemical Consulting, Retired Corporate Scientist at 3M Dental Products Division and Professor in the Institute for Advanced Discovery & Innovation at the University of South Florida, Dr. Sumita Mitra is a renowned materials scientist who revolutionized dental materials. As the first inventor to incorporate nanoparticles into dental composites, she developed 3M™ Filtek™ *Supreme Universal Restorative*, which has been used in well over one billion restorations worldwide. This breakthrough technology improved strength, durability, and aesthetic quality in dental fillings. Dr. Mitra's work has led to the development of additional groundbreaking dental technologies, including nanocomposites, resin-modified glass ionomers, and dental adhesives such as Vitremer™, Vitrebond™, and RelyX™ *Luting Cements*, shaping the future of restorative dentistry. Dr. Mitra holds over 100 U.S. patents and is a Member of the National Academy of Engineering and a Fellow of the National Academy of Inventors. She is an

Inductee to the National Inventors Hall of Fame and has been recognized with the EPO Inventors Award, American Chemical Society Heroes of Chemistry Award, Peyton-Skinner Award for Innovation in Dental Materials and Hollenback Memorial Prize from the Academy of Operative Dentistry.

SUBHRA MOHAPATRA, Ph.D.
Professor of Molecular Medicine at the University of South Florida Morsani College of Medicine, Research Career Scientist at the James A. Haley Veterans Hospital, and Co-Founder of TransGenex Nanobiotech Inc., Dr. Subhra Mohapatra is a pioneering researcher widely recognized for her groundbreaking discoveries in targeted cancer diagnosis and treatment. She holds numerous patents that have been commercialized based on her novel nanoparticle-based drug delivery systems that selectively attack tumor cells while sparing healthy tissue. Dr. Mohapatra's innovations have helped pave the way for more effective and less toxic nanotherapy options for patients with aggressive forms of cancer, including lung and colorectal cancers. Additionally, Dr. Mohapatra is the inventor of the advanced "tumor-on-a-disc" technology, an innovative platform that enables the growth of tumoroids in the lab, from patient biopsies, which closely mirror the original tumors and enable targeted and individualized therapies. She has also developed "theranostic" nanoplatforms for simultaneous tumor detection and treatment, and nose-to-brain drug delivery systems targeting brain tumors and neurodegenerative diseases such as traumatic brain injury and Alzheimer's disease. Dr. Mohapatra holds 27 U.S. patents and is a Fellow of the National Academy of Inventors, the American Association for the Advancement of Science, and the American Institute for Medical and Biological Engineering.

EDWARD ROSENTHAL, Hon. D.Sc.
CEO and Co-Founder of Florikan ESA, a leading agribusiness firm specializing in award-winning polymer-coated, controlled-release fertilizers, Dr. Edward Rosenthal has made pioneering breakthroughs in the development of environmentally sustainable solutions that boost crop yields while protecting natural resources. He is the inventor of Staged Nutrient Release™ fertilizer, a groundbreaking technology that optimizes the controlled release of nutrients to maximize plant growth, increase nutrient efficiency, and reduce environmental impact. His innovations have been widely adopted in commercial agriculture and horticulture and have even been deployed by NASA to support sustainable food production on the International Space Station. In addition to his work with NASA, Dr. Rosenthal has collaborated extensively with academic institutions and industry partners to advance sustainable agricultural practices. His contributions have significantly influenced both terrestrial and space-based farming technologies. He holds seven U.S. patents and has been recognized with numerous awards, including induction into the Space Technology Hall of Fame and recipient of the Most Innovative New Product Award in the USA from the National Society of Professional Engineers. In 2023, Concordia University awarded him an Honorary Doctorate in Science in recognition of his lasting impact on agritechnology and sustainability. For his development of environmentally sustainable fertilizer technology, Dr. Rosenthal was also the recipient of a Gulf Guardian Award, presented by a program administered by the United States Environmental Protection Agency.

W. GREG SAWYER, Ph.D.
Dr. W. Gregory Sawyer is a pioneering bioengineer whose inventions have transformed cancer research, materials science and tribology – the study of friction, wear and lubrication. At Moffitt

Cancer Center, he leads groundbreaking work in cancer engineering, including the development of 3D technologies to create precise, patient-derived microscale tumor models. These innovations enhance drug discovery and hold promise for improving patient outcomes and personalizing treatment. His work has been adopted by leading pharmaceutical companies and cancer centers. In tribology, Dr. Sawyer has advanced the design of low-friction materials for extreme environments, with applications in aerospace, manufacturing and cryogenics. His contributions have led to the development of space-certified materials used in satellites and other aerospace technologies. Dr. Sawyer holds 43 U.S. patents and is a recipient of the Tribology Gold Medal. He was named Entrepreneur of the Year by BioFlorida and is a Fellow of the National Academy of Inventors.

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About the Florida Inventors Hall of Fame

The Florida Inventors Hall of Fame (FIHF) recognizes, celebrates, and encourages Florida inventors whose achievements have advanced the quality of life for Floridians, the state, and the nation. Founded in 2013 and located at the University of South Florida Research Park in Tampa, FIHF was recognized by Florida Senate Resolution 1756 in April of 2014. FIHF catalyzes the cycle of discovery and innovation across the state of Florida by recognizing pioneering inventors, empowering future problem-solvers and change-makers, and propelling the American legacy of innovation through transformative experiences and meaningful storytelling. FIHF is supported, in part, by the Florida High Tech Corridor.

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