

MEMORANDUM

June 13, 2013

After recently completing the annual cycle of reviewing all tenure and promotion cases, it is an appropriate time to reflect on the role of research at FIU. All successful candidates for tenure and promotion demonstrated strong research credentials. Research is a foundation upon which we hire and evaluate our faculty colleagues. In recent years, our research enterprise has both matured and changed in accordance with the broader context of funding and our own institutional strategies.

The federal research funding environment has been unstable for the past few years. And it appears that this instability will linger, given declining federal capacity to underwrite traditional research in the quality and volume that characterized the past two decades. Sequestration has resulted in non-strategic cuts to many critical research areas. Nonetheless, our faculty members are finding niches where there are funding opportunities.

In terms of our institutional strategies, we have expanded the opportunities for research directed to community problem-solving—both locally and globally. This expanded focus has positioned us well to compete for new funding sources as traditional ones have declined.

There are several noteworthy institutional trends relating to external funding that are commendable and give cause for optimism about our direction:

- The proportion of faculty with external funding has grown since 2009 from 36% to 43%.
- The proportion of assistant professors with external funding has increased from 15.8% in 2009 to 22.8% in 2012.
- The number of principal investigators at FIU has experienced a 30% increase from 300 in 2009 to 392 in 2012.
- We have more than doubled the number of personnel on grants—from 650 in FY 2010 to 1,445 in FY 2012—a 122% increase.
- Research expenditures have increased by 14% since 2009—from \$101M to \$118M.
- The value of grant applications has grown by 23% since 2009, and by 35% over the past ten years.

In essence, even as we have grown in our student enrollment by nearly 10,000 students since 2009, we are broadening our institutional base to support funded research. We are seeing that more faculty are choosing to compete for scarce external funding, and we are creating meaningful employment opportunities for more people independent of direct state support.

Ultimately, faculty members are driving our progress forward, not just in research but in so many other domains. Below is a snapshot that enables our continuing optimism.

Ranu Jung, Biomedical Engineering

[Ranu Jung](#), professor and chair of FIU's [Department of Biomedical Engineering](#), has been named a fellow of the [American Institute for Medical and Biological Engineering](#) (AIMBE). The AIMBE citation recognized Jung “for her outstanding contributions to developing novel physiology-based orthopedic devices, and for fostering academic and industrial interactions to advance neuro-engineering.”

Jung is one of 70 individuals selected to be a member of the 2013 AIMBE College of Fellows, a group that represents the top 2 percent of the most accomplished medical and biological engineers.

Sakhrat Khizroev, Electrical Engineering

Dr. Khizroev, professor of immunology and electrical engineering, is a leading inventor in the area of nanotechnology. He is one of 98 innovators recently named a Charter Fellow by the [National Academy of Inventors \(NAI\)](#). The holder of 30 U.S. patents, Khizroev was recognized for inventing a dynasty of pioneering nanotechnologies that significantly impacted modern information processing.

Madhavan Nair, Immunology

In a study published in the April 16 issue of [Nature Communications](#), and recently reported in the Miami Herald and many other news outlets, Nair and Khizroev announced a revolutionary technique that can deliver and fully release the anti-HIV drug AZTTP into the brain. They used magneto-electric nanoparticles (MENs) to cross the blood-brain barrier and send a significantly increased level of AZTTP—up to 97 percent more—to HIV-infected cells.

For years, the blood-brain barrier has stumped scientists and doctors who work with neurological diseases. A natural filter that allows very few substances to pass through to the brain, the blood-brain barrier keeps most medicines from reaching the brain. Currently, more than 99 percent of the antiretroviral therapies used to treat HIV, such as AZTTP, are deposited in the liver, lungs and other organs before they reach the brain.

Ming Zhao, Computing & Information Sciences

Assistant professor Ming Zhao has been awarded a prestigious National Science Foundation Career Award for his project "CAREER: Coordinated QoS-Driven Management of Cloud Computing and Storage Resources."

Judith Stiehm, Politics and International Relations

Professor Stiehm offers her readers an introduction to the U.S. Military, and bridges the gap between civilian and military matters in her book, *The U.S. Military: A Basic Introduction* (Taylor and Francis, 2012). She has been awarded the U.S. Army Distinguished Civilian Service Medal.

William Pelham, Psychology and Center for Children and Families (CCF)

Just this past year, CCF faculty received ten grants from a combination of several federal agencies—the NSF, the National Institute on Mental Health, National Institute on Drug Abuse (NIH), and the Institute of Education Sciences (IES). These are multiyear, multimillion-dollar projects focusing on state-of-the-art research on child mental health, including enhanced therapy for anxious children who fail to respond to initial treatment, investigating tolerance to medication effects in children with ADHD, and studying various factors in substance addiction among teens. Several grants focus on important classroom and education factors, including studying the best methods to improve teacher implementation of classroom programs for ADHD children, and studying the impact of intensive therapeutic summer transitional programs for prekindergarten, fifth grade, and eighth grade ADHD students.

Jeremy Pettit, Psychology

The [American Association of Suicidology](#) (AAS) has awarded Jeremy Pettit, associate professor of [psychology](#), the Edwin Shneidman Award for 2013. The annual award is given to individuals under the age of 40 who have made outstanding early career contributions in the field of suicidology. It is named for Edwin Shneidman, a pioneer in research on suicide and founder of the AAS.

Jennifer Gebelein, Earth and Environment

Dr. Gebelin published *A Geographic Perspective of Cuban Landscapes* (Springer, 2012). Starting from the time of the Spanish Conquest to present day Cuba, Gebelein explains how economic, political, and cultural factors have affected Cuba's physical landscape. She also includes the conservation methods that have been implemented.

Quentin Felty, Environmental & Occupational Health

Associate professor Quentin Felty was honored by the American Association for Cancer Research with a Minority-Serving Institution Faculty Scholars in Cancer Research Award. Felty's long-term research goal is to use his mechanistic research on endocrine disrupting chemicals and oxidative stress to explain how environmental factors contribute to cancer disparity with the hope of controlling cancer in vulnerable communities.

Rudolf Jaffé, Chemistry and Southeast Environmental Research Center

An international team of researchers, led by FIU Chemistry professor Rudolf Jaffé and Thorsten Dittmar of the German Max Planck Society, has uncovered one of nature's long-kept secrets — the true fate of charcoal in the world's soils. Charcoal, or black carbon, is a residue generated by combustion including wild fires and burning of fossil fuels, and it is typically deposited into the soil—where scientists believed it remained! Knowing the fate of charcoal is critical in helping scientists balance the global carbon budget, which can help understand and mitigate climate change. The discovery, published in the prestigious journal *Science* shows charcoal dissolves, is exported into wetlands and rivers, and eventually into the world's oceans.

Margo Berman, Advertising and Public Relations

Professor Berman's *The Copywriter's Toolkit: The Complete Guide to Strategic Advertising Copy* (Wiley-Blackwell, 2012) gives a comprehensive guide to applying proper strategies, techniques, and skills to write a strong piece for different media.

Shekhar Bhansali, Electrical Engineering

FIU partnered with North Carolina State University, Pennsylvania State University, and the University of Virginia on a national nanotechnology research effort to create small, wearable, self-powered devices that will help people monitor their health. The NSF Nanosystems Engineering Research Center for Advanced Self-Powered Systems of Integrated Sensors and Technologies (ASSIST, is headquartered on NC State's Centennial Campus and is a joint effort among these four institutions. The Center, funded by an initial five-year \$18.5 million grant from NSF, also includes five affiliated universities and about 30 industry partners in its global research consortium. NSF Engineering Research Centers (ERCs) are among the largest and most prestigious grants made by the engineering directorate of the federal agency. FIU researchers will create sensors that gather biochemical signals from the body, such as stress levels. The results of that work, coupled with FIU-

developed nano energy storage systems and low-power radios developed by the University of Michigan, will be used to process and transmit health data gathered by the sensors to computers and consumer devices, such as cell phones, so patients, doctors and researchers can easily access it.

Mario De La Rosa, Public Health & Social Work

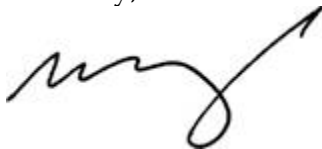
The Center for Research on U.S. Latino HIV/AIDS and Drug Abuse (CRUSADA) continues to address the twin epidemics of substance abuse and HIV/AIDS in Latino communities throughout southern Florida. The Center was recently renewed for a second five-year cycle by the NIH. In the new five-year cycle, the Center will expand its research, training and community engagement into new areas of health disparities impacting communities in South Florida.

Evelyn Gaiser, Southeastern Environmental Research Center (SERC) & Biological Sciences

The long-term research excellence on the Everglades by FIU scholars has been recognized by the NSF with the renewal of a third cycle for the Florida Coastal Everglades (FCE) Long Term Ecological Research (LTER) Program with a \$5.88M award. This interdisciplinary program conducts research to better understand how changes in climate and resource management interact to determine fresh and marine water supply.

There is so much to celebrate—no doubt. As our research enterprise grows and matures, we have optimism that our faculty will continue to draw recognition through their accomplishments. This message only highlights the work of a few of the many of our faculty members who continue to represent our institution very well. Their hard work and achievements are putting FIU in the spotlight and demonstrating all of the ways we are Worlds Ahead!

Sincerely,



Mark B. Rosenberg
President