FIRST IN FLORIDA

A new Florida Center of Excellence at USF will generate high tech industry, hundreds of jobs and an economic impact of more than $188 million while improving the detection and treatment of diseases.

JOSEPH GAMBLE

BY SHERYL KAY

In what may be Florida's greatest university funding coup of 2006, USF scored an $8 million grant to help fund a new Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics (FCoE-BITT). The new center, a true community/business partnership, could change the way infectious diseases and life-threatening illnesses, such as Parkinson's and tuberculosis, are detected and treated.

Competing against 32 other institutions, USF was the top grant winner among the other well-recognized programs that were awarded funds, including Florida Atlantic University, the University of Florida, Florida State University and the University of Central Florida. The second highest ranked proposal received $5 million.

USF's winning application represents a full scale partnership involving collaboration between several departments from three colleges within the university as well as organizations throughout the region, including Hillsborough County, the City of Tampa, the Florida High Tech Corridor Council, St. Petersburg College and Hillsborough Community College.

Also involved was Biovest International, a world-leader in the biotechnology industry.

"This proposal demonstrates my continued commitment to supporting multidisciplinary projects with partners from both the private and public sector," says USF President Judy Genshaft. "Our Center of Excellence will support and strengthen ongoing research efforts at USF and create exciting new partnerships. I am proud of our team and look forward to seeing the fruits of our labor pay off for the region, the nation and the world."

Biotechnology is a very broad term encompassing several different disciplines, explains Robert Chang, vice president for research and principal offeror on the proposal. From drug discovery to engineering and developing medical devices, diagnostic and testing kits, and methods for contamination protection, the common thread is that the end results, in some way, help with the prevention, detection, and treatment or cure of illnesses.

The core mission of the center will be to research, design, develop, and then help produce such products in tandem with business partners. One industry leader, Biovest International of Worcester, Massachusetts, will work with the center in its quest to develop personalized immunotherapies for life threatening cancers of the blood system.

Grants like these are offered by the state, says Chang, because they stimulate universities to have "trans-

THE NEW CENTER REFLECTS USF'S COMMITMENT TO MULTIDISCIPLINARY COLLABORATION. LEFT TO RIGHT: EDWARD TUROS, PROFESSOR, ARTS & SCIENCES; PETER G. STROOT, ASSISTANT PROFESSOR, COLLEGE OF ENGINEERING; DANIEL LIM, DISTINGUISHED UNIVERSITY PROFESSOR IN BIOLOGY; RICHARD HELLER, PROFESSOR, COLLEGE OF MEDICINE.

lation research," thereby bridging the gap between inventions by the faculty and the marketing of end results by industry. In this case, the research would position Florida as a leader in biotechnological inventions.

"The state has made great strides in recent years to develop economies based on high technology, specifically biotechnology," says Chang.

There are many reasons why USF received the substantial award, according to Chang, including a top-notch proposal that addressed all of the criteria, principal investigators who have first-class track records, mature research programs currently in place, already established business partners, strong community support, and unsurpassed efforts by administration, faculty, and staff members.

Ed Turos, professor of chemistry and one of the principal investigators on the grant, is especially excited about the enhanced research capabilities the center will afford him and his colleagues in their work on the discovery and synthesis of new antibiotics and drug delivery systems.

Researchers will have direct access to advanced, state-of-the-art instrumentation and drug screening capabilities, he says, as well as to the expertise of trained personnel who know how to make the most of these facilities. Also, training grants for students as well as seed grants for developing multi-disciplinary projects with other researchers will ensure innovative research and teaching that cuts across all levels. And perhaps most importantly, adds Turos, "there will be an active environment of open collaboration."

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Another principal investigator, Richard Heller, professor of molecular medicine, echoes Turos' anticipation, noting that the center will be instrumental in his own area of research that focuses on novel ways to enhance the delivery of therapeutics.

"Our faculty and students will have the opportunity to work on cutting-edge research projects," Heller says. "And we'll have access to state-of-the-art core facilities and be able to work in a collaborative atmosphere that will enhance the potential for funding from federal and private agencies."

Distinguished University Professor in biology, Dr. Daniel Lim, is another of the principal investigators, whose research laboratory, Advanced Biosensors Laboratory, is already gearing up for collaborative efforts with its ongoing work developing rapid biosensor assays (tests) for detection of biothreat agents such as anthrax, smallpox, and ricin, as well as for detection of food borne, waterborne, airborne, and human disease bacteria and viruses.

Rounding out the principal investigators' team is Peter Stroot, assistant professor of engineering, who brings talent in both engineering and molecular biology.

In addition to the huge benefits it brings to USF, the center will help generate great boosts in Tampa's local economy, from the number of jobs created, to attracting highly educated employees qualified for such work, to establishing the community as a world leader in biotechnology.

"The benefit to our community and the region cannot be understated," says President Genshaft. "Not only has $39 million in matching support been committed to the center, but the return on this investment includes the creation of 400 new biotechnology jobs, $84 million in direct wages and an estimated economic impact of over $188 million."

Rhea Law, chair of USF's Board of Trustees, says the award makes a strong statement about the university's efforts toward becoming one of the nation's top 50 public research universities. "Blending scientific interactions between university departments with business and community resources for the benefit of the region, the nation and the world is the mark of a great public research university."

Community leaders have spent the last several years actively promoting Tampa and the surrounding areas as the up and coming biotechnology development center in the state, and perhaps in the nation.

"The University of South Florida's designation as a Center of Excellence in Biomolecular Identification and Targeted Therapeutics will further enhance USF's reputation as a world-class research center and position our region to better compete on a national and international scale," says Pam Iorio, Tampa's mayor. "This center will positively impact our local economy by creating jobs in the biotechnology industry throughout our region while providing an opportunity to develop a better trained local workforce to support our area's biotech efforts."

The advantages are multifold. Increased jobs in biotechnology lead to a robust workforce of highly trained and educated employees, which in turn attract more businesses to Tampa that are similar in nature. And new businesses mean more employment opportunities.

"We want the jobs to come here to Tampa Bay," says Turos. "The accelerated growth in biotechnology in this region will lead to a substantial influx of new and established businesses from other areas of the country."

The Florida High Technology Corridor Council, an organization committed to attracting, retaining and growing high tech industry in a 23-county corridor running along Interstate 4 and stretching approximately from Tampa through Orlando to the Space Coast and north to Gainesville, is another eager community partner.

"The new center will not only produce groundbreaking research in biomolecular identification and targeted therapeutics," says council president Randy Berridge, "but will greatly enhance our efforts to help our region achieve economic diversification by encouraging growth in the life sciences and medical technologies."

Looking down the road, investing in the collaborative center's work without the usual boundaries of discipline-specific research will help to create the new technologies and biomedical advances from which all people around the world could benefit. From development of new sensitive biosensors to targeted therapeutics, the long-term benefits to society will be extraordinarily diverse and pronounced.

"New technologies for detecting and treating infectious diseases or life-threatening ailments such as Parkinson's, cancers, diabetes, or tuberculosis, to mention a few, will likely emerge from the center that can have a profoundly positive effect for people regardless of where they happen to live in the world," says Turos. "Advances come from scientific research by dedicated scientists who are driven by the excitement and significance of discovery, and making that happen seamlessly is what this center is all about."

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Funding for Florida

USF's proposed Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics ranked highest among 32 proposals from colleges and medical centers throughout Florida. USF's proposal received the greatest amount of funding at $8 million. The other proposals selected for funding include:

$5 million
Florida Atlantic University
Ocean Energy

$4.5 million
University of Florida
Energy Technology Incubator

$4.5 million
University of Central Florida
Laser Technology

$4 million
University of Florida
Nano-Bio Sensors

$4 million
Florida State University
Advanced Materials