

**The mission of the SDSU BioScience Center is to understand the role of microorganisms in cardiovascular diseases, and to use these discoveries to improve health.**

San Diego State University's BioScience Center is the only multi-disciplinary center in the nation to focus its research efforts on the critical nexus of infection, inflammation and cardiovascular disease. Cardiovascular disease is the number one cause of death in the western world and a growing concern in developing countries. The BioScience Center's outstanding scientists study the impact of infections on the heart muscle. The BSC also supports the development of novel biotechnology.

**Dr. Gottlieb: scientist, collaborator, mentor!**

Dr. Roberta Gottlieb, professor of biology and the first Frederick G. Henry Chair in Life Sciences, directs the BioScience Center. Since her appointment in 2007, she has secured \$2.9 million in grant funding for her own research, through which she is finding ways to salvage heart muscle following heart attacks and documenting a link between gum disease and heart disease. She has published prolifically and lectured world-wide.

SDSU welcomes these new researchers:

- Dr. Phyllis Linton studies T cells and their reduced response during aging, which affects the body's ability to fight infection.
- Dr. Edward Morgan is identifying novel approaches to vaccine development for influenza virus and cancer.
- Dr. Joy Phillips is developing an influenza vaccine adjuvant that is effective in the elderly population.
- Dr. Marilyn Thoman's work focuses on the development and maturation of T cells in the aged.
- Dr. Elizabeth "Libby" Virts' expertise is in the emerging area of micro-RNAs, which regulate gene expression in immune cells.

SDSU congratulates the following BioScience Center researchers on the \$8.3 million in funding they have attracted since the center's inception in 2006: Dr. Roger Davis, Dr. Kim Finley, Dr. Roberta Gottlieb, Dr. Asa Gustafsson, and Dr. To Yuen Hui.

**Cardiovascular Transplant Surgeon Joins the BSC**

Dr. Robert M. Mentzer, Jr., a renowned cardiovascular transplant surgeon and experienced clinical investigator has joined the BioScience Center as a research professor in the department of biology. He has 24 years of continuous peer-reviewed research funding from



Dr. Gottlieb fosters a multidisciplinary environment that encourages innovative and cooperative research. Collaborations are underway with SDSU investigators to develop vaccines for *Staphylococcus aureus*, a bacterium responsible for life-threatening infections such as toxic shock syndrome and bacterial endocarditis (Dr. Kelly Doran), and to protect children from coxsackievirus (Dr. Ralph Feuer). Other SDSU collaborators include Dr. Mark Sussman (biology), Dr. Christopher Glembotski (biology), Dr. Scott Kelley (biology), Dr. Suzanne Lindsay (public health), and Dr. Thomas Cole (chemistry).

Dr. Gottlieb directs a team of bioscientists, postdoctoral researchers, visiting scientists, graduate and undergraduate students, and technicians who work together to develop creative solutions to pressing health concerns. The center's close connection with biotechnology companies makes it a model for rapid commercialization of ideas and therapeutic discoveries.

**Immunologists Join the BioScience Center Team**

Five internationally known immunologists joined the innovative research facility in June of 2009. These accomplished scientists, formerly with the Sidney Kimmel Cancer Center, provide a new avenue of expertise and collaboration for SDSU faculty and students, and are certain to make important contributions.

the National Institutes of Health (NIH), served on numerous NIH and American Heart Association study sections, and conducted multi-institutional and multi-national industry-sponsored clinical research trials. Dr. Mentzer is known for his expertise in the areas of ischemia-reperfusion injury, myocardial protection, and organ preservation. He comes to SDSU from Wayne State University School of Medicine where he is a professor of surgery and physiology in the Cardiovascular Research Institute. At SDSU, he will serve as Director of Translational Research and Global Health Initiatives. In the BioScience Center he will be collaborating with Dr. Roberta Gottlieb on a recently funded multi-investigator NIH grant to elucidate the role of autophagy in cardioprotection.

**Generous Donors Make Research Possible**

Darlene Shiley's leadership gift last year established the Donald P. Shiley Center for Cardiovascular Research, which is housed on the third floor of the BioScience Center. The center is named in honor of Mrs. Shiley's husband, an entrepreneur and innovative engineer who patented the Bjork-Shiley heart valve which revolutionized heart surgery in the 1970's. *"Donald and I recognize that the research being done in SDSU's BioScience Center is on the cutting edge. Faculty and students are working side by side, studying how underlying factors such as infection and inflammation could identify new approaches to heart disease."*

## BIO SCIENCE CENTER

A generous gift from alumni Alan and Debbie Gold in 2005 named the Alan and Debbie Gold Auditorium which is used to host lectures, seminars, a distinguished speaker series and symposia on life-sciences related research. The auditorium is a focal point for BioScience Center activities and educates the community about key public health issues including heart disease prevention, drug-resistant bacterial infections and therapeutic responses to bioterrorism.

Other significant gifts to the BioScience Center have helped foster a vibrant and collaborative research space. The Dennis and Linda Fenton conference room on the main floor is used for meetings and regular graduate-level symposia to discuss research findings. The Fentons, who are passionate about supporting scientific education and whose son received his undergraduate degree from SDSU, were early employees of the biotechnology company, Amgen.

Maxine and Gary Kreitzer made a generous gift last year that was recognized by naming the conference room on the third floor in their honor. The conference room is available for formal and informal gatherings related to the Donald P. Shiley Center for Cardiovascular Research.

Frederick Henry was a distinguished alumnus of the College of Sciences and a generous contributor to the BioScience Center through the creation of the Frederick G. Henry Chair in Life Sciences. Fred's goal when establishing the Chair was to foster and encourage emerging areas of scientific research at San Diego State University through the recruitment of a highly respected individual to oversee the enterprise. BioScience Center director Roberta Gottlieb holds the prestigious Frederick G. Henry Chair in Life Sciences.

Vincent R. Okamoto made a generous gift to the BioScience Center in honor of his uncle, Tosh Nomura. An anesthesiologist in private practice in the San Diego area, Dr. Okamoto believes that San Diego State University was instrumental in providing a first class education allowing him to develop his chosen career path in medicine. The lobby of the BioScience Center is named for both gentlemen.

Other gifts from companies and individuals in the biotechnology community and from alumni have helped provide essential resources for the BioScience Center. Their gifts have been recognized on a donor wall in the main lobby, as well as in selected offices throughout the building.



### The building

- 35,000 SF in five stories
- Lower level: vivarium
- First floor: Gold Auditorium, Fenton Conference Room, Nomura & Okamoto Lobby
- Second floor: to be constructed
- Third floor: Donald P. Shiley Center for Cardiovascular Research, Kreitzer Conference Room
- Fourth floor: fully occupied with cardiovascular and metabolic research.



## AMERICAN RECOVERY AND REINVESTMENT ACT

*"A troubled economic time has offered us a moment of opportunity."*

– Tom Scott, VP for Research

### SDSU Researchers Receive \$11.5 Million in Stimulus Funding

#### Background

The American Recovery and Reinvestment Act of 2009 (ARRA) authorized an injection of \$787 billion into the American economy. While sixty percent (\$476 billion) will be in the form of tax relief and entitlements, and most of the rest will go to rebuild America's infrastructure through immediate job creation, 2.7% or \$21.5 billion, is being distributed through federal agencies that support health, energy, scientific, artistic, and educational research – all areas in which SDSU faculty excel and have successfully competed for grants in the past.

### SDSU Responds to Opportunity

The legislation requires that ARRA funds be distributed and used promptly. Agencies are funding research that can generate meaningful results within two years. SDSU faculty and staff responded swiftly by submitting more than 140 ARRA proposals. Forty-five awards were already received by October 1, 2009.



The National Institutes of Health (NIH) is supporting ARRA programs that stimulate job creation and economic development related to biomedical and biobehavioral research. The National Science Foundation (NSF) is using its ARRA funds to ensure our nation's status as a leader in science and engineering research and education by providing faculty and student access to state-of-the-art scientific equipment and instrumentation. The awards our professors have received will provide additional or continued employment for students and technicians and enhance our nation's research portfolio. It is reasonable to expect that the impact will go beyond SDSU scientists and their students to the greater scientific