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UCSB Institute to Play Key Role in New, Major Diabetes Research Program

Insulin Resistance Pathways Project is New Model of Collaborative Research, with Teams from Multiple Universities and Companies Tackling Single Problem

Santa Barbara, California, April 28, 2008—UC Santa Barbara's Institute for Collaborative Biotechnologies has joined into a research consortium with Pfizer, three other major research universities—Caltech, Massachusetts Institute of Technology, and the University of Massachusetts—and Entelos, a physiological modeling company, to seek out new targets for drugs to treat diabetes. Pfizer is funding the three-year, \$14 million Insulin Resistance Pathway (IRP) Project to look at insulin signaling in adipose (fat) cells to increase understanding of diabetes and obesity, inextricably linked conditions which affect 7 percent of the US population. Diabetes has been the subject of intense study in the academic community and pharmaceutical industry for nearly 50 years. The diabetes and obesity medicines that have reached the market, however, do not meet the needs of many patients—nearly 60% of patients do not adequately respond to currently available drug therapies. The first phase of the project will examine insulin signaling in adipose, or fat, cells. Researchers at Pfizer, MIT and the University of Massachusetts will perform data collection and analyses, which will then be fed to the computational groups at MIT, Caltech and the University of California at Santa Barbara, led by Frank Doyle, PhD, Professor of Chemical Engineering and Associate Director of the Institute for Collaborative Biotechnologies at UCSB. Doyle's team at UCSB will first be responsible for analyzing the data supplied by the other computational groups and then developing mathematical models of the insulin signaling pathways; they will then apply those models to identify targets for therapeutic action. Entelos' role will be to assess the potential efficacy of treating those targets, utilizing the company's whole-body model of Type 2 diabetes. "The IRP Project is a new paradigm in two respects," notes Doyle. "First, its methodology is a true departure from the way fundamental research in human disease has been done and then applied to the development of new therapies. Second, this consortium also represents a sea change in how industry and academia collaborate in research and product development in the pharmaceutical area." The collaboration agreement, in a major departure from traditional industry-academia practice, allows the academic partners to publish and/or patent any discoveries made in the course of their research. If the first phase of the project proves successful, a second, two-year phase will extend these studies to other insulin-sensitive tissues—liver, muscle and possibly hypothalamic or beta cells. Preston Hensley, PhD, Senior Director in Pfizer's Worldwide Exploratory Science & Technology organization, will oversee the IRP Project for Pfizer. "This project will be an interactive effort across Pfizer," said Hensley. "Scientists from our laboratories in Groton, Connecticut, where our diabetes and obesity research is centered, and from our Research Technology Center in Cambridge, Massachusetts, will work directly with the university and Entelos research teams. Pfizer is very fortunate to be working with such an outstanding group of research organizations." ##### About the College of Engineering at UC Santa Barbara The College of Engineering at UC Santa Barbara is a global leader in bioengineering, chemical and computational engineering, materials science, nanotechnology and physics. UCSB boasts five Nobel Laureates (four in sciences and engineering) and one winner of the prestigious international Millennium Technology Prize. Our students, professors and staff thrive in a uniquely-successful interdisciplinary and entrepreneurial culture. Our professors' research is among the most cited by their peers, evidence of the significance and relevance of their wo

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