UMBI NEWS

life. science. works.

Contact: Gene Levinson
(443) 250-9654
levinson@umbi.umd.edu

June 19, 2008

For Immediate Release

UMBI Awarded $2.5 Million Contract to Develop Threat-Detection Systems

College Park, MD -- A $2.5 million, five year Department of Defense contract was awarded to UMBI, the biotechnology institution of the University System of Maryland, for the development of next generation threat detection systems. The long-term goal of such a system is rapid and sensitive detection of a threat, and the immediate conversion of this information into electronic signals that can be readily processed and communicated through electronic technologies.

In this five year study, researchers will use bacterial "quorum sensing" as a model of how biology detects environmental cues, communicates this information to bacteria of the same or different species, and how the recipients of this communication act on the information. In contrast to electronic devices, communication processes in the biological world are generally mediated by chemical, and not electronic, signals.

Researchers plan to bridge the divide between biological and electronic information processing to generate the sensitive and selective sensors that can detect threats in the field.

One of the key features of this study is a novel technology that uses a biological substance-chitosan-that is capable of integrating biological sensing elements into electronic devices. Researchers will employ chitosan to assemble the individual elements of the quorum sensing network on chips so these elements can be

individually studied and ultimately combined into assemblies that can detect and report threats.

Bridging the gap between biological signaling and electronic devices has also been a major goal for medical diagnostics as well as other applications relevant to detection of environmental hazards.

This effort will be led by principal investigator Dr. William E. Bentley, and co-principal investigator Dr. Gregory Payne. Dr. Bentley is jointly appointed at UMBI's Center for Biosystems Research and is the Chair of the Fischell Department of Bioengineering at the University of Maryland at College Park. Dr. Payne is the Director of UMBI's Center for Biosystems Research.

With research centers in Baltimore, Rockville, and College Park, UMBI, the University of Maryland Biotechnology Institute, is the newest of 13 institutions forming the University System of Maryland. UMBI has more than 60 ladder-ranked faculty and a mandate to advance the biotechnology economy while preparing a well-equipped workforce. Celebrating more than 20 years of service to Maryland and the world, UMBI is led by microbiologist and former biotechnology executive Dr. Jennie C. Hunter-Cevera. For more information visit www.umbi.umd.edu.

###