



UNIVERSITY OF
NOTRE DAME

Strategic Academic Planning Committee 2007-2008

Proposal Title: **Advanced Diagnostics and Therapeutics -
Molecules to Nanostructures to Cells and Beyond**

Principal Investigator: **Paul Bohn**

Proposal Participants:

Last Name	First Name	Department
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Abstract

The world of 2040 will be a world characterized by a radical transformation in the quantity and quality of information available to individuals about themselves and about the physical and chemical characteristics of their immediate environments. We propose a multidisciplinary effort to create three-dimensionally integrated diagnostic and therapeutic platforms capable of supporting the personalized health care and environmental monitoring of the mid-21st century. The effort will span the biological, physical and computational sciences to create an intellectual nexus focused on the four critical elements in advanced technology development: design, fabrication, characterization and application. These advances will be implemented through a program including: (1) a small cadre of Research Assistant Professors -each spanning multiple laboratories; (2) extensive collaborations on campus, throughout Indiana, the Midwest and around the world; (3) critical advances in shared scientific instrumentation; and (4) a capstone recruitment of a world-class scholar working at this highly fertile nexus. Success in these efforts will render Notre Dame the leading institution in research on personal monitoring and Indiana the center of a burgeoning new industry, and it will significantly enhance the quality of life for citizens in both developed and developing nations.