



Strategic Academic Planning Committee 2007-2008

Proposal Title: Genomics, Disease Ecology and Global Health

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Proposal Participants:

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Abstract

Global Health research at the University of Notre Dame is currently well funded in the core area of biomedical science as applied to tropical infectious diseases, with most global health biomedical research organized under the umbrella of the Center for Global Health & Infectious Diseases (CGHID). Most of the CGHID faculty are in one department, Biological Sciences. This initiative has two distinct but integrated goals. (1) One goal is to broaden the scope and nature of Global Health projects on campus that are currently centered in CGHID by developing strong interdisciplinary links with other academic departments and centers. The resources requested by this proposal will actually reside in many different academic units, including the College of Engineering, the Indiana University School of Medicine South Bend (IUSM-SB), and potentially two departments of the College of Science. (2) The second goal is to enhance and expand core genomic and bioinformatic research capabilities that have been successfully assembled largely within CGHID and structure these enhanced facilities so they are available to support bioscience research well beyond the current set of users. These enhanced facilities will reside in both the College of Science and the College of Engineering, and the structure of these facilities will be specifically organized to support both traditional global health scientists as well as all other scientists across campus for whom genomics and/or bioinformatics could be important to their research.

This proposal will strengthen Notre Dame interdisciplinary research in bioscience through four specific approaches. (1-2) The first two approaches involve establishing formal facilities to support genomic and bioinformatic research on campus. One facility will be in the College of Science and the other in the College of Engineering, but both will be formally linked and will jointly address the same broad area of research. Each facility will involve the hiring of 3 new personnel, a T&R faculty director and two contract-supported specialists. The Genomics facility will also have a significant budget for equipment, supplies and students and will have a mandate to support new investigators with these internal resources. (3) The third approach will be to hire two T&R faculty with expertise in the epidemiology, ecology and control of infectious diseases, especially diseases of importance in developing countries. These hires will be structured to promote new linkages between the biomedical research and quantitative faculty on campus and between the College of Science and the IUSM-SB. These new faculty will position the university to take advantage of rapidly increasing opportunities for funding in the area of global health. (4) The last approach will be to hire a T&R scientist with a research program firmly in the area of applied research (*e.g.*, therapeutic or diagnostic agents or techniques) on a pathogen of importance in global health. The goal is to develop formal collaborative links between the basic research infectious disease biologists in the Department of Biological Sciences and the applied research scientists and engineers in other parts of the College of Science and in the College of Engineering.

The first three years of cost of this proposal are estimated to be approximately \$9.4 million, and annual new research leveraged by this program after 5 years should reach continuing levels of between \$4-8 million per year of single investigator grants, with the additional expectation of federal program grants, big foundation projects (*e.g.*, Bill & Melinda Gates Foundation projects) and federal training grants. All aspects of this project are designed to enhance interdisciplinary research programs and to raise the reputation of global health and bioscience research at the University of Notre Dame.