

## COMMISSION FOR HIGHER EDUCATION

Friday, September 10, 2010

### DECISION ITEM A-1:

#### Doctor of Philosophy in Applied Earth Sciences To Be Offered by Indiana University Through Its IUPUI Campus

#### Staff Recommendation

That the Commission for Higher Education approve the Doctor of Philosophy (Ph.D.) in Applied Earth Sciences to be offered by Indiana University through its IUPUI campus, in accordance with the background discussion in this agenda item and the *Abstract*, July 30, 2010; and

That the Commission recommend no new state funds, in accordance with the supporting document, *New Academic Degree Program Proposal Summary*, July 30, 2010.

#### Background

The proposed Ph.D. in Applied Earth Sciences is an interdisciplinary program that will prepare students to pursue research projects that cross traditional disciplinary boundaries and extend the knowledge base in water resources research and environmental health sciences. Although housed in the Department of Earth Sciences in the School of Science – which offers a B.S. and M.S. in Geology and a B.S. in Environmental Science – the program faculty will draw from five different schools and a dozen different departments. Earth Sciences faculty currently collaborate with faculty in the School of Medicine and the Departments of Geography and Public Health to study hazards in an urban context, including lead poisoning in children and the cycling of man-made chemicals in urban environments. Another major area of inter-disciplinary research related to health issues focuses on water quality in Indiana and the Midwest.

Faculty in the Department of Earth Sciences have brought in \$6.6 million in external grant funding over the past seven years (FY2004-FY2010) and have increased funding over the previous year in five of the six years since FY2004. The awards attributed to departmental faculty have exceeded \$1 million during each of the last three years, and the increase in funding between FY2004 and FY2010 -- \$287,510 and \$1,568,559, respectively – represents a gain of over 400%. The Department has also broadened the sources of external funding to now include, for example, grants from the U.S. Department of Agriculture, NASA, and the National Institutes of Health.

The Department of Earth Sciences houses two research centers: Center for Earth and Environmental Science (CEES) and Center for Urban Health. Earlier this year, CEES received designation as an IUPUI Signature Center, which follows three years of initial funding and which will now receive long-term, on-going support from the campus. The Center for Urban Health, which is a collaborative effort between Earth Sciences and the Department of Toxicology in the School of Medicine, received initial, three-year funding through the Signature Center initiative. (The Signature Center initiative at IUPUI provides campus funding for centers, which are unique, distinctive, and often inter-disciplinary in nature, and which have the capacity to attract significant external funding and to bring academic distinction to the campus.)

The inter-disciplinary nature of the program, combined with the extensive resources associated with geoinformatics and healthcare-related programs on the IUPUI campus, will make this program unique in Indiana. Moreover, the University indicates there are only a handful of institutions in the nation that offer doctoral programs with a similar curricular configuration and an array of resources, upon which to draw.

### **Supporting Documents**

- (1) *Abstract - Doctor of Philosophy in Applied Earth Sciences To Be Offered by Indiana University Through Its IUPUI Campus, July 30, 2010.*
- (2) *New Academic Degree Program Proposal Summary – Ph.D. in Applied Earth Sciences, July 30, 2010.*

## Abstract

Doctor of Philosophy in Applied Earth Sciences  
To Be Offered by  
Indiana University Through Its IUPUI Campus

July 30, 2010

**Objectives:** To prepare future scientists in the applied study of geology, biology, and chemistry of the environment. The major goal of the program is to explore the complex interactions that exist in the interface between the earth's surface and the organisms, including human, who occupy it.

**Clientele to be Served:** Students desiring advanced study to prepare them for teaching and research in the broad field of applied earth sciences. Because this is an interdisciplinary program, students from a wide range of backgrounds will be accommodated.

**Curriculum:** A total of 90 semester credit hours will be required to complete the program, distributed as follows:

### Core Courses (18 credit hours)

- Environmental Geochemistry (3)
- Aquatic Toxicology (3)
- Global Change Biology (3)
- Introduction to Geographic Information Systems (3)
- Environmental Health (3)
- Surface-Water Hydrology (3)

### Specialization Courses (18 credit hours)

- Students will identify the specialization area that they will pursue and take courses from a faculty approved list of courses.

### Dissertation Credit (54 credit hours)

**Employment Possibilities:** Graduates will be prepared for academic positions as well as research and policy positions in a variety of environmentally related organizations and agencies.

**NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY**

July 30, 2010

**I. Prepared by Institution**

Institution/Location: Indiana University to be offered through its IUPUI campus

Program: Ph.D. in Applied Earth Sciences

	Year 1 FY2010	Year 2 FY2011	Year 3 FY2012	Year 4 FY2013	Year 5 FY2014
Enrollment Projections (Headcount)					
Full-Time	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>20</u>
Part-Time	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>20</u>
Enrollment Projections (FTE)					
Full-Time	<u>5</u>	<u>10</u>	<u>15</u>	<u>19</u>	<u>19</u>
Part-Time	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	<u>5</u>	<u>10</u>	<u>15</u>	<u>19</u>	<u>19</u>
Degree Completions Projection	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5</u>
New State Funds Requested (Actual) *	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>
New State Funds Requested (Increases) *	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>

**II. Prepared by CHE**

New State Funds To Be Considered For Recommendation (Actual) *	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>
New State Funds To Be Considered For Recommendation (Increases) *	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>

CHE Code: 09-54

Campus Code: 1813

County: Marion

Degree Level: 09

CIP Code: Federal – 030104; State – 030104

\* Excludes new state dollars that may be provided through enrollment change funding.