Contact: Diana Gonzalez

PROPOSED NEW PROGRAM AT THE UNIVERSITY OF IOWA
INTERDISCIPLINARY GRADUATE PROGRAM IN INFORMATICS

Action Requested: Consider recommending approval to the Board of the request by the University of Iowa to establish a new Interdisciplinary Graduate Program in Informatics which will be administered by the Graduate College with support from the Colleges of Engineering, Nursing, Liberal Arts and Sciences, Public Health, and Medicine.

Executive Summary: The proposed program will offer a Ph.D. or M.S. degree in Informatics, with specializations in Health Informatics or Information Science, and a Certificate in Informatics that can be adapted to meet the needs of students in a variety of disciplines containing informatics content.   The interdisciplinary structure of the proposed program leverages the University's strengths and provides flexibility to support the rapid emergence of new informatics-related initiatives.   This proposal was reviewed by the Board Office and the Council of Provosts and is recommended for approval.   No concerns were raised when it was presented to the Iowa Coordinating Council for Post-High School Education.

Background:

◇   Description of the field. "Informatics denotes an emerging discipline at the intersection of the computational disciplines with the humanities, arts, and the natural, biological, health, and social sciences.   The rapid development of information technology and its associate infrastructure have significantly affected how science is done, how health care delivery is perceived, the mechanics of scholarship, forms of artistic expression, and the pattern of social interactions.   The impact of informatics is in the capability to solve new problems or successfully examine existing problems from a different perspective."

◇   Interdisciplinary Graduate Program in Informatics Structure. This structure includes several characteristics:
  ☑   Ensures that core computational courses are taught by faculty with appropriate expertise.
  ☑   Supports continued core curriculum development and oversight that benefits the University.
  ☑   Encourages rapid deployment of new sub-tracks in evolving informatics areas.
  ☑   Enables small, cross-disciplinary groups of faculty from multiple departments to collaborate and propose new, interdisciplinary, informatics-related graduate programs.
  ☑   Allows existing departments and programs to leverage the core curriculum, adopting elements of informatics training for their own graduate programs.
  ☑   Combines existing academic offerings to reduce redundancy while capitalizing on emerging interdisciplinary strengths.
  ☑   Provides a forum for discussing and coordinating new university-wide informatics initiatives.

◇   Duplication.   The University of Northern Iowa offers a B.S. in Bioinformatics through the Department of Computer Science.   Iowa State University has an interdepartmental graduate program in Bioinformatics and Computational Biology with focus areas in bioinformatics, functional/structural genomics, genome evolution, macromolecular structure/function, mathematical biology, and computational modeling oriented to the agricultural, plant, animal, and basic life sciences.

The University of Iowa's proposed program has different focus areas – health informatics (centered on biomedical-health related activities in the Colleges of Liberal Arts and Sciences, Medicine, Public Health, Nursing, and Engineering); bioinformatics (from evolutionary studies in Liberal Arts and Sciences to basic biomedical activities in bio-imaging); and a more generalist Information Science focus for students interested in non-biomedical or health-related applications of informatics.

◇   Resources needed for the program.   The University expects to support the proposed program with existing faculty and educational and research facilities and equipment.   More than 50 faculty members from the Colleges of Liberal Arts and Sciences, Engineering, Medicine, Public Health, Dentistry, Pharmacy, and Business, as well as the Graduate College, will participate in this endeavor.   The Graduate College will fund two academic year graduate research assistantships for the proposed program.   An additional academic year graduate research assistantship will be funded by the Provost's Office for FY 07 and FY 08.   A training grant in Health Informatics has been submitted to support additional graduate research assistantships.

◇   Cost.   The average annual cost for the proposed program for the next seven years is $106,000 which will be provided through reallocations from the Graduate College ($56,000) and the Provost's Office ($50,000).

◇   Need/Demand.   The University anticipates an initial enrollment of 10-15 majors and 10 non-majors with an ongoing enrollment of 15 majors and 10 non-majors.   Students in the health sciences interested in the health informatics sub-track offerings (certificate, M.S., and Ph.D.) will be the most likely source of students.   The biomedical and life sciences, as well as engineering and the social sciences, use computational models to address complex problems.

Employment opportunities for computing and information specialists (e.g., managers, engineers, software developers, database administrators) are expected to grow "faster than the average for all occupations through 2014[1]."   According to the University, degree and certificate recipients will find employment in biomedical/health and insurance industries, as well as with organizations involved with security, finance, and government.

◇   Quality.   The strengths of the proposed program are the diverse faculty participants from a variety of departments and programs who are engaged in informatics research and scholarship.   The University anticipates that the collaborative nature of the proposed program will strengthen other graduate programs by offering graduate certificates to complement existing graduate degree offerings.

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[1] Source: U.S. Department of Labor, Bureau of Labor Statistics.

◆   <u>Link to Strategic Plan</u>. The proposed program is consistent with the University of Iowa's 2005-2010 Strategic Plan (Goal 2, Strategy 2) – "improve the infrastructure and culture central to the growth of research, scholarship, and creative work, including interdisciplinary and international efforts, by identifying opportunities for investment and the intersection of existing University strengths and extramural funding opportunities; and adopting administrative structures and incentives that encourage strategic cross-unit collaborations." It also supports the Board of Regents' Strategic Plan to "ensure high-quality educational opportunities for students."

Responses to the Board of Regents' program approval questions are on file in the Board Office.