Board Meeting
March 11, 2021

ESTABLISH THE MASTER OF SCIENCE IN BIOMEDICAL IMAGE COMPUTING, GRAINGER COLLEGE OF ENGINEERING AND THE GRADUATE COLLEGE, URBANA

Action: Establish the Master of Science in Biomedical Image Computing, Grainger College of Engineering and the Graduate College

Funding: Start-up funding, including two tenure-track faculty positions, will be covered by the Department of Bioengineering and the Grainger College of Engineering. Funding plans cover the first two years of the program. At year three, the enrollment and revenue growth from tuition will provide the resources for expansion of staff and infrastructure as needed.

The Chancellor, University of Illinois Urbana-Champaign, and Vice President, University of Illinois System with the advice of the Urbana-Champaign Senate recommends approval of a proposal from the Grainger College of Engineering and the Graduate College to establish the Master of Science in Biomedical Image Computing.

The University of Illinois Urbana-Champaign is ideally suited to assume a leadership role in computational bioimaging education and is expected to rapidly receive international recognition for doing so through this proposed program. The proposed Master of Science in Biomedical Image Computing (M.S. in BIC) is grounded in and blends together two research strengths in the Grainger College of Engineering: biomedical imaging science and machine learning. This solid foundation of scholarship and directly relevant faculty expertise will facilitate the program's implementation.

Biomedical image computing is a large, rapidly growing industry and research field comprising the formation and analysis of diagnostic images. Both image system design and biomedical image analysis are currently being revolutionized at a tremendous rate by the emergence of machine learning techniques. The proposed M.S. in BIC addresses the unmet need for efficient, rigorous training focused at the intersection of biomedical imaging science and machine learning. Graduates will find careers as engineers who are developing, translating, and evaluating biomedical imaging technologies that use machine learning methods. This non-thesis program is designed to be completed in three semesters of full-time study and will allow students instant, complete immersion in the burgeoning field of imaging science, a sustained and streamlined practicum in modern machine learning techniques, and a new curriculum that is integrated a priori with the explicit purpose of efficient training in solving real imaging science problems via machine learning.

The proposed program will be administratively housed in the Department of Bioengineering. The department intends to fill two new tenure-track faculty positions before the program starts, with departmental and Grainger College of Engineering funding committed to these hires. In addition to these two new hires, existing faculty in the Bioengineering Department will contribute to teaching in the program. Current facilities, technology, and non-technical resources are adequate to support the proposed program. For the first two years, while the program is ramping up, existing staff in the department and the college will be leveraged to support the program's administrative needs. At year three, the program is expected to be revenue-generating through tuition

funds, and at that point, a new program coordinator will be hired to oversee marketing, budgeting, and other daily business operations.

The Board action recommended in this item complies in all material respects with applicable State and federal laws, University of Illinois *Statutes*, *The General Rules Concerning University Organization and Procedure*, and Board of Trustees policies and directives.

The Executive Vice President and Vice President for Academic Affairs concurs with this recommendation. The University Senates Conference has indicated that no further Senate jurisdiction is involved.

The President of the University recommends approval. This action is subject to further review and approval by the Illinois Board of Higher Education.