September 20, 2018

To: Drs. Kevin Corcoran and Louay Chamra

CAS and SECS Assemblies

From: Shailesh Lal, Gerard Madlambayan and Jia Li

Bioengineering Steering Committee

Subject: Motion item from the Bioengineering Steering Committee

The Bioengineering Steering Committee requests the Assemblies of the College of Arts and Sciences (CAS) and the School of Engineering and Computer Science (SECS) to approve the motion listed below:

**Motion:** Formation of a new Bioengineering Department (“little d”) under the shared and equal governance between CAS and SECS

Previously, a new curriculum for the Bioengineering program was specifically developed in accordance with obtaining approval from the Accreditation Board of Engineering and Technology (ABET). The new curriculum has been considered and unanimously approved by:

1. The Bioengineering Curriculum Committee on February 14th, 2017
2. The SECS Undergraduate Curriculum Committee on February 16th, 2017
3. The SECS Faculty Assembly on March 24th, 2017
4. The University Committee on Undergraduate Instruction (UCUI) on September 27, 2017
5. The Oakland University Senate as an Informational Item on October 8th, 2017.

**Rationale:**

Bioengineering combines engineering disciplines with biological and medical sciences to design innovative devices, equipment, computer systems and software for a variety of biotechnology industries and health care fields. According to the Bureau of Labor Statistics (BLS), this field of engineering is expected to grow by 7% annually from 2016-2026 to meet the demands of a growing aging population (<https://www.bls.gov>). Jobs in this growing sector will be mainly in manufacturing, universities, hospitals, and research facilities of companies and educational and medical institutions and will therefore play an essential role in the “Medical Mainstreet” movement. The presence of a prominent Bioengineering Department on campus will allow OU to train and provide individuals to meet these current and future needs.

The current OU Bioengineering Program was established in 2007 as a joint collaboration between CAS (Biological Sciences) and SECS to meet the growing demand for trained individuals to meet the increased interest in bioengineering products and services in the industrial and academic sectors. The Department of Biological Sciences and SECS were in a position to provide students with a solid background in both Biology and Engineering in a wide range of bioengineering related fields. It was designed to attract students who would have otherwise selected other institutions to pursue their bioengineering interests. Under this cooperative joint venture, the program was initially named Engineering Biology. The founding steering committee consisted of interdisciplinary faculty members from the Department of Biological Sciences and Computer Sciences with consulting members from the Departments of Mechanical Engineering, Mathematics and Statistics, Chemistry and Physics. Two faculty members were subsequently hired in 2010 (in CAS) and 2011 (in SECS) for the Engineering Biology Program. In 2015, the programs name was changed to Bioengineering to be consistent with other national programs. Recently, the entire curriculum was revamped to be compliant with criteria for ABET accreditation, which the current program will seek approval in 2020. The current enrollment of students in the program stands at ~85, which is anticipated to grow to between 200 and 300 within the first three years post accreditation in 2023 and 2024. The program has successfully shared equal governance and participation of faculties from both CAS (Department of Biological Sciences) and SECS.

Based on an informal LinkedIn survey, 95% of students that graduate from our program find employment within 6-months of graduation. Our alumni are employed at corporations such as General Motors, Fiat Chrysler, Terumo, FANUC American, Henkel, Takata, DENSO TEN, Progenity, SRG Global, United States Steel, McLanahan, Arnold Fastening Systems, Linguamatics, and Battle Creek Equipment Company. In addition, a number of students have pursued their graduate degrees in Biomedical Engineering at nationally competitive programs, such as the University of Michigan, Purdue, Case Western Reserve, Michigan State and Wayne State University. A number of students have also gone on to obtain their medical degrees (MD or MD/PhD) at OUWB School of Medicine, Wayne State, the University of Michigan, the University of Florida, and Michigan State. These achievements speak to the type of student this program recruits and the importance of supporting its continued growth.

The proposed Bioengineering Department will ensure continued success through enhanced visibility and by providing a solid foundation to develop a nationally competitive program. The establishment of a new department will:

1. provide a solid foundation for a growing student population by building the basic infrastructure for the program, including physical space for designing bioengineering projects, required as a core concept of student training.
2. help in recruitment and retention of students.
3. help in attracting and recruiting nationally competitive high caliber faculty members.
4. help in long lasting sustainability, building alumni base, fundraising and promotion of the program.
5. help to establish industry collaborations for student design projects, internship and employment

Finally, the formation of the Department of Bioengineering was decided upon with open consultation with all involved from CAS (including the Dean and Chair of Biological Sciences), SECS (including the Dean) and the Provost Office thus demonstrating the ongoing shared commitment to the program.