Approved by the Regents
May 21, 2020

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Biomedical Engineering

Rhima M. Coleman, assistant professor of biomedical engineering, Department of Biomedical Engineering, College of Engineering and Medical School, and assistant professor of mechanical engineering, Department of Mechanical Engineering, College of Engineering, is recommended for promotion to associate professor of biomedical engineering, with tenure, Department of Biomedical Engineering, College of Engineering and Medical School, and associate professor of mechanical engineering, without tenure, Department of Mechanical Engineering, College of Engineering.

Academic Degrees:

Ph.D.	2007	Georgia Institute of Technology, Biomedical Engineering, Atlanta, GA
M.S.	2003	Georgia Institute of Technology, Mechanical Engineering, Atlanta, GA
B.S.	1999	University of Rochester, Mechanical Engineering, Rochester, NY

Professional Record:

2015 – present	Assistant Professor, Department of Mechanical Engineering, University of Michigan
2012 – present	Assistant Professor, Department of Biomedical Engineering, University of Michigan
2008 – 2012	Post-doctoral Fellow, Research, Hospital for Special Surgery, New York, NY

Summary of Evaluation:
Teaching: Professor Coleman's teaching evaluations in undergraduate and graduate courses over the past five years have been very good to excellent. Letters received from graduate and undergraduate students describe Professor Coleman as an involved and dedicated teacher, and praised her commitment to excellence and professionalism. Undergraduate and graduate students consider her "passionate and approachable" and never hesitate to ask for help with homework, finding an internship or research position, making connections within her broad network of professional relationships, letters of recommendation, or to discuss a sensitive issue. Professor Coleman has graduated one Ph.D. student, and is currently mentoring five more, one as co-chair. In addition to excellence in classroom instruction and research mentoring, she has made outstanding contributions to the development of Biomedical Engineering (BME) curriculum.

Research: Professor Coleman's overall research theme is joint resurfacing, but more specifically, her research has taken on the challenging task of preventing cartilage degradation. Her innovative research platforms collectively span all hierarchical levels, from the cell and cell-interactions, to matrix composition, to tissue and organ level mechanical function. Professor Coleman's work on engineering gene circuits is regarded as particularly innovative and

impactful. She has secured funding for her research from multiple sources, including NIH, the Arthritis National Research Foundation, and the Orthopaedic Research and Education Foundation. Professor Coleman's research innovation, impact, grants, and peer reviewed papers and abstracts collectively amount to a productive research record as a member of the Department of Biomedical Engineering.

Recent and Significant Publications:

Rosario, RA, Marchi, B.C., Arruda, E.M., Coleman, R.M., "The influence of anterior cruciateligament matrix mechanical properties on simulated whole-knee biomechanics," submitted to *J Biomech Eng*, 10/2019.

Marchi BC, Arruda EM, Coleman R., "The effect of articular cartilage focal defect size and location in whole knee biomechanics models," *J Biomech Eng*. 2019.

Wu B, Durisin EK, Decker JT, Ural EE, Shea LD, Coleman RM, "Phosphate regulates chondrogenesis in a biphasic and maturation-dependent manner," *Differentiation*, 2017 May.

Carrion B, Souzanchi MF, Wang VT, Tiruchinapally G, Shikanov A, Putnam AJ, Coleman RM, "The Synergistic Effects of Matrix Stiffness and Composition on the Response of Chondroprogenitor Cells in a 3D Precondensation Microenvironment," *Adv Healthc Mater*, 2016 May.

Coleman RM, Schwartz Z, Boyan BD, Guldberg RE, "The therapeutic effect of bone marrow-derived stem cell implantation after epiphyseal plate injury is abrogated by chondrogenic predifferentiation," *Tissue Eng Part A*, 2013.

Service: Since being appointed in 2012, Professor Coleman has taken on numerous important service roles at the departmental, college, university and external levels. In BME, she has served on the Graduate Education Committee; Graduate Admissions Committee, served as advisor for the BMES student chapter; served on the selection committee for SROP and SURE programs, and Faculty Search Committees. At the college level, Professor Coleman chairs the NextProf Engineering Future Faculty Development initiative; is actively involved in graduate student recruitment at the National Society of Black Engineers Annual Convention, serves as a mentor to the Atlanta University Center Consortium students, works with the Summer College Engineering Exposure Program, the pre-college Engineering Program, and works with the National Council of Negro Women at UM. At the university level, Professor Coleman has contributed to multi-unit research initiatives, reviewing grant applications for MICHR, UMOR and the Michigan Integrative Musculoskeletal Health Core Center. These endeavors also reflect a significant amount of effort and dedication. Professor Coleman's service to the BME Department, the CoE, and the UM nationally is pivotal for efforts to increase diversity at the undergraduate, graduate and junior faculty levels, and for increasing undergraduate participation in research and outreach.

External Reviewers:

Reviewer A: "…all aspects of Dr. Coleman's portfolio speak to her growth as an educator, as a scientist, and as a leader in the last several years such that now she has a well-developed set of skills that will support her continued success in the next phase of her career as an Associate Professor. In each area, there is a strong record of accomplishment, and an even more exciting potential for high achievement at the next step."

Reviewer B: "…I find that Professor Coleman possesses a portfolio worthy of promotion to the position of Associate Professor with tenure and she receives my strongest endorsement. I believe she has exceptional promise for continued growth at the University of Michigan and within the discipline."

Reviewer C: "…Dr. Coleman displays the intelligence, scholarship, well-roundedness, and creativity that make her a successful leader in her field. She has the ability to work cohesively with other scientists (e.g. developmental bone biologists) and to acquire a broad range of skills and experience that spurs innovation."

Reviewer D: "… I believe Dr. Coleman is an asset to your department as evidenced by her exiting research directions, funding, and strongly accelerating trajectory, and I highly recommend her for tenure."

Reviewer E: "Dr. Coleman's qualifications are comparable to some of our successful candidates at the rank of Associate Professor with Tenure. Upon reflection of all the information, I believe that Dr. Coleman meets the criteria for excellence in scientific research, teaching and service, and meets the qualifications required for promotion to Associate Professor with Tenure."

Summary of Recommendation: Professor Coleman has established an innovative research program, and has excelled at teaching, with strong service to the department and college. It is with the support of the College of Engineering Executive Committee that I recommend Rhima M. Coleman for promotion to associate professor of biomedical engineering, with tenure, Department of Biomedical Engineering, College of Engineering and Medical School, and associate professor of mechanical engineering, without tenure, Department of Mechanical Engineering, College of Engineering.

Alec D. Gallimore, Ph.D.
Robert J. Vlasic Dean of Engineering
College of Engineering

Marschall S. Runge, M.D., Ph.D.
Executive Vice President for Medical Affairs
Dean, Medical School

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