Approved by the Regents
May 16, 2019

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

Greg M. Thurber, assistant professor of chemical engineering, Department of Chemical Engineering, College of Engineering, and assistant professor of biomedical engineering, College of Engineering and Medical School, is recommended for promotion to associate professor of chemical engineering, with tenure, Department of Chemical Engineering, College of Engineering, and associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, College of Engineering and Medical School.

Academic Degrees:

Ph.D.	2008	Massachusetts Institute of Technology, Chemical Engineering, Cambridge, MA
B.S.	2003	Pennsylvania State University, Chemical Engineering (with Honors), University Park, PA
Certificate	2003	Pennsylvania State University, Minor in Biochemistry and Molecular Biology, University Park, PA

Professional Record:

2013 – present	Assistant Professor, Department of Biomedical Engineering, University of Michigan
2012 – present	Assistant Professor, Department of Chemical Engineering, University of Michigan
2011 – 2012	Junior Faculty, Radiology, Harvard Medical School/Massachusetts General Hospital, Boston, MA
2008 - 2011	Post-doctoral Research Fellow, Center for Systems Biology, Harvard Medical School/Massachusetts General Hospital, Boston, MA

Summary of Evaluation:

Teaching: Professor Thurber's teaching activities are exemplary. His classroom teaching is of the highest quality and has been described by his students as inspiring. He has taught very large and small undergraduate classes, developed a new graduate-level class, and delivered his classes very well as demonstrated by exemplary teaching scores. He has mentored a significant number of undergraduates and runs a laboratory with a large group of graduate students. He has graduated three Ph.D. students with eight more in progress. He has been commended for his mentoring style, his generosity with his time, and his appreciation for work-life balance. His trainees have generated ample publications and appeared to be well prepared for their next positions.

Research: Professor Thurber has established an innovative, impactful, and well-funded research program at Michigan. His lab focuses on understanding how molecular properties of drugs and imaging agents impact their distribution and effectiveness, to date-making contributions in the areas of peptide engineering, targeted cancer therapeutics, and disease screening/imaging. He is able to bridge theory and experimental validation that includes molecular through animal-level

work. This approach is unique in his field, and is lauded by his external letter writers. An important recent finding relates to developing a new class of non-invasive molecular screening probes—in effect, a pill for imaging breast cancer, and this has attracted significant media coverage. The work Professor Thurber has completed at Michigan has resulted in 19 peer-reviewed publications that have appeared in high quality journals and two invention reports filed. He has over 35 full articles in peer-reviewed journals, including work previous to Michigan. The recognized value of Professor Thurber's work is also reflected by his strong funding record, including seven external grants received as the PI while at UM (total federal funding of ~$2.5M and industrial funding of ~$0.67M). This funding includes an R01-like (R35) grant from NIH, an NSF CAREER Award, and an NIH R21 award. He has given 26 invited external presentations on his research at top universities, companies, professional societies, and conferences (including two Gordon Conferences)—a mark of his growing scholarly reputation.

Recent and Significant Publications:

Bhatnagar, S., K.D. Verma, Y. Hu, E. Khera, A. Priluck, D.E. Smith, G.M. Thurber, "Oral Administration and Detection of a Near-Infrared Molecular Imaging Agent in an Orthotopic Mouse Model for Breast Cancer Screening," *Molecular Pharmaceutics*, 2018.

Cilliers, C., B. Menezes, I. Nessler, J. Linderman, G.M. Thurber, "Improved Tumor Penetration and Single-Cell Targeting of Antibody Drug Conjugates Increases Anticancer Efficacy and Host Survival," *Cancer Research*, 2018.

Cilliers, C., H. Guo, J. Liao, N. Christodolu, G.M. Thurber, "Multiscale Modeling of Antibody Drug Conjugates: Connecting tissue and cellular distribution to whole animal pharmacokinetics and potential implications for efficacy," *AAPS Journal*, 2016.

Zhang, L., T. Navaratna, G.M. Thurber, "A Helix-Stabilizing Linker Improves Subcutaneous Bioavailability of a Helical Peptide Independent of Linker Lipophilicity," *Bioconjugate Chemistry*, 2016.

Zhang, L., T. Navaratna, J. Laio, G.M. Thurber, "A Dual-Purpose Linker for Alpha Helix Stabilization and Imaging Agent Conjugation to Glucagon-Like Peptide-1 Receptor Ligands," *Bioconjugate Chemistry*, 2015.

Service: Professor Thurber's record in service is excellent. His major contributions include service on the college's ChE Search Committee and the Graduate Committee, along with the Safety Committee and serving as faculty advisor to a student honor society. In all of these roles, he has been responsible and thoughtful, and he is respected by his colleagues as a good citizen eager to advance the department. Professor Thurber has both developed and continued initiatives aimed at diversifying the STEM pipeline, reaching out to local under-resourced school districts and bringing middle and high school students to campus for a day of hands-on experiments and other groups of students to learn about concepts and applications of chemical engineering from students in his ChE 230 class. He has also engaged in substantial and significant external service that includes serving as an area coordinator and session chair at multiple professional meetings, serving as an editorial board member for a newer journal, and on ad-hoc review panels at NSF and NIH. These roles speak to his growing national scholarly reputation as well as an ability to follow through on important roles to the community.

External Reviewers:
Reviewer A: "Greg's ability to combine pharmacokinetics modeling with molecular-level reagent design separates him from the rest of the Chemical Engineers working in this area."

Reviewer B: "Greg is the total package: a model citizen and ambassador for the field, in addition to being an accomplished engineer and scientist, who deserves tenure at Michigan without reservation."

Reviewer C: "He has published in the best journals in his field, including *Molecular Pharamaceutics, Bioconjugate Chemistry*, *PNAS*, and *Nature Communications* among others."

Reviewer D: "Dr. Thurber's combined expertise across quantitative biochemistry, molecular design, and engineering kinetics and transport analysis is what facilitates his success with this highly effective integrative approach, which is manifested broadly over his publication portfolio."

Reviewer E: "…Dr. Thurber's highest impact contributions have been around his discovery of the role of drug distribution in the efficacy of antibody-drug conjugates (ADCs)..."

Reviewer F: "The approach, elegantly described and analyzed by Dr. Thurber has the potential to be a game changer. ... I believe that Dr. Thurber is an outstanding young protein engineer with an extremely positive trajectory."

Summary of Recommendation: Professor Thurber's teaching is among the very best in the department, he has created a world-class research portfolio, and contributes to outreach and service activities at many levels. It is with the support of the College of Engineering Executive Committee that I recommend Greg M. Thurber for promotion to professor of chemical engineering, with tenure, Department of Chemical Engineering, College of Engineering, and associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, College of Engineering and Medical School.

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

May 2019