

## PROMOTION RECOMMENDATION

University of Michigan

College of Engineering

Mary-Ann Mycek, associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, College of Engineering is recommended for the granting of tenure to be held with her title of associate professor of biomedical engineering, Department of Biomedical Engineering, College of Engineering.

### Academic Degrees:

	1986	University of Toronto, Ontario, Two-year Physics Specialist Programme
B.S.	1989	Rochester Institute of Technology, Physics
M.A.	1991	University of California at Berkeley, Physics
Ph.D.	1995	University of California at Berkeley, Physics

### Professional Record:

2003-present	Associate Professor of Biomedical Engineering, University of Michigan
1998-2002	Assistant Professor of Physics and Astronomy, Dartmouth College
1996-1998	Postdoctoral Research Fellow in Dermatology, Harvard Medical School and Massachusetts General Hospital

### Summary of Evaluation:

Teaching: During her time as Associate Professor at the University of Michigan, Professor Mycek has made important contributions to the teaching mission of the Department of Biomedical Engineering through her classroom teaching and her development of new courses, specifically in the areas of biomechanics and biomedical optics. Professor Mycek has developed two new courses, BME 499 – Introduction to Biomechanics (sophomore level, taught for the first time Winter '04) and BME 599 – Biomedical Optics (graduate, taught for the first time Fall '03). The undergraduate course is a required course for all undergraduates in the Department. The graduate course is an important addition to the graduate program. The range of Professor Mycek's Q1 and Q2 scores were: BME 499 (Q1: 2.8-4.0, Q2: 2.9-4.4); BME 599 (Q1: 4.1-4.3; Q2: 4.2-4.7).

Professor Mycek has chaired or co-chaired 2 doctoral committees and she is the chair or co-chair of 4 doctoral committees of current students. In addition, Professor Mycek has advised research projects for 5 Masters-level and 6 undergraduate students. She has also mentored 3 post-doctoral fellows. Students were uniformly positive in their assessment of Professor Mycek's mentoring. Professor Mycek is exceptional in terms of combining scientific rigor and discipline with supportive guidance to foster a rich and creative environment for research and scholarship.

Research: Professor Mycek has a very active research group, focusing on biomedical optics. Professor Mycek has published 26 (5 since her last promotion) papers in top-notch peer-reviewed publications, as well as 7 refereed conference proceedings in selective conference (all 7 since last promotion), 1 book and 2 book chapters (all since her last promotion). Her papers are published in well-respected journals, and are well cited. Her work in biomedical optics is especially notable because it ranges from 'bench to bedside', including fundamental physics to translational research resulting in new clinical diagnostic technology. Her group has made important contributions to fluorescence lifetime spectroscopy and imaging of biomedical samples. She has developed novel microscopes that have placed her group in a unique position to conduct translational studies of this exciting technology. Professor Mycek has

developed an international standing in biomedical optics as evidenced by her selection as a Program Chair for a major international conference in Europe in biomedical optics. She is well respected by people from a wide range of engineering, scientific and clinical backgrounds, demonstrating his multidisciplinary impact.

Professor Mycek has an impressive portfolio of extramural research grants that support her basic and translational research activities. She has raised over \$5.4M in extramural funding from the NIH, NSF and private foundations over the last 5 years. This includes 5 active extramural research projects of which she is principal investigator or primary co-investigator. In addition, Professor Mycek is developing new research programs in the area of early-stage detection of esophageal cancers. Professor Mycek is well positioned to continue to excel in her research program in the future.

#### Recent and Significant Publications:

- K. Vishwanath and M.-A. Mycek: Time-resolved photon migration in bi-layered tissue models, *Optics Express*, Vol. 13, No. 19, pp. 7466-7482 (2005).
- K. Vishwanath and M.-A. Mycek: Do fluorescence decays remitted from tissues accurately reflect intrinsic fluorophore lifetimes?, *Optics Letters*, Vol. 29, pp. 1512-1514 (2004).
- P. Urayama, W. Zhong, J.A. Beamish, F.K. Minn, R.D. Sloboda, K.H. Dragnev, E. Dmitrovsky, and M.-A. Mycek: A UV-Visible-NIR fluorescence lifetime imaging microscope for laser-based biological sensing with picosecond resolution, *Applied Physics B: Lasers and Optics*, Vol. 76, pp.483-496 (2003). (Invited.)
- W. Zhong, P. Urayama, M.-A. Mycek: Imaging fluorescence lifetime modulation of a ruthenium-based dye in living cells: the potential for oxygen sensing, *Journal of Physics D: Applied Physics*, Vol. 36, pp.1689-1695 (2003).
- K. Vishwanath, B.W. Pogue, M.-A. Mycek: Quantitative fluorescence lifetime spectroscopy in turbid media: Comparison of theoretical, experimental, and computational methods, *Physics in Medicine and Biology*, Vol. 47, pp.3387-3405 (2002).
- B.W. Pogue, J.D. Pitts, M.-A. Mycek, R.D. Sloboda, C. Wilmot, J.A. Brandsema, J.A. O'Hara: In vivo NADH fluorescence monitoring as an assay for cellular damage in photodynamic therapy, *Photochemistry and Photobiology*, Vol.74, No.6, pp.817-824 (2001).

Service: Professor Mycek has an impressive service portfolio that includes significant contributions at the Department and College levels. She has served on 10 BME Department committees and 4 College of Engineering committees. Her service has provided important operational contributions as well as leadership in developing directions for strategic growth of the department. At the national level, she has an extensive record of serving on editorial boards for journals, program committees for conferences and review panels for research centers and grant proposals. Professor Mycek is also making significant contributions to diversity and climate by serving as an active role model and mentor for future generations of scientists and engineers.

#### External Reviewers:

Reviewer (A): "Mary-Ann should certainly be tenured at the University of Michigan and certainly fits the requirements at [my college] for tenure."

Reviewer (B): "I am confident that she holds exceptional promise for future professional growth and support her promotion with enthusiasm."

Reviewer (C): "I would rank her in the top 10% among her peers at a similar career stage in biomedical engineering. It is without any reservations that I provide my whole-hearted support for her application."

Reviewer (D): "... I believe that Dr. Mycek's accomplishments would result in promotion to Associate Professor with tenure at both institutions and I am happy to recommend promotion at Michigan."

Reviewer (E): "In conclusion, I would recommend Mary-Ann Mycek to be tenured. Her combination of basic science and more clinically-oriented approach makes promises for a bright research carrier in this field."

Reviewer (F): "Dr. Mycek is an excellent example of a translational scientist, and her current record of accomplishment demonstrates creativity, productivity, and versatility. This leaves little doubt that she will continue to be very successful, with a productive future ahead of her."

Reviewer (G): "For the above achievements, it is my pleasure to support the application of Dr. Mycek for the position of Associate Professor with tenure at your institution."

Summary of Recommendation: Three short years after arriving at the University of Michigan from Dartmouth, Professor Mary-Ann Mycek has rapidly become a valued member of the BME Department. Her research program is productive and creative and she has an outstanding international standing. She is an excellent instructor in the classroom, as well as a talented and dedicated educator and mentor to the broader community of undergraduate students, graduate students, and post-doctoral researchers. She has made valued contributions to the Department, College, and her research field. It is with the support of the College of Engineering Executive Committee that I recommend her the granting of tenure to be held with her title of associate professor of biomedical engineering, Department of Biomedical Engineering, College of Engineering.



Ronald Gibala  
Interim Dean, College of Engineering

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