

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Literature, Science, and the Arts

Daniel B. Forger, associate professor of mathematics, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of mathematics, with tenure, College of Literature, Science, and the Arts [also being promoted to research professor, Department of Computational Medicine and Bioinformatics, Medical School].

Academic Degrees:

Ph.D.	2003	New York University
M.S.	1999	Harvard University
B.A.	1999	Harvard University

Professional Record:

2009 – present	Associate Professor, Department of Mathematics, and Research Assistant Professor, Department of Computational Medicine and Bioinformatics, University of Michigan
2005 – 2009	Assistant Professor, Department of Mathematics, University of Michigan
2003 – 2005	Sloan Post-doctoral Fellow, Department of Biology, New York University

Summary of Evaluation:

Teaching – Professor Forger’s teaching has been concentrated in numerical and mathematical biology courses, where there is high demand from students at all levels. Student evaluations show that he has been very successful in all of his courses. He has an outstanding record of directing undergraduate research projects. Seven of these projects have resulted in papers submitted to peer-reviewed journals, with four already published. He has also been very successful at supervising students who are writing their Ph.D. dissertations.

Research – Professor Forger is internationally regarded as a leader in the study of biological rhythms. He has published many outstanding papers, several of which have appeared in the most prestigious and widely read scientific journals, including *Science* and *Proceedings of the National Academy of Sciences*. He has made impressive contributions at every possible level of inquiry: genomic, molecular, cellular, neural, physiological, and behavioral. Professor Forger also has an outstanding record of attracting external funding for his research. He is currently the principal investigator for a \$1M Human Frontiers of Science project grant and a \$783K Air Force Office of Scientific Research grant.

Recent and Significant Publications:

“Signal processing in cellular clocks,” *Proceedings of the National Academy of Sciences*, 108, 2011, pp. 4281-4285.  
“Building biological memory by linking positive feedback loops,” with D. Chang, et al., *Proceedings of the National Academy of Sciences*, 107, 2010, pp. 175-180.  
“Temporal electrical silencing in the mammalian circadian clock,” with M. Belle, et al., *Science*, 326, 2009, pp. 281-284.

“A simple modification of the Hodgkin & Huxley equations explains type 3 excitability in squid giant axons,” with J. Clay and D. Paydarfar, *Journal of the Royal Society Interface*, 5, 2008, pp. 1421-1428.

Service – Professor Forger has performed important service in the Department of Mathematics, including a four-year term as undergraduate advisor. Beyond the university, he has been a member of organizing committees for several conferences and external advisory boards for biology research programs. He is a member of the editorial board for a prominent journal in his field.

External Reviewers:

Reviewer (A)

“Daniel is one of the *top* mathematicians working in systems biology, doing some of the most creative and inventive research in the field. He is advancing and defining the field through his seminal modeling work on mammalian circadian rhythms, work that has been published in leading journals such as *Science* and *PNAS*.”

Reviewer (B)

“He has had spectacular success with undergraduate students and published several high profile papers with them. ...his success in collaboration with many different scientists and his decent funding success leave me to believe that he will continue to have an outstanding career in mathematical biology.”

Reviewer (C)

“Given his unique training, his remarkable research achievements and his creativity, I have no doubts that Dr[.] Daniel Forger will continue to play a leading role in future developments in this important, rapidly developing field, at the interface between mathematic sand the life sciences.”

Reviewer (D)

“One of the...traits that I most appreciate is how hard he works to bring his mathematical concepts to biologists. This must show in his list of publications and collaborations, as he is asked by the key players in the field of chronobiology to bring in his expertise when modeling is called for. ... His funding is to be envied by some of the colleagues trying to run wet labs in this climate of shrinking opportunities.”

Reviewer (E)

“There is also emerging recognition of the profound medical significance of circadian rhythm disturbances in a broad range of diseases. Forger is doing the most important and fundamental research in this important field. It is a pleasure to recommend his promotion to full Professor, and to do so in the strongest possible terms!”

Reviewer (F)

“Finally, I come to the question about national and international visibility. He certainly has it. I don't know anyone with more *PNAS* and *Science* publications... I think the answer to your question is easy. He should be promoted.”

Reviewer (G)

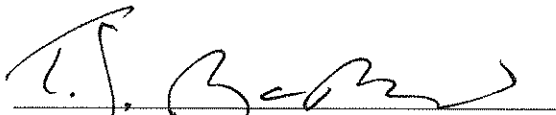
“Daniel Forger has made important contributions in our understanding of the mammalian circadian clock by developing and analyzing detailed mathematical/reaction kinetic models which show relevant predictive power. ...he runs a true interdisciplinary research program between theoreticians and experimentalists, where he makes his mathematical expertise available to the whole group/community.”

Reviewer (H)

“Danny’s record of teaching at the University of Michigan is exemplary but not surprising, and his students have done, and will be doing, great things. I was surprised to learn about his proposed textbook, ‘A Theory of Biological Timekeeping,’ which I am very eager to see in print. I predict it will be a classic. I believe he is an outstanding candidate for promotion to professor with tenure.”

Summary of Recommendation:

Professor Forger has a high quality research program in mathematical and computational biology, and is recognized as a leading researcher in his field. He plays an important role in teaching and has performed excellent service. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Daniel B. Forger be promoted to the rank of professor of mathematics, with tenure, College of Literature, Science, and the Arts.



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Terrence J. McDonald  
Arthur F. Thurnau Professor,  
Professor of History and Dean  
College of Literature, Science, and the Arts

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