

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

Michal R. Zochowski, associate professor of physics, with tenure, and associate professor of biophysics, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of physics, with tenure, and professor of biophysics, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Habilitation	2002	Polish Academy of Science
Ph.D.	1995	University of Warsaw
M.Sc.	1993	University of Warsaw

Professional Record:

2008 – present	Associate Professor, Program in Biophysics, University of Michigan
2007 – present	Associate Professor, Department of Physics, University of Michigan
2007 – 2008	Associate Research Scientist, Program in Biophysics, University of Michigan
2001 – 2007	Assistant Professor, Department of Physics, and Assistant Research Scientist, Biophysics Research Division, University of Michigan
1998 – 2001	Post-doctoral Fellow, Department of Molecular and Cellular Physiology, Yale University School of Medicine
1996 – 2000	Assistant Professor, Center for Theoretical Physics, Polish Academy of Science
1996 – 1998	Post-doctoral Fellow, Center for Complex Systems, Florida Atlantic University

Summary of Evaluation:

Teaching – Professor Zochowski has an outstanding teaching record. He has taught undergraduate courses at all levels for a wide variety of audiences. He has been successful with science concentrators in Biophysics and the science-averse audience in the Everyday Physics course. Professor Zochowski also developed a course in biocomplexity for which he received excellent student evaluations. In fact, his teaching evaluations are generally very strong. Professor Zochowski played an important role in obtaining a three-year Research Experiences for Undergraduates (REU) National Science Foundation grant for the Program in Biophysics. He currently has seven Ph.D. students nearing completion.

Research – Professor Zochowski's research bridges the disciplines of statistical physics, network science, and neurobiophysics. He uses experimental data from neuroscience for sophisticated modeling purposes to understand how the brain works. He has been very productive and has authored or co-authored 61 papers; eighteen papers have been completed in the past five years. Professor Zochowski's research funding record is strong with multiple awards from the National Science Foundation, among others.

### Recent and Significant Publications:

- “Cellularly-driven differences in network synchronization propensity are differentially modulated by firing frequency,” with C. Fink and V. Booth, *PLoS Computational Biology*, 7, 2011, e1002062.
- “From network structure to network reorganization: Implications for adult neurogenesis,” with C. M. Schneider-Mizell, et al., *Physical Biology*, 7, 2010, 046008.
- “Interaction of cellular and network mechanisms in spatio-temporal pattern formation in neuronal networks,” with A. Bogaard, et al., *Journal of Neuroscience*, 29(6), 2009, pp. 1677-1687.
- “Simple dynamical process may underlie memory reactivation during sleep,” with P. Jablonski and G. R. Poe, *Physical Review E*, 75, 2007, 011912.

Service – Professor Zochowski has performed excellent service on important committees in both his units. He has also organized conferences and workshops at Michigan. He serves on the editorial board of two major journals in his field and as a panelist reviewer for the National Science Foundation (2011-present).

### External Reviewers:

#### Reviewer (A)

“From his CV it seems clear that Michal has an active and successful laboratory at the University of Michigan. The[re] are many published and submitted papers and he has mentored a large number of scientists... ..I strongly recommend his promotion to Professor with tenure.”

#### Reviewer (B)

“Since tenure, Dr. Zochowski has built up his laboratory considerably and has trained and graduated six PhD students. This is an excellent record. The students... seem to have secured good postdoctoral fellowships. ...Dr. Zochowski has accumulated a solid record of interdisciplinary physics. ... He seems to have a good research plan for the near future, is providing solid training for students, and forging a name for himself in complex systems.”

#### Reviewer (C)

“...Zochowski has made important contributions to the analysis of neural dynamics at the cellular and network level, with successful publications and research funding from the ONR, NIH and NSF. His work is well-known at the national and international level and he is deserving of promotion to the rank of full professor at the University of Michigan.”

#### Reviewer (D)

“...Dr. Zochowski’s scholarly work is original, important and well known. His background and skills put him in very unique positions to make important progress to relevant neurobiological problems. ...he is in an important asset to the University of Michigan, bridging the divide between the physical and biological sciences in research and education - I wished I had more colleagues like Michal at my own institutions.”

#### Reviewer (E)

“Professor Zochowski is a first-class, extraordinary productive and very successful researcher. He has made very substantial and original scientific contributions to several important problems

on the borderline between statistical physics, complex systems science and neuroscience. His list of publications is outstanding.”

Reviewer (F)

“His complementary approach is rather unique as there are not many laboratories in the world that are able to perform high resolution experiments on *in vitro* neuronal networks using cutting edge optical imaging and electrophysiological recording techniques and to link them to computational studies. Michal Zochowski has published a number of seminal papers that have been received with high enthusiasm by the respective communities and that have triggered new investigations.”

Reviewer (G)

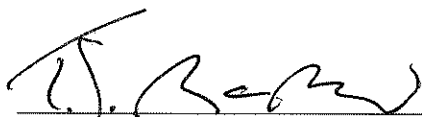
“His scholarly record shows a high number of interesting publications. I would say he has done work that is interesting and...at the same time it seems to be solid, professionally-executed work to be proud of. ...judging from the strong upward trend in citations he will be continuing to gain momentum for several years.”

Reviewer (H)

“Dr. Zochowski has an international reputation as a very solid physicist, exploring issues of neuronal dynamics. ...this is one of a handful of scientists whom I pay this much attention to in terms of gaining new physical insight into biomedical phenomena.”

Summary of Recommendation:

Professor Zochowski has shown the highest intellectual quality, productivity, and leadership in creating and disseminating knowledge in physics and biophysics. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Michal R. Zochowski be promoted to the rank of professor of physics, with tenure, and professor of biophysics, 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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