

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

Elizaveta Levina, associate professor of statistics, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of statistics, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2002	University of California, Berkeley
M.S.	1997	University of Utah
B.S.	1994	St. Petersburg State University

Professional Record:

2009 – present	Associate Professor, Department of Statistics, University of Michigan
2002 – 2009	Assistant Professor, Department of Statistics, University of Michigan

Summary of Evaluation:

Teaching – Professor Levina has made excellent contributions to the educational mission of the Department of Statistics and to the college. She has served as the Ph.D. program advisor, and the work that she has done in that capacity has directly led to many positive changes in the department’s graduate program. One of those is the Ph.D. curriculum. Professor Levina played a leading role in designing and implementing a substantially improved program. Her impressive command of issues and ability to articulate her vision played a big part in that success. Professor Levina has been a highly accessible advisor to all doctoral students in statistics. Whether it is about student difficulties in classes, challenges in GSI work, or concerns with their research, etc., students open up to Professor Levina. Her passion to help, her perception and sensitivity, and her ability to communicate are all keys to her success.

Research – Professor Levina’s performance in research is extraordinary. In 2010 she won the American Statistical Association Junior Noether Award, the highest honor given to a researcher in her cohort in the field of nonparametric statistics. Professor Levina works in some of the fastest developing areas in statistics today, including high-dimensional covariance estimation, graphical models, and statistical network analysis. A common feature of her research is studying problems arising in the so-called big data arena in which inference of the covariance matrix plays a key role. Professor Levina has introduced many original computational and theoretical tools in those areas in her research over the last decade. The advances were so exciting that they have spawned a new paradigm in high-dimensional statistics, which has since attracted many top researchers as well as a new generation of researchers. Professor Levina’s publication record is impressive in quantity as well as in quality. Her work has appeared in some of the top journals in statistics as well as in the top probability journal, as well as the prestigious *Proceedings of the National Academy of Sciences*. There is also a clear trend of acceleration in her research productivity.

Recent and Significant Publications:

“Pseudo-likelihood methods for community detection in large sparse networks,” with A. A. Amini, et al., *Annals of Statistics*, 41, 2013, pp. 2097-2122.

“Partial estimation of covariance matrices,” with R. Vershynin, *Probability Theory and Related Fields*, 153, 2012, pp. 405-419.

“Community extraction for social networks,” with Y. Zhao and J. Zhu, *Proceedings of the National Academy of Sciences*, 108, 2011, pp. 7321-7326.

“A new approach to Cholesky-based estimation of high-dimensional covariance matrices,” with A. J. Rothman and J. Zhu, *Biometrika*, 97, 2010, pp. 539-550.

Service – Professor Levina’s contributions to service are outstanding. In the past two years she has managed the admission process of the statistics Ph.D. program. As the Ph.D. program advisor, she also oversees the Ph.D. qualifying exams and makes GSI and GSRA assignments. Her service to the profession is also substantial. She has been an active conference organizer and has served on the editorial boards of several journals.

External Reviewers:

Reviewer (A)

“She is doing everything one could hope for in a full professor, with energy and success... Her achievements command admiration – she is one of our best, and her trajectory is still rising quickly.”

Reviewer (B)

“As her cv makes clear she is much in demand as a speaker and an excellent organizer as well. ... I recommend her most highly and without reservation.”

Reviewer (C)

“... Elizaveta Levina is a top leader in the field of high-dimensional statistical inference and network modeling. Her expertise is broad... Liza’s research is internationally recognized and competitive at the highest level. I recommend her with enthusiasm for promotion to the rank of professor with tenure in your department.”

Reviewer (D)

“Liza has made remarkable and wide-ranging contributions to statistical theory, method, and application. She has international distinction, exceptional track records, and is a strong and conscientious leader.”

Reviewer (E)

“Her research is at the leading edge of modern advances in statistical science, where statistics intersects with machine learning and signal processing; and it has resulted in ingenious, highly original methodology, underpinned by insightful theoretical analysis and motivated by fascinating applications. ... She is already a star in her field. She would be a strong candidate for the COPSS award, and I urge you to nominate her. But in the meantime she should be promoted to Full Professor.”

Reviewer (F)

“Liza has a strong collaborative research program and publishes regularly in two of the top statistics journals... Her theoretical results on high dimensional covariance estimation are well known and widely cited, and many of the statistical methods she has developed are used within and beyond the statistics community. ... Liza has a very high profile in the Statistics community nationally and internationally, due to her insightful contributions to challenging and modern problems in Statistics.”

Reviewer (G)

“In addition to her excellent research record, it is clear that Liza is also an excellent advisor, having served as an advisor (or co-advisor) to six Ph.D. students to date. From her CV, many of her students have received various types of best paper awards for their research. ... She also makes significant contributions to the broader statistical community, serving on the editorial boards of [several top journals].”

Reviewer (H)

“...Professor Levina has excelled on all fronts by any academic measure. The Junior Noether Award she received from the American Statistical Association is most surely only the beginning of recognition of her achievements. She would be a shoo-in for the most prestigious COPSS award in Statistics.”

Summary of Recommendation:

Professor Levina is among the elite researchers working in the forefront of several key areas related to big data. She is an excellent teacher and advisor, and a valued citizen. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Elizaveta Levina be promoted to the rank of professor of statistics, with tenure, College of Literature, Science, and the Arts.



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Susan A. Gelman  
Heinz Werner Distinguished University Professor,  
Professor of Psychology and Interim Dean,  
College of Literature, Science, and the Arts

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