Approved by the Regents
May 18, 2017

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

Stilian A. Stoev, 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.	2005	Boston University
M.Sc.	1998	Sofia University, Bulgaria

Professional Record:

2011 – present	Associate Professor, Department of Statistics, University of Michigan
2005 – 2011	Assistant Professor, Department of Statistics, University of Michigan

Summary of Evaluation:

Teaching – Professor Stoev has a strong teaching record. Since 2011, he has taught four new courses and in each one he took the initiative to improve the course by introducing modern topics. In a 600-level core course for Ph.D. students, Professor Stoev took the stochastic modeling class to a new level. This year he took a new approach to a 500-level Master's level course on statistical methods for financial data. Professor Stoev teaches with passion and student evaluations of his courses and of his teaching are in line with the averages of other instructors of the same course. Professor Stoev has advised or co-advised seven Ph.D. students since 2011. He is a popular choice among students who are interested in mathematical statistics.

Research – Extreme value theory is at the core of Professor Stoev's research, which is widely used in many disciplines, including finance, engineering, traffic prediction, and atmospheric science research. His contributions in this area are quite broad and substantial. Professor Stoev has contributed significantly to the extreme value modeling for dependent data and the concurrent extremes, and he recently developed a new paradigm in extreme value theory. Professor Stoev has published steadily in the leading journals of his field. He also publishes collaborative work in a wide range of journals that are not considered as "core" in his field. Many of the external reviewers felt this diversity represents his breadth and strength, as Professor Stoev is able to utilize his training in a traditionally theory-centric field to address practical problems of the modern era. He has an excellent record of grant support. Since 2011, he has received two significant National Science Foundation (NSF) grants. His most recent NSF grant is a Focused Research Groups (FRG) grant from the Division of Mathematics Sciences (DMS). FRG is a highly competitive program that funds collaborative research that addresses major research challenges in mathematics or statistics. The grant is another confirmation of the importance of Professor Stoev's research program.

Recent and Significant Publications:

"Stochastic integral representations and classification of sum- and max-infinitely divisible processes," with Z. Kabluchko, *Bernoulli*, 22(1), 2016, pp. 207-142.

"Network-wide statistical modeling, prediction, and monitoring of computer traffic," with J. Vaughan and G. Michailidis, *Technometrics*, 55(1), 2013, pp. 79-93.

"Decomposability for stable processes," with Y. Wang and P. Roy, *Stochastic Processes and their Applications*, 122(3), 2012, pp. 1093-1109.

"Estimating heavy-tail exponents through max self-similarity," with G. Michailidis and M. S. Taqqu, *IEEE Transactions on Information Theory*, 57(3), 2011, pp 1615-1635.

Service – Professor Stoev has an excellent service record at the university and in the statistics community. He has served on a number of important committees on campus, including the LSAIT Faculty Advisory Committee, and he is a statistics coordinator for the Quantitative Finance and Risk Management program run jointly by the Departments of Mathematics and Statistics. This year, he served as the interim director of the departmental Ph.D. program and made significant efforts in the recruiting and admissions of graduate students and mentoring of graduate student instructors. His work is already making a positive impact on the Ph.D. program. Professor Stoev has also served on the editorial boards of two probability and statistics journals, including *Bernoulli*, the official journal of the Bernoulli Society, a major international society of mathematical statistics and probability. He has organized or co-organized several conferences, including a 2015 international conference on extreme value analysis in Ann Arbor. This conference attracted top scholars in the field from around the world, and because of its huge success, Ann Arbor has become well known in the extreme value theory community.

External Reviewers:

Reviewer (A)

"Stilian's case for promotion to full professor is a strong one. … In addition to his excellent research record, he has been a conscientious advisor to PhD students. I have seen him interact first hand with his (and other!) students at meetings and poster sessions and he has a pleasant way of engaging students in a supportive and nonthreatening fashion. … He is a great ambassador for the profession. I have no hesitation in recommending Stilian for the promotion."

Reviewer (B)

"His recent papers with Scheffler on implicit extremes and with Dombry and Ribatet on concurrent extremes are both very interesting and original, and are bound to lead to much further development, because they raise issues that have previously been somewhat ignored, and yet are crucial in applications. …his work is outstanding…"

Reviewer (C)

"…I would like to mention his service to the scientific community which by far exceeds an average commitment. …last year he (jointly with Tailen Hsing) organized the week-long bi-annual conference on Extreme Value Analysis (EVA). … With almost 150 talks in Ann Arbor, this series of conferences has grown to a considerable size, and I have rarely attended a conference which was as well organized as this one."

Reviewer (D)

"…Stilian is recognized and respected internationally… Signs of this are that he is an Associate Editor of the journal *Extremes* and that he was an Associate Editor of *Bernoulli*. He also gives lucid and well-structured presentations at conferences. This is confirmed by the fact that he was many times invited as a speaker."

Reviewer (E)
"…[Professor] Stoev is an excellent mathematician, with a very strong and innovative scientific output as well as a promising future research agenda. He has an exemplary proven track record of academic citizenship, and this at all relevant levels. His personality as a researcher, as a teacher as well as an academic colleague put him very high in any peer comparison."

Reviewer (F)
"…Dr. Stoev is one of the best researchers in applied probability of his generation. He has a vision of new directions in theoretical and applied research. As a researcher, he has an enormous potential, and also as a leader of a research team. In addition to his qualities as a scientist, he is a wonderful and modest person."

Reviewer (G)
"There is no question Stilian has been enormously productive and influential. He has great range, a diverse set of collaborators, and operates across boundaries. To remove any suspense from this letter, without doubt he deserves promotion and any good program would agree with this assessment."

Reviewer (H)
"Professor Stoev is a very productive researcher. He has wide-ranging interests in the important and active fields long-range dependence - heavy-tailed processes - extreme values. He has also made very promising and interesting contributions to internet and network modeling, including prediction of traffic at non-measured nodes and anomaly detection. His results have had and are having a significant influence on the development of research in…these areas."

Summary of Recommendation:
Professor Stoev's vigorous research program has depth as well as breadth. He stands out as one of a new generation of researchers in mathematical statistics who is able to integrate theory with computing in addressing scientific problems of importance. He is a very conscious teacher and a great mentor to students at all levels. His contributions to the department, the university, and his profession are significant and diverse. The Executive Committee of the College of Literature, Science, and the Arts and I recommended that Associate Professor Stilian A. Stoev be promoted to the rank of professor of statistics, with tenure, College of Literature, Science, and the Arts.

Andrew D. Martin, Dean
Professor of Political Science and Statistics
College of Literature, Science, and the Arts

May 2017