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

Gongjun Xu, assistant professor of statistics, and assistant professor of psychology, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of statistics, with tenure, and associate professor of psychology, without tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2013	Columbia University
B.S.	2008	University of Science and Technology of China (USTC)

Professional Record:

2017 – present	Assistant Professor, Department of Statistics and Department of Psychology, University of Michigan
2013 – 2016	Assistant Professor, Department of Statistics, University of Minnesota

Summary of Evaluation:

Teaching – Professor Xu is a caring and effective teacher. Prior to his move to Michigan, he taught several courses at the University of Minnesota that resulted in excellent student evaluations. At Michigan, he has taught some of the core undergraduate and graduate level courses. Professor Xu cares a lot about how much students learn from his classes, and this makes him a highly appreciated instructor in the department. Peer evaluations, as well as student feedback, agree that Professor Xu is effective in challenging students in class. Professor Xu is also actively engaged in student mentoring. He is currently supervising five Ph.D. students. He is also supervising several undergraduate students, helping them to gain good research experience. His performance in student mentoring has exceeded department expectations for a junior faculty member.

Research – Professor Xu is a highly productive researcher in psychometrics, latent variable models, and high dimensional inference in statistics. Latent class or latent attribute models are used frequently in psychometrics. Such models assume latent variables that represent whether a subject has a specific trait or has mastered a particular skill, as in cognitive diagnosis models in educational measurements. The identifiability of those models is a long-standing issue of fundamental importance. Professor Xu and his collaborators have published a series of articles to address the identifiability issue from a theoretical perspective and, in the case of structured latent class models, Professor Xu is recognized by his peers as having constructed a complete research program tackling the problem of identifiability, estimation, and inference. His single-authored paper published in *Annals of Statistics* (2017) demonstrates his ability and independence to push theoretical boundaries in the area. In more recent years, Professor Xu has made distinctive contributions to high dimensional inference in statistics. He has developed powerful adaptive procedures for testing high-dimensional parameters in regression models as well as covariance matrix structures. The breadth of Professor Xu's research at this stage of his career is impressive. In addition to the important work discussed above, he has worked on a

number of technically challenging problems, from rare event analysis to recurrent event analysis. and he has published consistently in the leading journals of his field. He has been recognized internationally as a recipient of Bernoulli Society New Researcher Award (2019) and the ICSA Outstanding Young Researcher Award (2019). Professor Xu has been funded by several external grants from the NSF, NSA, and NIH, and recently received the NSF CAREER Award.

Recent and Significant Publications:
"Identifiability of restricted latent class models with binary responses," *The Annals of Statistics.* 45(2). 2017, pp. 675-707.
"The sufficient and necessary condition for the identifiability and estimability of the DINA model," with Y. Gu, *Psychometrika*, 84(2), 2019, pp: 468-483.
"Estimation and inference of quantile regression for survival data under biased sampling," with T. Sit, et al., *Journal of the American Statistical Association*, 112(520), 2017, pp: 1571-1586.
"Rare-event analysis of extremal eigenvalues of white Wishart Matrices," with T. Jiang and K. Leder. *The Annals of Statistics*, 45(4), 2017, pp: 1609-1637.

Service – Professor Xu has served on several committees in the department, including the Graduate Curriculum Committee, Master's Admissions Committee, Ph.D. Admissions Committee, Qualifying Exams Committee, and Seminars Committee. In each of these, Professor Xu has fulfilled his duties and made tangible contributions. He has served on a large number of dissertation committees within the university. He has also contributed actively to his profession as a conference session organizer and chair as well as a grant reviewer for journals.

External Reviewers:
Reviewer (A)
"Given the practical importance of Dr. Xu's methodological work, it is not surprising to see that he has also been very successful in obtaining external funding for this work. His NSF grants, including an Early Career Award, and IES grants, are particularly impressive. It is unusual in the field of psychometrics for an individual to have obtained as many awards as he has at this stage."

Reviewer (B)
"…there is no question about Dr. Xu's ability to sustain a research agenda and to be responsive to the needs of the several research directions outlined in his statement. Personally, I would rank Dr. Xu the best scholar [of his cohort] in the field of psychometric research; and one of the best in statistical sciences."

Reviewer (C)
"Professor Xu is already one of the most accomplished statisticians who can publish in both the psychometric literature as well as the top journals in statistics, and this talent should help advance psychometrics as more and more statisticians see these problems. It is great but not at all surprising to see that he is also an effective mentor of graduate students…"

Reviewer (D)
"…you have a treasure in Gongjun Xu. Dr. Xu is an incredibly prolific researcher in several areas of statistics, an international leader in statistical psychometrics, and highly active with

students and service to your department and the broader profession. He has already established all of this for himself, and he appears to be on trajectory to do even more, including applying his methodological work to evaluating students that he teaches… if he were at [my institution], he would be a slam dunk for promotion to associate with indefinite tenure, and as I suggested in my opening paragraph, we would seriously consider fast-tracking him to full."

Reviewer (E)
"I subsequently read Gongjun's 2018 and 2019 papers in these areas and have been impressed by his originality and technical prowess. He has already established himself as a leading researcher at this early stage of his career and has a brilliant future ahead. I therefore support his promotion to Associate Professor and tenure with great enthusiasm."

Reviewer (F)
"I am very impressive [sic] with his CV. His publications in terms of both quantity and quality and his grant record certainly place him at the top of his peers. …your department should nominate Guangjun [sic] for the COPSS president award in the near future since he will be a very strong candidate for this most prestigious award in statistics."

Summary of Recommendation:
Professor Xu is a prolific scholar and has established himself as a top researcher at the interface between statistics and psychometrics. He is a passionate and effective teacher and mentor for students at all levels. He is a highly valuable faculty member in the Department of Statistics. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Gongjun Xu be promoted to the rank of associate professor of statistics, with tenure, and associate professor of psychology, without tenure, College of Literature, Science, and the Arts.

Anne Curzan, Dean
Geneva Smitherman Collegiate Professor of
English Language and Literature, Linguistics,
and Education
Arthur F. Thurnau Professor
College of Literature, Science, and the Arts

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