

PROMOTION RECOMMENDATION

The University of Michigan  
School of Public Health  
Department of Biostatistics

Approved by the  
Regents  
May 21, 2015

Min Zhang, assistant professor of biostatistics, School of Public Health, is recommended for promotion to associate professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health, University of Michigan.

Academic Degrees:

Ph.D. (Statistics)	2008	North Carolina State University
M.A. (Ecology)	2004	Duke University
B.Sc. (Environmental Science)	2001	Peking University

Professional Record:

2008-present     Assistant Professor, Department of Biostatistics, School of Public Health,  
University of Michigan

Summary of Evaluation:

Teaching: Professor Zhang is a valued teacher. She has taught biostatistics 602 (one of our core courses, introducing students to the principles of statistical inference) four times, biostatistics 685 (an elective course, providing an introduction to nonparametric statistics) three times, and biostatistics 870 (a PhD level course discussing repeated measures) twice. These courses are all well attended and biostatistics 602, in particular, is a relatively large course. Professor Zhang's Q2 evaluation scores for BIO 620 have ranged from 3.65 to 4.14. Her scores for other courses have ranged from 4.22 to 5.00. The courses she teaches are demanding and a substantial amount of work. They are also key components of our program. She currently advises two Ph.D. students and three master's students.

Research: Professor Zhang has an excellent research record. She has 33 published articles, with 10 first author papers and two last author papers. Of the 33 published articles, 16 are methodological in nature and 17 are collaborative. Both sets of papers are published in top journals. Journals where she has published methodological papers include *Biometrics*, *Biostatistics*, *Statistics in Medicine*, and *Lifetime Data Analysis*. Her applied contributions include papers published in the *Journal of the American Medical Association*, the *European Heart Journal*, and the *American Heart Journal*.

Professor Zhang is best known for her work in the area of semi-parametric inference. Semi-parametric analysis provides flexible solutions to a variety of problems that arise in the analysis of health data because it allows for valid inference when models describing the relationship between covariates and outcomes are mis-specified. Her best known contribution is perhaps her 2008 paper in *Biometrics* showing how semi-parametric models can be used to allow analysis of baseline covariates in randomized clinical trials – increasing power while still guarding against

incorrect inference (with previous methods, adjustments for baseline covariates could lead to invalid inference). This paper has already been cited 49 times and earned the Snedecor Award from the Committee of Presidents of American Statistical Societies. In addition, she has used her mastery of semi-parametric models to make many other useful contributions to the analysis of clinical trials and of time to event data.

In addition to contributions to statistical methodology, Professor Zhang has been actively involved on a variety of grant funded collaborative research projects. These have focused on topics related to coronary artery disease, liver and kidney transplantation and breast cancer.

Service: Professor Zhang's service also easily meets our expectations for promotion. She has been a regular contributor to departmental committees and helped organize our seminar series and special events. She has organized invited sessions for top statistical meetings (ENAR and JSM) multiple times, is a regular reviewer for outstanding journals and has served as an ad hoc reviewer for the National Science Foundation. She has taught demanding courses (602, 685, 870) with excellent teaching evaluations. She is active in mentoring of doctoral students.

#### Recent and Significant Publications:

Zhang, M. (2015) Robust methods to improve efficiency and reduce bias due to chance imbalance in estimating survival curves in randomized clinical trials. *Lifetime Data Analysis*, 21(1): 119-137. (doi: 10.1007/s10985-014-9291-y PMID: 24522498)

He, Z., Zhang, M., Zhan, X., and Lu, Q. (2014) Modeling and testing for joint association using a genetic random field model. *Biometrics*, 70(3): 471-479 (doi: 10.1111/biom.12160, PMID: 24628067)

Zhang, M. and Schaubel, D. E. (2012) Double-robust semiparametric estimator for differences in restricted mean lifetimes in observational studies. *Biometrics*, 68: 999-1009 (doi: 10.1111/j.15410420.2012.01759.x, PMID: 22471876, PMCID: PMC:3432755)

Zhang, M. and Wang, Y. (2012) Estimating treatment effects from a randomized trial in the presence of secondary treatment. *Biostatistics*, 13(4): 625-636. (doi: 10.1093/biostatistics/kxs009)

Zhang, M., Tsiatis, A.A., and Davidian, M. (2008) Improving efficiency of inferences in randomized clinical trials using auxiliary covariates. *Biometrics*, 64(3): 707-715. (PMC:2574960)

#### External Reviewers:

Reviewer (A): "Not only the number of publications is ideal, but also the topics in which Dr. Zhang specialized are highly advanced, particularly complicated problems in the clinical trials...[her current research interests] are hot topics in biostatistics. I strongly support [her] for the given promotion at this time."

Reviewer (B): "Her work has been original and innovative. [She] is a very productive researcher and has demonstrated her strong capability as an independent researcher. Her work is original, important, and of high quality... Judging from her research impact and accomplishments, I consider her as one of the top researchers in her peer group."

Reviewer (C): “Dr. Zhang’s work on efficient estimation in clinical trials was innovative and theoretically important. I am confident that [her] record of research and service would be sufficient for promotion at [my institution].”

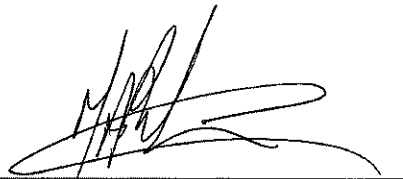
Reviewer (D): “Dr. Zhang is highly productive, her publications are rigorous and her publications appear in the leading Biostatistics journals. [She] has been able to develop valuable and productive collaborations with scientists. Her CV is a very nice mix of methodological and collaborative publications.”

Reviewer (E): “Her 2008 paper...was the recipient of the Snedocor Award that is given in recognition of an excellent paper in Biometry...a prestigious award and a major recognition! I am quite confident her qualifications would be more than sufficient for promotion here.”

Reviewer (F): “...has made a number of outstanding contributions to causal inference, and is a leader in semiparametric approaches to causal inference. She is among the top biostatisticians in her peer group with an outstanding record of scientifically motivated methodological research and a strong record of collaboration. [She] has my strongest recommendation for promotion to Associate Professor with tenure.”

#### Summary of Recommendation

Professor Zhang is an excellent biostatistician who has made important contributions, using semi-parametric regression to solve important, hard problems in clinical trial analysis and also in the analysis of survival data. She is an excellent teacher and active in service to her profession. It is with the support of the School of Public Health Executive Committee that I recommend Min Zhang for promotion to associate professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health.



Martin A. Philbert  
Dean, School of Public Health

May 2015