

PROMOTION RECOMMENDATION
The University of Michigan
School of Public Health
Department of Biostatistics

Bin Nan, associate professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health, is recommended for promotion to professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health.

Academic Degrees:

Ph.D. (Biostatistics)	2001	University of Washington
M.S. (Statistics)	1999	University of Washington
M.S. (Statistics)	1997	Virginia Commonwealth University
M.S. (Aerospace Engineering)	1987	Beijing University of Aeronautics and Astronautics
B.S. (Aerospace Engineering)	1984	Beijing University of Aeronautics and Astronautics

Professional Record:

2009 - present	Associate Editor, Statistics in Biosciences
2007 - present	Associate Professor, Department of Biostatistics, University of Michigan
2007 - present	Data Core Director, Michigan Alzheimer's Disease Research Center, University of Michigan
2008	Visiting Fellow, Isaac Newton Institute for Mathematical Sciences, University of Cambridge
2001-2007	Assistant Professor, Department of Biostatistics, University of Michigan
1998 - 2001	Research Assistant, Fred Hutchinson Cancer Research Center
1995 - 1997	Teaching Assistant, Department of Mathematics, Virginia Commonwealth University
1993 - 1995	Associate Professor, Department of Industrial Engineering, Zhengzhou Institute of Aeronautical Industry Management
1987-1993	Assistant Professor, Department of Operational Management and Department of Industrial Engineering, Zhengzhou Institute of Aeronautical Industry Management

Summary of Evaluation:

Teaching: Professor Nan is an excellent classroom teacher. He has always received outstanding student reviews in the more advanced 800 level courses and, in those courses, he has been able to attract students to work with him. He has also taught quite demanding introductory courses in probability and linear models to our first year masters students and has done this very well. He is a teacher who asks a lot of his students and he is able to get the best out of them. Professor Nan has broad interests in statistics and biostatistics and is a very valuable member of the Department, who plays a key role in meeting our teaching responsibilities in the more theoretical aspects of biostatistics.

Research: Professor Nan has made important research contributions in the following general areas: case-cohort and two-phase sampling designs, survival analysis, missing data, and the analysis of high dimensional data. His work has strong and principled theoretical foundations but also has practical importance. It is developed and presented at a theoretical level such that his contributions and results are also impacting the mathematics of statistical theory.

Professor Nan has worked on methods for analyzing missing data problems in the Cox model with particular application to the important case-cohort design that is gaining every wider use in epidemiological applications. He was able to develop a new one-step estimate of the relative risk parameter in the Cox model applied to case-cohort data and to establish that this estimator has the property of semi-parametric efficiency. More recently, he has considered the censored linear regression model, again in the context of missing data and specifically in the context of case-cohort studies. This work includes, as a special case, the important accelerated failure time (AFT) model, an attractive alternative to the Cox model that has received a lot of recent attention in the survival analysis literature. His work also entails some important work on numerical methods for fitting the AFT model using a variation on Newton's method. Another area of contribution is in methodological development on the analysis of marker processes. This work was motivated by a study on the onset of menopause and on the potential use of markers related to the spacing of events in the menstrual cycle. He developed a variable regression coefficient and spline methods and also a very novel approach to time dependent markers by utilizing a model for the cross ratio function that has proved useful in bivariate survival methods.

Professor Nan has also been very active and successful in collaborative work. He held a part time position in the Radiology Department for three years and, along with a GSRA, consulted and collaborated with researchers there on various projects. He has also had a very productive collaboration with Michael Cabana, and has been a co-investigator on two funded studies in asthma, one of which continues after Cabana's move to UCSF. He also collaborates with researchers in the School of Public Health.

Recent and Significant Publications:

- Cain K, Harlow SD, Little R, Nan B, Yosef M, Taffe J, Elliott M. Bias due to left truncation and left censoring in longitudinal studies of developmental and disease processes. *American Journal of Epidemiology* (accepted).
- Hu T, Nan B, Lin X, Robins J. Time dependent cross-ratio estimation for bivariate failure times. *Biometrika* (accepted).
- Lu X, Nan B, Song P, Sowers M. (2010) Longitudinal data analysis with event time as a covariate. *Statistics in Biosciences*, 2(1):65-80.
- Gilman S, Koeppe RA, Nan B, Wang C-N, Wang X, Junck L, Chervin RD, Consens F, Bhaumik A. (2010) Cerebral cortical and subcortical cholinergic deficits in Parkinsonian syndromes. *Neurology*, 74(18):1416-1423.
- Wang S, Nan B, Zhou N, Zhu J. (2009) Hierarchically penalized Cox regression with grouped variables. *Biometrika*, 96:307-322.
- Nan B, Kalbfleisch JD, Yu M. (2009) Asymptotic theory for the semiparametric accelerated failure time model with missing data. *Annals of Statistics*, 37:2351-2376.
- Nan B, Lin X. (2008) Analysis of case-control age-at-onset data using a modified case-cohort method. *Biometrical Journal*, 50(2):311-320. PMID: 18318038
- Wang S, Nan B, Zhu J, Beer DG. (2008) Doubly penalized buckley-james method for survival data with high-dimensional covariates. *Biometrics*, 64(1):132-140. PMID: 17680828
- Little RJ, Yosef M, Cain KC, Nan B, Harlow SD. (2008) A hot-deck multiple imputation procedure for gaps in longitudinal data on recurrent events. *Statistics in Medicine*, 27(1): 103-120. PMID: 17592832
- Nan B, Lin X. (2008) Analysis of case-control age-at-onset data using a modified case-cohort method. *Biometrical Journal*, 50(2):311-320. PMID: 18318038
- Yarram SG, Nghiem HV, Higgins E, Fox G, Nan B, Francis IR. (2007) Evaluation of imaging-guided core biopsy of pelvic masses. *American Journal of Roentgenology*, 188:1208-1211. PMID: 17449760
- Nan B, Yu M, Kalbfleisch JD. (2006) Censored linear regression for case-cohort studies. *Biometrika*, 93:747-762.

Quint LE, Kretschmer M, Chang A, Nan B. (2006) CT-guided thoracic core biopsies: Value of a negative result. *Cancer Imaging*, 6:173-167. PMID: PMC1693782

Service: Professor Nan has served as an active member on many committees over his time here. He has served for two years on the Department's candidacy committee which develops the qualifying examination each year for students entering the PhD program. He is currently chair of the candidacy committee and has also been a key member of search committees in biostatistics. Last year he chaired a biostatistics faculty search committee that led to two hires. He has been very energetic in this role, devoting substantial time to interacting with applicants and encouraging their interest. He has also served on a number of ad hoc committees and is always willing to contribute where needed. He has also served for two years on the department's admissions committee as well as on the curriculum committee. He also serves as a member of the Diversity Task Force in the School of Public Health. University-wide, Professor Nan serves on the Preeclampsia Study Data and Safety Monitoring Board. He is also a member of Michigan CTSA at MICH. He has served on a faculty search committee in the Department of Radiology where he has had a partial appointment and has served as a resource person for faculty research there. Professor Nan has been very active as a reviewer for many journals in biostatistics and statistics. He is a member of the American Statistical Association, the Institute of Mathematical Statistics, and the International Biometrics Society.

External Reviewers:

Reviewer (A): "Dr. Nan attacks important and challenging problems in public health and has the mathematical skills to solve these problems in an elegant fashion.... With no doubt he would be promoted to Professor with tenure at my institution...."

Reviewer (B): "...the bulk of Nan's statistics articles have appeared in top rank journals.... He would certainly qualify for promotion to professor in my own department."

Reviewer (C): "He must be one of the very few statisticians to find themselves able to correct a proof of Jamie Robbins.... He has a talent for making links between different approaches and identifying gaps in the state of knowledge... The idea... is intriguing and useful and this is the first paper I am aware of to do this... a wonderful example of Bin's desire to tackle important scientific problems using innovative statistical methods...."

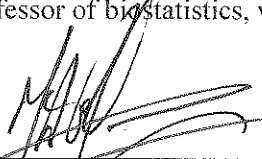
Reviewer (D): "Dr. Nan is a highly productive researcher... his work covers several important areas of statistics and biostatistics.... Besides... strong methodological and theoretical research, Dr. Nan has... collaborated with his Michigan colleagues extensively and effectively...."

Reviewer (E): "A characteristic of his work is the rigor and care he takes in the technical details... his methodological research provides cutting-edge tools to guide his collaborative research.... This is outstanding and represents the best biostatistical practice.... I consider him one of the best in his peer group."

Reviewer (F): "He became quite famous with his important work... due, in part, to his ability to obtain clarity where other prominent statisticians had struggled.... I can't think of any department of biostatistics or statistics... who would not be thrilled to have him join their department. Nor can I think of any university that would not appoint him as a tenured professor...."

Reviewer (G): "His research activities range from substantive collaboration... to methodologic and theoretical work... his work... is deep, elegant, and of practical importance.... Dr. Bin Nan has earned national and international recognition... he would be promoted to professor with tenure in my institution."

Summary of Recommendation: Professor Nan is a highly productive researcher who has established both a national and an international reputation. Given his outstanding record in research and service, as well as excellence in teaching, I am pleased to recommend that Professor Bin Nan be promoted to the rank of professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health.



Martin A. Philbert
Dean, School of Public Health

May 2011