

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

Michael R. Elliott, associate professor of biostatistics, with tenure, School of Public Health, is recommended for promotion to professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health [also being recommended for promotion to research professor, Survey Research Center, Institute for Social Research].

Academic Degrees:

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| Ph.D. | 1999 | University of Michigan |
| M.S.  | 1997 | University of Michigan |
| B.A.  | 1985 | University of Chicago  |

Professional Record

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| 2008-Present | Associate Professor, Department of Biostatistics, University of Michigan   |
| 2008-Present | Research Associate Professor, Survey Methodology Program, Survey Research Center, Institute for Social Research  |
| 2005-2008    | Assistant Professor, Department of Biostatistics, University of Michigan   |
| 2005-2008    | Research Assistant Professor, Survey Methodology Program, Survey Research Center, Institute for Social Research, Ann Arbor, MI   |
| 2005-Present | Adjunct Scholar, Biostatistics, Center for Clinical Epidemiology and Biostatistics, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, Philadelphia, PA                          |
| 2000-2005    | Assistant Professor of Biostatistics, Clinical-Educator, Center for Clinical Epidemiology and Biostatistics, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, Philadelphia, PA |
| 2000         | Visiting Professor of Biostatistics, Department of Biostatistics, University of Michigan School of Public Health, Ann Arbor, MI  |
| 2000         | Visiting Research Scientist, University of Michigan Transportation Research Institute, Ann Arbor, MI   |
| 1995-1999    | Research Assistant, Department of Biostatistics, University of Michigan, University of Michigan Transportation Research Institute, Ann Arbor, MI   |

Summary of Evaluation:

Teaching: Professor Elliott teaches courses for the Department of Biostatistics as well as for the Michigan Program in Survey Methodology, a Rackham M.S. and Ph.D. program in survey methodology housed at the Institute for Social Research. He is an articulate presenter and conscientious teacher who obtained generally solid ratings. Professor Elliot's strength as a classroom teacher lies clearly in advanced courses and mentoring of students. He consistently scores very high in 800 level courses; even among the 600 level courses, he receives high scores for advance level 600 level courses. This is also true in his ratings of courses taught at ISR. For advanced survey methodology courses, he received scores between 4.6 and 5 for both Q1 and Q2 and between 3.5 to 4 for basic level courses. Having a person of this caliber to teach advanced level courses very well is a big strength for the department.

Professor Elliot currently supervises a total of eight Ph.D. students with four from the department and four in the Survey Methodology Program. A total of five students have completed their dissertations

under his direction. He continues to attract many students and, given his broad research interests, his students are becoming well known in several different areas. One of his students, Xin Gao, won the 2010 APHA Statistics Section Student Research Competition. He is also serving on numerous Ph.D. thesis committees with a very active role.

Research: Professor Elliott's research record is outstanding. He has 93 peer reviewed publications, with 31 first authored papers and nine publications with his doctoral students as the first author. To encourage the mentoring process, we put emphasis on co-authored paper with the doctoral student as the first author equal to that of a first authored publication. Since 2009, he has published 20 articles with 12 as first author or his doctoral student as first author. His first author papers include many in top statistics journals like *JASA*, *Biometrics*, *Survey Methodology*, and the *Journal of the Royal Statistical Society*. This record indicates a superb performance in terms of methodological research and mentoring of doctoral students.

Professor Elliott has procured major funding as a collaborator on substantive projects in many areas, and is much sought after as a collaborator. He has been very successful in obtaining R03 and R01 grants from NIH. One of his major contributions is the massive National Children's Study, where he plays a leadership role in statistics for a consortium of Michigan universities. Professor Elliott is a versatile and outstanding collaborator. He has lead-author publications in his areas of collaboration, including a number of papers in transportation research stemming from his collaborative work with Jean Shope at the UM Transportation Institute and researchers the University of Pennsylvania. His visibility in this area is evidenced by the fact that he was appointed to the editorial board of the *Journal of Safety Research*.

His major contributions have been in the area of model-based inference from sample surveys, causal inference and missing data. More recently, he has been heavily involved developing methods for combining data from multiple surveys and missing data problems in complex surveys. Another significant area of his research is in the causal inference area of biostatistics where he is now an established leader. Two other areas of methodological research are: (1) privacy, confidentiality and limiting of disclosure of data (accidental or otherwise) on participants in surveys and other studies; and (2) simultaneous modeling of short term and long term variability in the longitudinal data.

#### Recent and Significant Publications:

- Elliott, M.R. (2011). "A Simple Method to Generate Equal-Sized Homogenous Strata or Clusters for Population-Based Sampling," *Annals of Epidemiology*, 21(4): 290-6.
- Li Y., Taylor, J.M.G., Elliott, M.R., Sargent, D.J. (2011). "Causal Assessment of Surrogacy in a Meta Analysis of Colorectal Cancer Trials," *Biostatistics*. 12(3): 478-492.
- Huang, X., Harlow, S.D., Elliott, M.R. (2011). "Patterns of Menstrual Bleeding and their Relation to the Onset of Menopause, Markers of Stages, and Health Outcomes," *American Journal of Epidemiology*, 175: 74-83.
- Zonfrillo, M.R., Elliott, M.R., Flannagan, C.A., Durbin, D.R. (2011). "The Association between Weight and Risk of Crash-related Injury for Children in Child Restraints," *Pediatrics*, 128(6): 1148-52.
- Elliott, M.R., Raghunathan, T.E., Li, Y. (2010). "Bayesian Inference for Causal Mediation Effects Using Principal Stratification with Dichotomous Mediators and Outcomes," *Biostatistics*, 11: 353-372.
- Elliott, M.R. (2009). "Model Averaging Methods for Weight Trimming in Generalized Linear Regression Models," *Journal of Official Statistics*, 25: 1-20.

Service: Professor Elliott's contributions to both SPH and ISR have far exceeded his appointment fraction. He chairs the student affairs committee and has served on the candidacy, curriculum, and practice committees at SPH. He continues to play a leadership role in two department initiatives – assisting in the formation of Statcom, a student organization that offers pro-bono statistical consulting to the community, and acting as faculty advisor for the Michigan Student Symposium for Interdisciplinary Statistical Sciences, a student research conference organized jointly by Biostatistics, Statistics and the Survey Methodology Program. At the ISR level, he is member of the senior staff advisory committee for the Survey Research Center, program coordinator of the Survey Methodology Program, and Summer Institute Advisory Committee.

Professor Elliott has been very active in organizing conferences. For example, in 2010 he was a program chair for the survey research section of the Joint Statistical Meetings. He also organized Atlantic Causal Inference as a co-chair at the University of Michigan. Nationally, he has served on numerous NIH study sections as temporary member. He is now a permanent member of the NIH Community Influences on Health Behavior. His national and international reputation brings invitations from all around the globe and has manifested in receiving the Gertrude Cox Award in 2010 and being elected as a Fellow of the American Statistical Association in 2011.

External Reviewers:

Reviewer A: "Professor Elliott is an absolutely first-rate scholar who reinforces the outstanding reputation of your respective programs...I regard [him] as being one of only a few people as an authority in the field on model-based strategies for analyzing data with probability-sampling weights. It is clear from his record that he is a 'good citizen' in supporting many important activities at the University of Michigan. I have no doubt he would be promoted to professor [at my institution]."

Reviewer B: "Michael's publication record is very strong. He is an international expert on model-based approaches to weight-trimming, combining data from multiple surveys and methodology for causal inference. He also has a very strong record of collaborative work as indicated both by grants and publications."


Reviewer C: "He has certainly been consistently very highly productive...excellent applied work and has an excellent record of grant funding...He represents an ideal biostatistician in many ways having a great mix of applied-driven methodology work with novel and out of the box thinking..."

Reviewer D: "Elliott is an extremely productive statistician...outstanding statistician who is making major contributions to Bayesian survey sampling...he does work that has a significant societal impact through good statistical analysis. I strongly recommend promotion."

Reviewer E: "Outstanding publication record...fine scholar and a leader in the field of statistics...[His] work is some of the best work being done on this important topic... He is one of the Nation's best survey statisticians."

Reviewer F: "I have seen him 'in action' at several Census advisory committee meetings, where he clearly was a major force. Mike is doing everything a full professor would be expected to do, including teaching and mentoring the next general of statistical scholars."

Summary of Recommendation: Professor Elliott is a star methods researcher, superb collaborator and mentor, a competent teacher, and an outstanding departmental citizen. He is renowned both nationally and internationally for his research. I am pleased to recommend Professor Michael R. Elliott for promotion to professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health.



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Martin A. Philbert  
Dean, School of Public Health

May 2012