Approved by the Regents
May 15, 2008

PROMOTION RECOMMENDATION

The University of Michigan
School of Public Health
Department of Biostatistics

Thomas M. Braun, assistant professor of biostatistics, Department of Biostatistics, School of Public Health, is recommended for promotion to associate professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health.

Academic Degrees:

Ph.D.	1999	University of Washington, Seattle, Washington
M.S.	1996	University of Washington, Seattle, Washington
B.B.A	1990	University of Wisconsin, Madison, Wisconsin

Professional Record:

2005 - Present	Assistant Professor, University of Michigan, Ann Arbor, Michigan
1999 - 2005	Assistant Research Professor, University of Michigan, Ann Arbor, Michigan
1990 - 1994	Senior Actuarial Assistant, Metropolitan Life Insurance Company, Mt. Prospect, Illinois

Summary of Evaluation:

Teaching: Professor Braun is an outstanding, innovative and creative teacher, with a very strong average of 4.5 in the Q2 ratings for the quality of the instructor. He has taught every year since he joined the Department of Biostatistics, including the time when he was an assistant research professor, and his excellence in teaching was one of the factors that led to him transferring to the tenure track. He has taught a variety of courses well, ranging from service courses (BIOS 503, BIOS 523), courses in the OJOC MS program on Clinical Research Design and Statistical Analysis (BIOS 560), and courses in the Biostatistics residential MS program.

Professor Braun's opportunities to direct Ph.D. dissertations were relatively limited while in the research track, but recently he has served as dissertation advisor for a candidate who is receiving her Ph.D. this semester. He is well positioned to direct biostatistics dissertations, particularly in the area of clinical trials methodology.

Research: Professor Braun's research combines excellent and diverse methodological work on the analysis of clinical trials, particularly in the areas of the analysis of group randomized trials and early phase clinical trial design, and superb collaborative research, notably with the Bone Marrow Transplant group at the Cancer Center, and more recently with the School of Dentistry. This combination of methodology and collaboration is particularly important in biostatistics, since both aspects are important parts of the mission. It is also reflected in his impressive list of 36 peer-reviewed publications, which includes 13 articles on statistical methodology and 23 on collaborative research, many incorporating the advances in his methodological work.

Professor Braun's methodological work focuses on important real-world problems in clinical trials design and analysis, and has high visibility. His work on permutation tests for group randomized trials resulted in a paper in the *Journal of the American Statistical Association*, and three additional papers in other statistics journals. His more recent work has concerned developing the continual reassessment method (CRM) for allocating doses in Phase I clinical trials, motivated by his work with the Bone Marrow Transplant group. This method uses the Bayesian paradigm to adjust the allocation of doses based on

toxicity information from prior allocations. He also created a downloadable Windows-based program that implements this method for general use.

Professor Braun's methodological innovations are intimately tied to his collaborative work at the Cancer Center, and his excellence in this area is reflected in the fact that he has maintained a consistently very high level of external research funding (80% or more), and in his extensive array of impressive methodological publications. He recently has assumed a leadership role in developing statistical collaborations in the Michigan Center for Oral Health Research, in the School of Dentistry. In connection with this activity, in Spring 2006 he was awarded an R03 grant jointly with Dr. Barbara Smith in Dentistry to develop methods for the analysis of longitudinal, tooth-level data collected on several thousand nursing home residents.

Recent and Significant Publications:

Braun, T., Feng, Z. (2001) Optimal Permutation Tests for the Analysis of Group Randomized Trials. *Journal of the American Statistical Association*, 96: 1424-1432.

Levine, J., **Braun, T.**, Penza, S., et al. (2002) A Prospective Trial of Chemotherapy and Donor Leukocyte Infusions for Relapse of Advanced Myeloid Malignancies Following Allogeneic Stem Cell Transplantation. *Journal of Clinical Oncology*, 20: 405-412.

Braun, T.M. The Bivariate CRM: Extending the CRM to Phase I Trials of Two Competing Outcomes. (2002) *Controlled Clinical Trials*, 23: 240-255.

Braun, T.M., Levine, J.E., Ferrara, J.L.M. Determining a Maximum Tolerated Cumulative Dose: Dose Reassignment Within the TITE-CRM. (2003) *Controlled Clinical Trials*, 24: 669-681.

Braun, T.M. A Mixed Model Formulation for Designing Cluster Randomized Trials with Binary Outcomes. (2003) *Statistical Modelling*, 3: 233-249.

Braun, T.M., Feng, Z. Identifying Settings When Permutation Tests are Nominal with Paired, Binary-Outcome, Group Randomized Trials. (2003) *Journal of Nonparametric Statistics*, 15: 653-663.

Braun, T.M., Yuan, Z., Thall, P.F. Determining a Maximum Tolerated Schedule of a Cytotoxic Agent. (2005) *Biometrics*, 61: 335-343.

Braun, T.M. Generalizing the TITE-CRM to Adapt for Early- and Late-Onset Toxicities. (2006) *Statistics in Medicine*, 25: 2071-2083.

Braun, T.M., Yuan, Z. Comparing the Small Sample Performance of Several Variance Estimators under Competing Risks. (2006) *Statistics in Medicine*, 26: 1170-1180.

Braun, T.M. A Mixed Model-Based Variance Estimator for Marginal Model Analysis of Cluster Randomized Trials. (2007) *Biometrical Journal*, 49: 394-405.

Service: Professor Braun has been a conscientious and active member of a number of the departmental committees, including the Candidacy and Admissions Committees, which are perhaps the most important and have the highest workload. He played an important role in designing a questionnaire we give to biostatistics students to assess satisfaction and potential areas for improvement in our graduate program. His collegiality and common sense make him a very positive influence on departmental decision-making.

He served on the Protocol Review Committee in the Cancer Center from 1999 to 2005. This very important committee assessing the scientific quality of research studies proposed in the Cancer Center, and biostatistical input on this committee is both important and time-consuming. He has also served as a resolution officer in the Office of Student Conflict Resolution, and as a member of the Curriculum Committee of the Michigan Public Health Training Center.

Professor Braun has served as a reviewer for NIH Scientific Review Groups from 2002-2006, and has served extensively as a referee for many statistics and medical journals.

External Reviewers:

Reviewer (A): "Dr. Braun's research works on group (cluster) randomization and dose-finding have great potential for identifying best (optimal) clinical benefits of compounds under investigation. Dr. Braun is a very productive researcher … (his) performance has exceeded expectation for an associate professor at many universities. In summary, Dr. Braun has achieved the milestone as an associate professor."

Reviewer (B): "In summary, I recommend the awarding of tenure with the highest degree of enthusiasm."

Reviewer (C): "Tom has been extremely productive in the past several years … at our institution, there would be no question that his qualifications would lead to his appointment of associate professor. In fact, his record to date, in my estimation, would be quite impressive even for someone at the rank of Associate Professor. The fact that he has published in the area of group randomized trials and is now collaborating with the School of Dentistry… shows his versatility and breadth of knowledge; a trait that is highly sought in a biostatistician."

Reviewer (D): "Professor Braun has a superb record in publications, either in his independent work or in collaborative research. I was particularly impressed by his 'Teaching Philosophy' statement. I strongly recommend that Professor Braun be promoted … I also believe he would be promoted with no hesitation in my own institution."

Reviewer (E): "Dr. Braun's expertise is recognized externally, as he is frequently called upon to act as a reviewer for medical and statistical journals, and important, for multiple NIH study sections. I believe Dr. Braun meets the criteria for promotion to Associate Professor at the University of Michigan … If he were a candidate for tenure at [my institution], I am confident that he would be promoted."

Reviewer (F): "I can summarize Professor Braun's research record by saying it is productive, balanced, appreciated by his colleagues, marked by a pattern in which clinical and methodologic work mutually inform each other, and has risen to the level of 'national recognition'… I unreservedly recommend that he be promoted there to Associate Professor."

Summary of Recommendation:

Professor Braun is an exemplary faculty member, an excellent colleague, a wonderful teacher, an active and influential researcher in clinical trials methods, and a terrific collaborator. I enthusiastically recommend that Thomas M. Braun be promoted to associate professor of biostatistics, with tenure, Department of Biostatistics, School of Public Health.

Kenneth E. Warner
Dean, School of Public Health

May 2008