

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

Bendek B. Hansen, associate professor of statistics, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of statistics, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

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| Ph.D. | 2001 | University of California, Berkeley |
| M.A. | 2000 | University of California, Berkeley |
| A.B. | 1993 | Harvard College |

Professional Record:

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| 2010-Present | Associate Professor, Department of Statistics, University of Michigan, Ann Arbor |
| 2003-2010 | Assistant Professor, Department of Statistics, University of Michigan, Ann Arbor |
| 2001-2003 | NSF Post-doctoral Fellow |

Summary of Evaluation:

Teaching: In the last five years, Professor Hansen has primarily taught one course, Stats 485, a capstone course for the statistics major course which satisfies the upper-level writing requirement (ULWR), required of all majors except those writing an honors thesis. This is a challenging course for both the instructor and the students, as writing and analyzing writing about statistics does not appear much elsewhere in the curriculum. Professor Hansen takes a thoughtful and systematic approach to teaching this very important skill. He has adapted to the class nearly tripling in size in five years, and received student evaluations in the typical range, despite this being an especially challenging and required class. He has advised a total of seven Ph.D. students who have placed well and supervised many undergraduate research projects and honors theses. He also has an exemplary record of mentoring disadvantaged or underrepresented undergraduates, through his participation in multiple LSA programs for such students.

Research: Professor Hansen's research is in causal inference from observational studies, the challenging question of inferring causal relationships in situations where randomized experiments are not possible and/or ethical. Professor Hansen is a pioneer and a leading authority on matching, the method of arranging subjects into groups as similar as possible in order to mimic experimental conditions. Beyond his methodological work, Professor Hansen has been deeply engaged in applying these methods in practice, especially to educational policy, working closely with education researchers and the Michigan and Texas Departments of Education, which has majorly amplified the practical impact of his work. He disseminates his research not just through publications in top journals, which are well cited, but also through maintaining software packages any practitioner can use, which have been downloaded over 850,000 times; he is deeply committed to helping practitioners.

Recent and Significant Publications:

Lycurgus, T., Hansen, B. B., and White, M. C. (2022). Conjuring power from a theory of change: The PWRD method for trials with anticipated variation in effects. *Journal of Research on Educational Effectiveness*, 16(4), 707-733.
<https://doi.org/10.1080/19345747.2022.2142178>.

Sales, A. C. and Hansen, B. B. (2020). Limitless regression discontinuity. *Journal of Educational and Behavioral Statistics*, 45(2), 143–174.
<https://doi.org/10.3102/1076998619884904>.

Sales, A., Hansen, B. B., and Rowan, B. (2018). Rebar: reinforcing a matching estimator with predictions from high-dimensional covariates. *Journal of Educational and Behavioral Statistics*, 43(1), 3–31. <https://doi.org/10.3102/1076998617731518>.

Hansen, B. B. (2008). The Prognostic Analogue of the Propensity Score. *Biometrika*, 95(2), 481–88. <https://doi.org/10.1093/biomet/asn004>.

Hansen, B. B. (2023). Matching calipers and the precision of index estimation, arXiv:2301.04109.

Service: Professor Hansen’s record of service is outstanding. His commitment to educational applications, which includes extensive collaborations with state Departments of Education and advising multiple national committees, exemplifies academic service to society, with his research making a real difference in policies that impact millions of children. His service to the profession includes extensive editorial board service, conference organizing, and teaching short courses. Professor Hansen’s service to the department and the university, as well as his commitment to DEI, goes above and beyond. He has served on most department committees, directed the undergraduate programs, and pioneered the use of rubrics as a tool for rigorous holistic evaluations in Ph.D. admissions. He has served as the inaugural chair and then member of the department’s DEI committee since its inception, and the first and so far only director of the Bridge to Ph.D. program, which he was instrumental in creating and leading to success. He has worked with M-Sci and CSP, both DEI-focused university-level initiatives, and served on the Rackham Merit Fellowship committee. Finally, the heavy invisible service Professor Hansen has been doing as (currently) the only full-time underrepresented minority tenure track/tenured faculty member in the department has been invaluable to the statistics community.

External Reviewers:

Reviewer (A): “I wholeheartedly endorse the advancement of Ben Hansen, Ph.D. to be a Professor with tenure in the Department of Statistics at the University of Michigan. Professor Hansen has established himself as a leading expert in causal inference methodology, his work has been recognized as being innovative and influential, and he can be expected to enhance the reputation of your department into the distant future.”

Reviewer (B): “In light of his important contributions to statistical methodology for the analysis of observational data, his promising research in educational statistics, his editorial work and his outstanding record of service to the Department and University, I highly recommend the promotion of Prof. Ben Hansen to Full Professor.”

Reviewer (C): “Professor Hansen has amassed a substantial, deep, and important record of scholarship that is impressive both for its breadth and its technical depth. He is a rare example of

a statistician that produces both highly technical theoretical and applied social science contributions that are genuinely important to society.”

Reviewer (D): “The quality of Dr. Hansen’s work is very high. More importantly, Dr. Hansen’s work is novel. [His papers] attracted attention because they went against the common practice and brought in new ways of approaching problems. Dr. Hansen also brings a level of mathematical rigor to papers on the practice of causal modeling that is not common.”

Reviewer (E): “My sense is that [Professor Hansen] quite has [sic] successfully exploited puzzles that arise from practice to pose and answer new and important questions...I believe this is a very strong case for promotion to full professor based on the originality, resourcefulness, rigor, and potential utility of the work I have read.”

Reviewer (F): “Despite [Professor Hansen’s] obvious skill in more theoretical work, it appears that he wanted to engage with real applications. He has done so, creating new methodology for the problems he takes up in educational settings...If we believe that interdisciplinary work is important and should be represented in departments of statistics, Hansen’s work should be highly valued.”

Summary of Recommendation:

Professor Hansen is a leading authority in causal inference and analysis of observational data, and his pioneering contributions have made a substantial impact in practice, especially in educational assessment and policy research. He is a thoughtful teacher who takes on challenging courses, and a great mentor to Ph.D. students. His service record and especially contributions to DEI are exceptionally strong. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Bendek B. Hansen be promoted to the rank of professor of statistics, with tenure, College of Literature, Science, and the Arts.



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