PROMOTION RECOMMENDATION
The University of Michigan
School of Public Health

Kelley M. Kidwell, associate professor of biostatistics, with tenure, School of Public Health is recommended for promotion to professor of biostatistics, with tenure, School of Public Health.

Academic Degrees:
Ph.D.	2012	University of Pittsburgh, Pittsburgh, PA
B.S.	2007	Bucknell University, Lewisburg, PA

Professional Record:
2022 - Present	Director of Digital Data Coordinating Center, Department of Anesthesiology, Medical School, University of Michigan, Ann Arbor, MI
2021 - Present	Associate Chair for Academic Affairs, Department of Biostatistics, School of Public Health, University of Michigan, Ann Arbor, MI
2019 - Present	Associate Professor, Department of Biostatistics, School of Public Health, University of Michigan, Ann Arbor, MI
2017 - 2018	Research Associate Professor, Department of Biostatistics, School of Public Health, University of Michigan, Ann Arbor, MI
2014 - Present	Statistician Lead, Research Development Core, Clinical and Translational Science Award Site, Michigan Institute for Clinical and Health Research, University of Michigan, Ann Arbor, MI
2014 - Present	Member, Biosocial Methods Collaborative, Institute of Social Research, University of Michigan, Ann Arbor, MI
2012 - Present	Member, Comprehensive Cancer Center, University of Michigan, Ann Arbor, MI
2012 - 2017	Research Assistant Professor, Department of Biostatistics, School of Public Health, University of Michigan, Ann Arbor, MI

Summary of Evaluation:

Teaching: Professor Kidwell is an excellent teacher with strong course evaluations for the five courses she has taught at the undergraduate and graduate levels. She co-developed a new course, BIOSTAT 611: Professional Development, that was first offered in fall of 2022. She has an average Q1 score of 4.23 and an average Q2 score of 4.56 across all her courses.

Professor Kidwell's teaching philosophy has a focus on enthusiasm and her commitment to mentoring is evident in that she has co-authored multiple publications with trainees. She has co-advised four now-graduated Ph.D. students and is co-advising four current Ph.D. students. Professor Kidwell has mentored numerous masters' students in research and teaching and mentored five junior faculty on their National Institutes of Health (NIH) career development awards while in rank. She has also regularly provided guest lectures across the university and taught short courses on sequential multiple assignment randomized trial (SMART) design.

Research: Professor Kidwell is a leading researcher in clinical trial design and statistical analysis, specializing in methods on the design and analysis of SMARTs, with a particular focus on small sample n SMARTs (snSMARTs). These methods enable development of effective dynamic treatment regimens, and she is a leader in application of these methods to rare diseases. She has had a significant impact on the SMART methodology as well as snSMARTs and has a strong vision for future work in this domain. Professor Kidwell has extensive collaborations with researchers at the University of Michigan.

Professor Kidwell has 133 peer-reviewed publications including many in highly ranked scientific journals, including *Biostatistics*, *Biometrics*, and *Statistics in Medicine*. Fifty-one of these have been published since 2019. She also is the author of three book chapters. She has an h-index of 33 and i10-index of 74 and her publications have been cited more than 4,300 times. Professor Kidwell is presently the principal investigator (PI) on two large grants, one from the Food and Drug Administration and the other from the Patient Centered Outcomes Research Institute. She is the PI in a small grant from the NIH and the Alliance National Clinical Trials Network Foundation. She also has effort on numerous grants on cancer, clinical trials, and treatment interventions led by others.

Recent and Significant Publications:
Chao, Y.C., Tran, Q., Tsodikov, A., Kidwell, K.M. (2022) Joint modeling and multiple comparisons with the best of data from a SMART with survival outcomes. *Biostatistics*. Jan 13;23(1):294-313. doi: 10.1093/biostatistics/kxaa025. PMID: 32659784; PMCID: PMC9770092.
Fang, F., Hochstedler, K.A., Tamura, R.N., Braun, T.M., Kidwell, K.M. (2020) Bayesian methods to compare dose levels with placebo in a small n, sequential, multiple assignment, randomized trial. *Stat Med.* Nov 20. doi: 10.1002/sim.8813. Epub ahead of print. PMID: 33216360.
Hartman, H., Tamura, R.N., Schipper, M.J., Kidwell, K.M. (2021) Design and analysis considerations for utilizing a mapping function in a small sample, sequential, multiple assignment, randomized trials with continuous outcomes. *Stat Med.* 2021 Jan 30;40(2):312-326. doi: 10.1002/sim.8776. Epub Oct 27. PMID: 33111381; PMCID: PMC9109654.
Wei, B., Braun, T.M., Tamura, R.N., Kidwell, K.M. (2018) A Bayesian analysis of small n sequential multiple assignment randomized trials (snSMARTs). *Stat Med.* Nov 20;37(26):3723-3732. doi: 10.1002/sim.7900. Epub Jul 16. PMID: 30010207.
Wei, B., Braun, T.M., Tamura, R.N., Kidwell, K. (2020) Sample size determination for Bayesian analysis of small n sequential, multiple assignment, randomized trials (snSMARTs) with three agents. *J Biopharm Stat.* Nov 1;30(6):1109-1120. doi: 10.1080/10543406.2020.1815032. Epub Sep 6. PMID: 32892710.

Service: Professor Kidwell serves as associate chair for academic affairs and chair of the admissions committee in the Department of Biostatistics where she worked to update the department's holistic admissions evaluation process. In addition to her departmental service, she has served on the Rackham Pre-doctoral Fellowship Committee. External to the university, Professor Kidwell's reputation in the field is exemplified by the fact that she serves on the Committee of Professional Societies in Statistics which awards outstanding contributions to the profession of statistics among junior statisticians. She is also a standing member of the Analytics and Statistics for Population Research Panel A, one of the primary NIH grant review panels for biostatistics. Professor Kidwell is involved in multiple international and national professional societies and is a member of the editorial board of two important journals: the *Journal of the National Cancer Institute* (JNCI) and *Journal of the American Medical Association (JAMA) Network Open*.

External Reviewers:
Reviewer A: "In summary, Dr Kidwell a [junior] scientist who has moved her academic career along very quickly and effectively. She has an active, well-funded program of research focused on expanding statistical methodology for SMART trials and in providing her expertise in this area to investigators seeking to apply these kinds of clinical trials in different areas of investigation. She is well engaged in important academic service activities covering grant reviews, journal editorial work and service on committees of national organizations. She is invited to give talks frequently at conferences and other academic institutions. I think she has the appropriate mix of credentials for this promotion."

Reviewer B: "…Dr. Kidwell has a valuable skill that should not be overlooked. She excels at explaining complicated quantitative material to scientists who, although not statisticians themselves, will be end

users of statistical approaches. She does this superbly in both her written work and presentations. Translating advanced statistical methods successfully to a nonstatistical scientific audience requires a deep understanding of the quantitative material, combined with an ability to translate this material into a narrative that is not only engaging and accessible, but technically accurate as well. Please do not underestimate the value of this ability, because it is a rare and valuable gift. People like Dr. Kidwell are the primary vehicle for broad dissemination and uptake of innovative statistical methods. … In summary, in my judgment Dr. Kidwell has an outstanding future ahead of her. There is currently growing interest in intervention optimization, and I expect her visibility and influence to grow too as she continues her methodological work in this area. I recommend with the highest degree of enthusiasm that she be promoted. I am confident that if she were at my previous institution...or my current institution...she would similarly be considered an excellent candidate and would be promoted without hesitation."

Reviewer C: "Dr. Kidwell's publication record reflects her interests in developing new methodology for practical challenges in which various versions of SMARTs are applicable and in collaborative team science involving application of SMARTs and other innovative clinical trial designs in a range of disease and disorder areas, the latter being the theme of the majority of her work. She has gained a widespread reputation as an advocate and thought leader in the deployment of SMARTs in practice, as evidenced by her many book chapters and invited presentations, with many of these introducing practitioners and policy makers to SMARTs and SMART methodology. … In summary, I find that Dr. Kidwell has an outstanding record of accomplishment in both methods development targeting ongoing practical challenges and collaborative research, and a strong record of service. There are many faculty members across the country engaged in such work; among these, Dr. Kidwell stands out for the high visibility and impact she and her work have attained. I can say with absolute confidence that she would be promoted to Professor with tenure easily in my home department and in almost any department of biostatistics. I enthusiastically support this promotion and tenure action."

Reviewer D: "Dr. Kidwell's statistical research concerns adaptive clinical trial designs, primarily the sequential multiple-assignment randomized trial (SMART). This design permits the evaluation of dynamic treatment regimens, or schemes for determining the optimal order in which to apply a series of treatments. For example, in smoking cessation there are several drugs that work to some extent, and one may wish to know the which to start with, what to do if it fails, and so on, in order to achieve the best overall quit rate. Dr. Kidwell's research, particularly in recent years, has dealt with the construction of such designs in situations where the disease is rare and efficiency is paramount. Her papers have appeared in the leading biostatistics journals, assuring that they will achieve wide recognition. … Compared to biostatisticians of comparable seniority in the tenure track at [my institution], Dr. Kidwell has an equivalent record of collaborative research, a superior record of grant funding, a more extensive and varied teaching record, and a higher profile in statistical methods research. She has earned not one but several high-quality grants as PI. She has moreover acquired more in the way of tokens of professional recognition, and she has earned some prominent awards. There is no question that Dr. Kidwell would earn promotion to Professor in the tenure track at [my institution]."

Reviewer E: "In summary, it is evident that Dr. Kidwell is an outstanding researcher in both collaborative and methodological aspects as well as a well-respected mentor and teacher. Given the number of publications, together with her continuing efforts for methodology development, contribution to education for future generation in the field, extreme visibility in the multidisciplinary areas, Dr. Kidwell would be an indispensable asset to your institution, and hence I strongly recommend that Dr. Kidwell be promoted to Professor with tenure in your institution."

Reviewer F: "Dr. Kidwell is an internationally recognized expert in the design, implementation, and analysis of SMARTs, which are an important tool for advancing personalized medicine through the development of optimal dynamic treatment regimes… Dr. Kidwell's research track-record is outstanding,

demonstrating deep contributions related to the design and analysis of SMARTs, and a breadth of collaborative research that allows her to expand the scope of her impact across the biomedical research landscape. Given her track-record of innovative statistical methods research, her broad impact as a team-scientist, and her exceptional work translating innovative statistical methods into practice, I would rate Dr. Kidwell among the very best researchers in the field and I expect that she will continue to be a leader in the design and implementation of innovative clinical trial designs for the rest of her career. … Given her record of research, teaching, and service, she would easily meet the requirements for promotion to Professor with tenure at my institution and I strongly support her promotion with no reservations."

Reviewer G: "To summarize, Kelley is a known renowned researcher and applied statistician in precision medicine. I am confident she would be promoted if she were up at [my institution] Biostatistics. I recommend her for promotion without reservation."

Reviewer H: "Dr. Kidwell has made outstanding, high impact contributions to the design and analysis of clinical trials. Specifically, she has developed improved clinical trial designs, has created opensource software tools and training materials to make these new designs available for widespread use, and has applied her new designs in real trials involving multiple disease areas.… Dr. Kidwell would certainly receive an equivalent promotion at my institution. She is highly qualified due to her outstanding scholarly impact, as evidenced by her prolific publishing of high-quality, peer-reviewed articles, her exceptional communication/translation of research, excellence in both teaching and in mentoring many students, and has gone above and beyond in her academic service."

Reviewer I: "Dr. Kidwell is an outstanding biostatistical scientist who has managed to contribute substantially to methodological, translational and collaborative research. I have no doubt that she would be promoted to full professor at the...or at...."

Summary of Recommendation: Professor Kidwell has an excellent record as a leading researcher in clinical trial design and statistical analysis. She has an excellent record in teaching and in service. It is with the support of the School of Public Health Executive Committee that I recommend Kelley M. Kidwell for promotion to professor of biostatistics, with tenure, School of Public Health.

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F. DuBois Bowman, Ph.D.
Dean, School of Public Health

May 2023