PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
SCHOOL OF INFORMATION

Mark W. Newman, assistant professor of information, School of Information, and assistant professor of electrical engineering and computer science, College of Engineering, is recommended for promotion to associate professor of information, with tenure, School of Information, and associate professor of electrical engineering and computer science, without tenure, College of Engineering.

Academic Degrees:

Ph.D.	2007	University of California, Berkeley, CA
M.S.	2000	University of California, Berkeley, CA
B.A.	1992	Macalester College, St. Paul, MN

Professional Record:

2008 – present	Assistant Professor of Electrical Engineering and Computer Science, College of Engineering, University of Michigan
2007 – present	Assistant Professor of Information, School of Information, University of Michigan
2000 – 2007	Member of Research Staff I-II in the Computer Science Laboratory Research in the Distributed Systems Area and Ubiquitous Computing, Area Palo Alto Research Center, Palo Alto, CA (formerly Xerox PARC)
1999 – 2000	User Experience Designer, Netraker Corporation, Sunnyvale, CA
1997 – 2000	Graduate Student Researcher and Instructor, EECS Department, University of California, Berkeley, CA
1998	Research Intern, DEC/Compaq Western Research Laboratory
1996 – 1997	Software Developer, Honeywell Technology Center, Minneapolis, MN

Summary of Evaluation:

Teaching: Professor Newman has made important contributions to the instructional mission at the University of Michigan School of Information (UMSI). As a doctoral mentor, Professor Newman has served on 13 thesis committees (eight outside of UMSI; 12 have graduated) and is currently the chair of one committee. In addition to his work with doctoral students, Professor Newman has supervised seven master's projects. Three of these students have gone on to top doctoral programs (one at UMSI) and a fourth is now a senior manager at Facebook.

Professor Newman has been very active and quite successful in classroom teaching, including a leadership role in updating and improving the human-computer interaction curriculum. First, he transformed a required course, SI 6/588 "Fundamentals of human behavior," from a chronically underperforming offering into a student favorite. Over a three-year period from 2009-11, Professor Newman raised the course ratings from 4.22 to 4.77 and his instructor ratings from 4.58 to 4.83 – while enrollment increased 65%. Second, he transformed another required course, SI 622 "Evaluation of systems and services," around student engagement with real-world clients. This course has become a model for the school's thinking about how to design and mount service-learning opportunities. Further, over a five-year period, Professor Newman maintained

the high quality of this course (course ratings in the range of 4.00 to 4.47; instructor ratings in the range of 4.23 to 4.88), despite a 71% enrollment increase. Third, to address a shortage of elective courses in the human-computer interaction curriculum, Professor Newman designed and introduced SI 612 "Pervasive interaction design" in 2011, which has become one of UMSI's highest rated courses. Finally, in 2011-12, Professor Newman led the re-design of the HCI specialization at UMSI, including a re-sequencing of required courses to increase the likelihood of students landing attractive internships after their first year. In recognition of Professor Newman's many significant contributions to the school's teaching mission and his exceptional classroom performance (e.g., in fourteen courses his median course rating has been 4.28 and his median instructor rating has been 4.61), he was given the UMSI Outstanding Teaching Award in 2011-2012.

Research: Professor Newman's research exemplifies the interdisciplinary scholarship that is central to UMSI's mission. His signature early contribution involved the development of tools and capabilities to support more seamless connections between users and their devices. In a world where information technologies are ubiquitous, it is difficult to anticipate all possible future combinations of systems and services. As a result, users typically bear the burden of trying to figure out how to configure things, often with great frustration. Professor Newman coined the term "recombinant computing" to describe his research on techniques to allow interactions among computational entities with no prior knowledge of one another. His discoveries have been fundamental to understanding how users can create and manage their own ad hoc configurations of hardware and software (e.g., as among computers, displays, and devices within a home network).

More recently, Professor Newman has done pioneering research that significantly reduces the burden of designing and testing successful ubiquitous computing (ubicomp) applications. Ubiquitous computing refers to the use of many computational devices and services in the course of everyday activity (e.g., smartphones), as opposed to conventional views of computing (e.g., desktop computers). A major barrier for developers of ubiquitous applications is that short of a full-scale launch and adoption of an application, it is difficult to introduce and anticipate the challenges of the actual run-time environment (e.g., in terms of scale or intensity of simultaneous use). Recognizing this problem, Professor Newman invented a "capture and replay" approach that incorporates simulations of the run-time context while applications are in development.

Professor Newman's newest research efforts have focused on what he has termed "collaborative system configuration." This work builds on the well-known finding that the experience of others can provide important guidance, such as in history-of-use navigation. Professor Newman's insight has been to use configuration artifacts, such as settings, configuration files, and logs to assemble representative configurations that novices might use as a starting place or that might be analyzed automatically to generate initial configuration information.

As a final observation about Professor Newman's research it is important to note that in addition to his significant specific research accomplishments, reviewers also commented on the strengths of his multidisciplinary approach. Overall, Professor Newman has published five journal articles and 31 peer-reviewed conference papers. Conference papers are archival in Professor Newman's research community. According to Google Scholar, Professor Newman's work has been cited

2,204 times with an h-index of 18 (meaning he has 18 papers with at least 18 citations). His most visible paper has been cited 300 times and he has eight additional publications that have each generated 100 or more citations. To conclude, the quality and quantity of Professor Newman's publications are at or above the standard among candidates for tenure at UMSI.

In terms of sponsored research, Professor Newman has received more than $1.8 million through seven awards from the National Science Foundation (two, including a 2012 CAREER award); Adobe Systems (1); Intel Corporation (1); Michigan Center for Advancing Safe Transportation for the Life Span (2); and the Michigan Institute for Clinical and Health Research (1). To summarize, Professor Newman has established a strong funding record that is above the norm among candidates for tenure at UMSI.

Recent and Significant Publications:

Huh, J., Newman, M.W., and Ackerman, M.S. (2011). Supporting collaborative help for individualized user. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*. New York: ACM Press.

Lin, J., Newman, M.W., Hong, J.I., and Landay, J. (2000). DENIM: Finding a tighter fit with web design practice. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2000)*. New York: ACM Press.

Newman, M.W., Ackerman M.S., Kim, J., Prakash, A., Shenan, H., Mandel, J., and Dong, T. (2010). Bringing the field into the lab: supporting capture and replay of contextual data for the design of context-aware applications. In *Proceedings of the 23nd Annual ACM Symposium on User Interface Software and Technology (UIST 2010)*. New York: ACM Press.

Newman, M.W., and Landay, J. (2000). Sitemaps, storyboards, and specifications: A sketch of Web site design practice. In *Proceedings of the ACM Conference on Designing Interactive Systems (DIS 2000)*. New York: ACM Press.

Newman, M.W., Sedivy, J.Z., Edwards, W.K., Smith, T.F., Marcelo, K., Neuwirth, C.M., Hong, J.I., and Izadi, S. (2002). Designing for serendipity: Supporting end-user configurations of ubiquitous computing environments. In *Proceedings of the ACM Conference on Designing Interactive Systems (DIS 2002)*. New York: ACM Press.

Yang, R., Park, S., Mishra, S.R., Hong, Z., Newsom, C., Joo, H., Hofer, E., and Newman, M.W. (2011). Supporting spatial awareness and independent wayfinding for pedestrians with visual impairments. In *Proceedings of the 13th international ACM SIGACCESS Conference on Computers and accessibility (ASSETS)*. New York: ACM Press.

Service: Professor Newman provides a high level of service to the school, the university, and his professional community. Within UMSI, Professor Newman served on the doctoral committee from 2007 to 2010, on the faculty search committee in 2010-11 and 2012-13 (for which he is the chair of a subcommittee), and the curriculum committee in 2011-12. He was elected to and served on the Deans' Advisory Committee in 2009-10 (the UMSI analogue to an Executive Committee). He has been the HCI specialization coordinator for the UMSI masters' program since 2010. At the university level, Professor Newman led the creation of the Michigan Interactive and Social Computing (MISC) organization (http://misc.si.umich.edu). MISC is oriented to researchers interested in human-computer interaction and social computing and hosts a weekly seminar as well as a Rackham-sponsored speaker series. MISC currently includes over

fifty faculty and students from seven units. In addition to his leadership of MISC, Professor Newman served as a Faculty Ally for Diversity from 2009 to 2012. In the broader professional community Professor Newman has served on the technical program committees for leading conferences (CSCW twice, CHI once, the WWW User Interfaces/Rich Interaction Area Conference once, GROUP once, and IUI twice). He co-chaired the CSCW demos track in 2008 and the CHI Works-in-Progress track in 2011. He was workshop co-chair for the annual Human-Computer Interaction Consortium workshop in 2011 and will be the HCIC general co-chair beginning in 2014. He has reviewed proposals for the National Science Foundation and has done ad hoc reviewing for journals and conferences including: *ACM Transactions on Computer-Human Interaction*; *IEEE Pervasive Computing: Mobile and Ubiquitous Systems*; *International Journal of Human-Computer Studies*; *IEEE Internet Computing*; *ACM Conference on Human Factors in Computing Systems (CHI)*; *ACM Conference on Computer-Supported Cooperative Work (CSCW)*; *International Conference on Ubiquitous Computing (UbiComp)*; and *International Conference on Pervasive Computing*. Taken as a whole, Professor Newman's level of service is well above the level acceptable for promotion to associate professor with tenure at UMSI.

External Reviewers:
Reviewer A: "…I support a decision to grant [Professor Newman] tenure and promotion. From reviewing his portfolio, I see a strong and coherent research career, an outstanding educational record and a significant service contribution."

Reviewer B: "After careful review of the provided tenure dossier, I am convinced promotion is merited because Prof. Newman has made significant research contributions that have meaningfully advanced the field of human-computer interaction (HCI), [have] demonstrated the ability to establish a strong and coherent research program, and have demonstrated the ability to acquire external support from the National Science foundation (NSF) and leading companies in industry."

Reviewer C: "…Dr. Newman is a very successful researcher who has demonstrated the ability to publish regularly at top conferences within his area of research (CHI, CSCW, Ubicomp). He has presented well-known contributions of his own…. As such, I can strongly support Dr. Newman's promotion with no reservations."

Reviewer D: "I am supportive of Mark receiving tenure at the School of Information at the University of Michigan."

Reviewer E: "If the above research record were presented to a promotions committee at our institute, I am almost certain that it would merit promotion to Associate Professor."

Reviewer F: "…Mark is a top-shelf researcher, an excellent teacher, a wise and collegial program builder, and a valuable community leader. I offer my strongest support for his promotion to tenure, and look forward to his continued excellence and contributions."

Reviewer G: "[Professor Newman] has shown the intellectual ability, creativity, and communications skills necessary to make large contributions to the field of human-computer
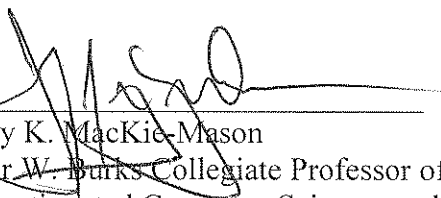
interaction. His work in his first five years at Michigan has been quite good, especially the work he has started to publish in the last three years. I believe we would easily grant Dr. Newman tenure in the iSchool here at [my institution]."
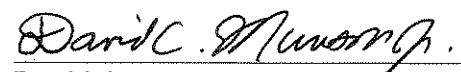
Reviewer H: "….I strongly support the promotion of Mark Newman to associate professor with tenure. He is a strong, creative researcher, with a substantial record of publications in highly-selective peer-reviewed venues, and excellent record of service and a vision that is informing the progress of the ubiquitous computing research field."

Reviewer I: "There is no question in my mind that [Professor Newman] would get tenure here at [my institution]."

Reviewer J: "…Dr. Newman has a solid research and service record. If he was being considered for an Associate Professor with tenure position in the School of Information at [my institution], I believe he would meet the requirements for promotion."

Summary of Recommendation: Professor Newman has been a strong classroom teacher and an important educational innovator and leader with notable impacts on UMSI's HCI program. His research record is impressive, as attested by his publications in the Human-Computer Interaction (HCI) area, and the assessment of ten external reviewers asked to comment on his research. His service has been above the level expected of junior faculty members. With the overwhelming support of the promotion and tenure committee of the School of Information and the College of Engineering, I enthusiastically recommend Mark W. Newman for promotion to associate professor of information, with tenure, School of Information and associate professor of electrical engineering and computer science, without tenure, College of Engineering.

Jeffrey K. MacKie-Mason
Arthur W. Burks Collegiate Professor of
Information and Computer Science, and Dean
School of Information

David C. Munson, Jr.
Robert J. Vlasic Dean of Engineering
College of Engineering

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