PROMOTION RECOMMENDATION
The University of Michigan – Flint
College of Arts and Sciences
Department of Computer Science, Engineering, and Physics

Charlotte Tang, assistant professor of computer science, Department of Computer Science, Engineering, and Physics, College of Arts and Sciences, is recommended for promotion to associate professor of computer science, with tenure, Department of Computer Science, Engineering, and Physics, College of Arts and Sciences.

Academic Degrees:

Ph.D.	2009	University of Calgary
M.S.	2004	University of Calgary
B.S.	2001	University of Calgary

Professional Record:

2012-Present	Assistant Professor of Computer Science, University of Michigan-Flint
2010-2012	Post-Doctoral Fellow, University of British Columbia
2009-2010	Post-Doctoral Fellow, University of Calgary
2009-2009	Instructor, University of Calgary

Summary of Evaluation:

Teaching – Professor Tang passionately believes that teaching is about motivating students to become independent and enthusiastic learners, fostering their curiosity to explore and experiment, stimulating their critical thinking, and for some, nurturing them to become competent and innovative researchers. Accordingly, Professor Tang's pedagogy is distinguished by several features: fostering a supportive learning environment, innovative learning activities, and a commitment to continual improvement. By viewing students as "colleagues in training," Professor Tang strives to create a supportive learning environment by being approachable and sensitive to her students' unique learning needs. Her pedagogy encourages students to take risks, innovate, and be open to critical feedback. Professor Tang's teaching effectiveness is also demonstrated by her belief in the importance of providing a diversity of hands-on learning activities that include demonstrations, breakout sessions, role-playing and ad hoc presentations – all of which promote the application of learning to solving practical problems. The third feature of Professor Tang's pedagogy is illustrated by her efforts to improve her CIS 555, "Health Informatics" course to better capture these students' interests and enhance the learning of our local students. Finally, her commitment to student learning is evidenced by her extensive record of advising and supervision of student projects –three Master's theses, three Honor's theses, and nine undergraduate independent projects. Since her arrival at the University of Michigan-Flint in 2012, Professor Tang has taught eight different courses ranging from the introductory CIS 151, "Spreadsheet Software" to advanced undergraduate courses such as CSC 310 "Human Computer Interaction" and graduate courses including CSC 522 "Advanced Human Computer Interaction" and CSC 555 "Health Informatics."

Research – Professor Tang is a computer scientist specializing in the areas of Human-Computer Interaction (HCI), Computer-Supported Cooperative Work (CSCW), Health Informatics, and Social Computing. Professor Tang employs ethnographic methodologies and works in interdisciplinary teams to analyze social and work practices, as well as the behaviors of individuals and groups to design technology that facilitates communication and collaboration in healthcare. More specifically, there are four major threads to her research agenda – asynchronous communication in healthcare, collaboration among distributed clinicians, healthcare challenges among international students, and enhancing student learning and group work. In the first thread, Professor Tang has analyzed the communication and information sharing practices for the paper-based medical record system in the Urban Health and Wellness Center to assess its ability to

implement an electronic medical record system. In the second area of application, Professor Tang is identifying the challenges of team-based collaboration across three medical clinics, four distributed and independent hospitals, and twenty dialysis centers with the goal of designing appropriate supportive information technologies. In light of the increasing number of international students at the University of Michigan-Flint (and nation-wide), Professor Tang has begun to investigate the barriers faced by international students and has explored the potential for how information technologies can be leveraged to support international students' health needs. Finally, Professor Tang has conducted research into how to enhance student learning through the use of social media and online collaborative tools for group work and student-faculty communication.

Recent and Significant Scholarly Activity:

Peer-Reviewed Journal Articles

Tang, C., Chen, Y., Cheng, K., Ngo, V. and Mattison, J.E. (2017). Awareness and Handoffs in Home Care: Coordination among Informal Caregivers. *Behaviour and Information Technology* (*Equal contributions). Accepted for publication doi: 10.1080/0144929X.2017.1405073.

Haraty, M., McGrenere, J. and Tang, C. (2016). How Personal Task Management Differs across Individuals and Over Time. *International Journal of Human-Computer Studies*, April 2016, 88:13-37. (RG Journal Impact: 2.13)

Tang, C., Chen, Y. and Lee, S. (2015). Non-Clinical Work Counts: facilitating patient outflow in an Emergency Department. Special Issue, Utilising Technology to Enhance Communication, Collaboration and Decision-Making, *Behaviour and Information Technology,* 34(6):585-597. (*Equal contributions) (Impact Factor: 1.211)

Jacova, C., McGrenere, J., Lee, H., Wang, W., Le Huray, S., Corenblith, E., Brehmer, M., Tang, C., Hayden, S., Beattie, B. and Hsiung, G. (2015). C-TOC (Cognitive Testing on Computer): Investigating the Usability and Validity of a Novel Self-administered Cognitive Assessment Tool in Aging and Early Dementia. *Alzheimer Disease and Associated Disorders*, 29(3):213- 221. (Impact Factor: 2.44)

Book Chapters

Tang, C., Xiao, Y., Chen, Y. and Gorman, P. (2015). Chapter 10: Design for Supporting Healthcare Teams. *Cognitive Informatics in Health and Biomedicine: Human Computer Interaction in Healthcare*: Vimla L. Patel, Thomas G. Kannampallil & David Kaufman (Editors), Springer, pp.215-239.

Peer-Reviewed Conference Proceeding Publications

Tang, C., Gui, X., Chen, Y. and MAGUERAMANE, M. New to a Country: Barriers for International Students to Utilize Health Services and Opportunities for Design. In submission to the *12th EAI International Conference on Pervasive Computing Technologies for Healthcare.*

Randell, R., Tang, C. and Chen, Y. (2018). The Impact of Computing Device Design on Patient- Centered Communication: An Experimental Study. (*Equal contributions) To appear in the Proceedings of the *51st Annual Hawaii International Conference on Systems Sciences 2018* – Accepted for publication.

Alhosban, A. and Tang, C. (2017). Big Data Collaborative Filtering-based Framework for Improving Education Policies. *Proceedings of the 8th International Conference on Information Technology 2017.*

Chen, Y., Tang, C., Duong, V., Ngo, V., Huang, Y. and Mattison, J.E. (2017). "I don't bother with the phone!" Feeling Closer to Physician using Secure Messaging. *Proceedings of the 50th Annual Hawaii International Conference on Systems Sciences*, pp.3813-3822. (*Equal contributions)

Tang, C., FREEDMAN, H. and SIERMINSKI, R. (2016). "Schedule change really disrupts a lot of things!": Never-Ending Physician Scheduling in a Multi-Function Multi-Setting Practice. *Proceedings of the IEEE Conference on Computer Based Medical Systems* 2016, pp.82-87. (doi: 10.1109/CBMS.2016.19).

Service – Professor Tang has compiled an impressive record of service which stems from her desire to "give back." At the department level, Professor Tang has served on seven search committees since 2012. She has also worked to revise the department's faculty handbook and served on the department's Scholarship Committee. At the college level, Professor Tang has served on the Spring Academic Standards Committee in 2013 and more recently, she was a member of a LEO Review Committee. Professor Tang is also a visible representative for her discipline at such college events as the Honors Recognition Ceremony, STEM Open Houses and university Commencements. At the university level, Professor Tang has been a mentor for the Invest in Your Success program, has served on the Scholarships, Awards, and Special Events Committee where she was a member, co-chair and chair. She is currently a member of the Women's Commission, Committee on the Economic Status of the Faculty, and the Academy Faculty Working Group on General Education Signature Assignments and e-Portfolios. Professor Tang has an impressive record of service to her profession where she has served as a grant reviewer for the Institute for Clinical and Translational Science (ICTS) at the University of California, Irvine. She has also been a member of the editorial board for two special issues – one for the *Journal of American Medical Informatics Association* entitled "Interactive Systems for Patient-Centered Care to Enhance Patient Engagement" and the second for *Journal of Behaviour and Information Technology*'s "Medical Team Meetings – Utilizing Technology to Enhance Communication."

External Reviewers:
Reviewer (A): "Dr. Tang's refereed publications show good focus and a cohesive research agenda during the 2012-2017 period in rank and are also well aligned to the scholarly arc of her overall career to date. The overall publication record shows a very promising and rising trajectory of generative ideas and productivity, and seems appropriate to her career stage, especially considering the high teaching load she has been carrying … I would consider her CSCW 2015 article, where Dr. Tang is the first author, and the 2015 journal article appeared on *Behavior & Information Technology* as exemplary evidence of substantial scholarship for these venues. These publications show an excellent mastery of the research methods, and a very good selection of the topics."

Reviewer (B): "The quality of Charlotte Tang's work is excellent. Her work has been accepted and presented at important venues in the field, such as the CSCW conference, HICSS, CBMS as well as respected journals. … In this work, it is also clear that she has developed a distinct scholarly profile that is well positioned in the CSCW/HCI/medical informatics field. Such a positioning is crucial for any scholar as it lays the ground for both individual development and possibilities for contributing to the research field per se. … I find Charlotte Tang's empirical papers from real work practices to be interesting, very informative and analytically strong. These papers serve as a solid basis for how one should understand clinical practice as well as how one should proceed for designing technology for the very same practices."

Reviewer (C): "Overall, I find Dr. Tang to have a strong track record of peer-reviewed publications, both in terms of quantity and quality. Including peer-reviewed journal and conference proceedings, she has 26 publications. Moreover, she led (as first author) or was an equal contributor on 17 of those publications, which indicates she is a clear leader in her research activities. … In terms of quality and impact, Dr. Tang has regularly published in well-recognized information systems and computer science conference proceedings, including those of the Hawaii International Conference on Systems Sciences (HICSS), ACM Conference on Computer Supported Cooperative Work (CSCW), and other ACM and IEEE conferences."

Reviewer (D): "The candidate's research journal and conference papers are of very high quality (3 journal papers and 1 journal paper in submission). The candidate also has 9 conference papers with very high quality. The quantity is pretty good for the candidate at the current level of professional development. The focus and scholarly impact of the candidate's works are also great. … I think her works are important and have great impact in the field."

Reviewer (E): "She has about 50 peer reviewed and non-peer reviewed publications. She is the first or last author on about 40 publications. This is a significant number to demonstrate productivity. … She has a number of publications that focus on designing patient-centered technologies. Read as a group these articles would provide a comprehensive overview of this critical patient-centered design concept. … Given the wide expanse of the requests for her involvement, I readily assume that she is highly recognized in her field. … Charlotte Tang's contributions for the human factors component of informatics, especially biomedical informatics are significant."

Reviewer (F): "Overall, she has published nineteen peer-reviewed conference papers, six journal papers, and two book chapters that are disseminating her research to a national and international audience. Dr. Tang has published her research in top-tier conference venues such as the *ACM Conference on Human Factors in Computing (CHI), ACM Conference Computer-Supported Cooperative Work and Social Media (CSCW), and European Conference on Computer-Supported Cooperative Work (ECSW)*. She has also shown a breadth of publication by publishing her work in *ACM (CHI, CSCW), IEEE (IEEE Conference on Computer Based Medical Systems, IEEE High Assurance Systems Engineering Symposium)*, and the medical field (*Journal of Hospital Medicine*). Dr. Tang has also published her work internationally (*ECSCW*)."

Summary of Recommendation:
Professor Tang has demonstrated the requisite excellence in teaching, scholarly achievement, and service to her community, university and department. I am pleased to recommend Charlotte Tang for promotion to associate professor of computer science, with tenure, Department of Computer Science, Engineering, and Physics, College of Arts and Sciences.

Recommended by:

Susan Gano-Phillips

Susan Gano-Phillips, Dean
College of Arts and Sciences

Recommendation endorsed by:

Douglas G. Knerr, Provost and
Vice Chancellor for Academic Affairs

Susan E. Borrego, Chancellor
University of Michigan – Flint

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