Approved by the Regents May 21, 2015

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Mechanical Engineering
Department of Biomedical Engineering

Jianping Fu, assistant professor of mechanical engineering, Department of Mechanical Engineering, College of Engineering, and assistant professor of biomedical engineering, Department of Biomedical Engineering, College of Engineering and Medical School, is recommended for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, College of Engineering, and associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, College of Engineering and Medical School.

Academic Degrees:

Ph.D.	2007	Massachusetts Institute of Technology (MIT), Biological Engineering, Cambridge, MA
M.S.	2002	University of California, Los Angeles (UCLA), Micro-Electro-Mechanical Systems (MEMS), Los Angeles, CA
B.E.	2000	University of Science and Technology of China (USTC), Thermal Science and Energy Engineering, Hefei, Anhui, China

Professional Record:

2010 – present	Assistant Professor, Department of Biomedical Engineering, University of Michigan
2009 – present	Assistant Professor, Department of Mechanical Engineering, University of Michigan
2007 – 2009	Post-doctoral Research Fellow, Department of Bioengineering, University of Pennsylvania, Philadelphia, PA

Summary of Evaluation:

Teaching: Professor Fu is an effective teacher and excellent advisor. Since joining Michigan, he has taught two core undergraduate classes. In addition, he has developed a new graduate class in "Molecular, Cellular, and Tissue Biomechanics," which is an important course that brings new ideas and concepts to our graduate curriculum. It has greatly facilitated our students in transitioning to new mechanical engineering research in bio-systems. His teaching evaluations have improved significantly since his first year of teaching, and he is now getting high Q1/Q2 scores. Professor Fu has graduated one Ph.D. student (currently an assistant professor at New York University) and is currently supervising eight more. The students' comments show that he is an effective teacher and excellent advisor, testifying that Professor Fu is devoted, creative and knowledgeable. His mentorship is also demonstrated through publications with his graduate students in high quality journals.

Research: Professor Fu's research focuses on Bio-Microelectromechanical and -Nanoelectromechanical Systems, Lab-on-Chip, mechanobiology, and stem cell biology. Since coming to U-M, he has built upon and expanded from the strong foundation from his Ph.D. and postdoctoral training and is developing an excellent reputation in his field. Professor Fu is performing high quality scholarly research and has developed a well-funded program at U-M;

winning an NSF CAREER award and several other highly competitive grants from various agencies such as NIH. He has authored a total of 44 journal papers; 34 since joining U-M. He has been publishing research findings in prestigious journals in his field, such as *Nature Materials*, *Nature Methods*, *Advanced Materials*, *and ACS Nano*. His papers are very well cited by other scholars and researchers. Overall, Professor Fu has developed an excellent research record with outstanding potential.

Recent and Significant Publications:

Yubing Sun, and Jianping Fu. Harnessing mechanobiology of human pluripotent stem cells for regenerative medicine. *ACS Chemical Neuroscience*, vol. 5, pp. 621-623, 2014.

Xiang Li, Weiqiang Chen, Guangyu Liu, Wei Lu, and Jianping Fu. Continuous-flow microfluidic blood cell sorting for unprocessed whole blood using surface- micromachined microfiltration membranes. *Lab on Chip*, vol. 14, pp. 2565-2575, 2014.

Yubing Sun, Koh Meng Aw Yong, Luis G. Villa-Diaz, Xiaoli Zhang, Weiqiang Chen, Renee Philson, Shinuo Weng, Haoxing Xu, Paul H. Krebsbach, and Jianping Fu. Hippo / YAP-mediated rigidity-dependent motor neuron differentiation of human pluripotent stem cells. *Nature Materials*, vol. 13, pp. 599-604, 2014.

Bo-Ram Oh, Nien-Tsu Huang, Weiqiang Chen, Jungwhan Seo, Pengyu Chen, Timothy T. Cornell, Thomas P. Shanley, Jianping Fu, and Katsuo Kurabayashi. Integrated nanoplasmonic sensing for cellular functional immunoanalysis using human blood. *ACS Nano*, vol. 8, pp. 2667-2676, 2014.

Yue Shao, Jennifer M. Mann, Weiqiang Chen, and Jianping Fu. Global architecture of F-actin cytoskeleton regulates cell shape-dependent endothelial mechanotransduction. *Integrative Biology*, vol. 6, pp. 300-311, 2014.

Zeta Tak-For Yu, Koh Meng Aw Yong, and Jianping Fu. Microfluidic blood sample preparation and analysis: Now and beyond. *Small*, vol. 10, pp. 1687–1703, 2014.

Yue Shao, and Jianping Fu. Integrating micro/nanoengineered functional biomaterials for cell mechanics and mechanobiology: A Materials perspective. *Advanced Materials*, vol. 26, pp. 1494-1533, 2014.

Mark T. Breckenridge, Ravi A. Desai, Michael T. Yang, Jianping Fu, and Christopher S. Chen. Substrates with engineered step changes in rigidity suggest a role for subcellular biases in traction force in driving durotaxis. *Cellular and Molecular Bioengineering*, vol. 7, pp. 26-34, 2014.

Yue Shao, Xinyu Tan, Roman Novitski, Misha Muqaddam, Paul T. List, Laura Williamson, Jianping Fu, and Allen P. Liu. Uniaxial cell stretching device for live- cell imaging of mechanosensitive cellular functions. *Review of Scientific Instruments*, vol. 84, 114304, 2013.

Zhenzhen Fan, Yubing Sun, Di Chen, Weiqiang Chen, Cheri X. Deng, and Jianping Fu. Acoustic tweezing cytometry for live-cell subcellular control of intracellular cytoskeleton contractility. *Scientific Reports*, vol. 3, 2176, 2013.

Service: Professor Fu has an overall record of service that meets expectations for junior faculty members at this stage in their career. Within the Department of Mechanical Engineering, Professor Fu has been a good citizen. He has been on the department seminar committee and has taken a leadership role as the coordinator for the junior faculty mentoring lunch for an academic year; he has served as a member of the Mechanical Engineering graduate program committee and the graduate admissions committee. Furthermore, he has actively served in different events associated with the College of Engineering and the university. Externally, Professor Fu has been very active in serving the technical community. He is a member of the ASME Bioengineering Division National Technical Committee on Tissue and Cellular Engineering. He has also organized symposia of various

conferences in his field and is a guest editor for the ASME *Journal of Nanotechnology in Engineering and Medicine* Special Topic issue on nanoscale materials, devices, and systems for biosensing, biomanipulation and biofabrication. Professor Fu has reviewed many technical papers for a variety of top scientific journals and many proposals for various agencies.

External Reviewers:
Reviewer A: "Nice combination of new biomaterials and nano/microfluidic technologies enables him to develop novel nanomaterials, which will be extremely useful for the personalized medicine and personalized healthcare..."

Reviewer B: "I see him as becoming a future leader in mechanotransduction, particularly as it relates to stem cell fate."

Reviewer C: "Jianping's work is characterized by a high level of creativity, scholarship and innovation, and tackles diverse scientific questions with impact on a wide range of applications."

Reviewer D: "Prof. Fu's research is contributing new knowledge in important areas by introducing new tools & maturing existing tools...it is clear that important contributions to both knowledge and capabilities are being made by his group in a thoughtful, thorough manner."

Reviewer E: "In general, I find a nice balance between biological mechanism and innovative technology in his work, another good indicator of future success."

Reviewer F: "Dr [sic] Fu not only displays creativity and innovativeness in his approaches in investigating cells at the subcellular level and their mechanobiological responses to forces acting on them, he also provides great insights in terms of the biology that leads to these responses."

Reviewer G: "As I look around the nation, I find that Dr. Fu is one of the top five scientists in his peer group who are working in the same field in terms of contribution and impact."

Summary of Recommendation: Professor Fu is a great asset to the University of Michigan. He is an effective teacher and excellent advisor. He has built a very strong research program with outstanding potential, and has been publishing high quality papers in high impact journals. In service, Professor Fu has been a good citizen in serving the university and his technical community. It is with the support of the College of Engineering Executive Committee that I recommend Jianping Fu for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, College of Engineering, and associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, College of Engineering and Medical School.

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

James O. Woolliscroft, M.D.
Dean, Medical School
Lyle C. Roll Professor of Medicine

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