

## JIANPING FU

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Department of Mechanical Engineering

University of Michigan

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### A. EDUCATION

#### Massachusetts Institute of Technology (MIT)

Cambridge, MA

Ph.D. Department of Mechanical Engineering. (2002-2007)

Thesis title: Nanofluidic devices for rapid analysis of DNA and proteins

Thesis advisor: Jongyoon Han

#### University of California, Los Angeles (UCLA)

Los Angeles, CA

M.S. Department of Mechanical and Aerospace Engineering. (2000-2002)

#### University of Science and Technology of China (USTC)

Hefei, Anhui

B.E. Department of Thermal Science and Energy Engineering. (1995-2000)

### B. POSITIONS AND EMPLOYMENT

#### University of Michigan, Ann Arbor

Associate Director, Michigan Center for Integrative Research in Critical Care.

Sept. 2015-present

Associate Professor (by courtesy), Cell & Developmental Biology.

Sept. 2015-present

Associate Professor (by courtesy), Biomedical Engineering.

Sept. 2015-present

Associate Professor (with tenure), Mechanical Engineering.

Sept. 2015-present

Assistant Professor, Mechanical Engineering.

Sept. 2009-Aug. 2015

#### Other affiliations:

Faculty Member, Center for Systems Biology.

Jan. 2014-present

Faculty Member, Center for Wireless Integrated MicroSensing and Systems (WIMS<sup>2</sup>).

Nov. 2013-present

Faculty Member, Michigan Center for Integrative Research in Critical Care.

May 2013-present

Core Member, Comprehensive Cancer Center.

Sept. 2012-present

Faculty Member, Microfluidics in Biomedical Sciences Training Program.

Nov. 2010-present

Faculty Member, Center for Organogenesis.

Oct. 2010-present

Faculty Associate, Center for Global Health.

Feb. 2010-June 2012

#### University of Pennsylvania

Postdoctoral Research Fellow, Bioengineering.

Sept. 2007-Aug. 2009

#### Massachusetts Institute of Technology

Graduate Research Assistant, Electrical and Biological Engineering.

June 2002-Aug. 2007

### C. AWARDS AND FELLOWSHIPS

1. Outstanding Poster Award, 9th International Conference on Microtechnologies in Medicine and Biology (2018)
2. 10 Breakthrough Technologies of 2018 - Artificial Embryos, MIT Technology Review (2018)
3. George J. Huebner, Jr. Research Excellence Award, Univ. Michigan (2018)
4. Rising Star Award, Biomedical Engineering Society - Cellular and Molecular Bioengineering (2016)
5. Ted Kennedy Family Team Excellence Award, Univ. Michigan (2015)
6. Robert M. Caddell Memorial Award for Research, Univ. Michigan (2014)
7. Mechanical Engineering Outstanding Faculty Achievement Award, Univ. Michigan (2014)
8. Two Outstanding Paper Awards, ASME Global Congress on Nano Engineering for Medicine and Biology (2013)

9. NSF Faculty Early Career Development (CAREER) Award (2012)
10. American Heart Association Scientist Development Grant, National Program (2012)
11. American Heart Association Postdoctoral Fellowship (2008)
12. Senturia Prize for Best Thesis in MEMS/NEMS, MIT (2007)
13. Halen Carr Peake Research Prize for Bioengineering Research of Extraordinary Quality, MIT (2007)
14. PPST 20th Anniversary Research Excellence Award, First Runner-up, MIT (2006)
15. MIT 100K Entrepreneurship Competition, Semifinalist (2006)
16. Massachusetts Technology Assessment Award (2006)

#### D. SELECTED JOURNAL PUBLICATIONS

(\*Corresponding author; #Equal contribution; Underline: current graduate / postdoc advisees at UM; Double underline: former graduate / postdoc advisees at UM)

- [1] Xufeng Xue, Yubing Sun\*, Agnes Resto-Irizarry, Ye Yuan, Koh Meng Aw Yong, Yi Zheng, Shinuo Weng, Yue Shao, Yimin Chai, Lorenz Studer, and **Jianping Fu**\*. Mechanics-guided embryonic patterning of neuroectoderm tissue from human pluripotent stem cells. *Nature Materials*, vol. 17, pp. 633-641, 2018. DOI: 10.1038/s41563-018-0082-9.
- [2] Yue Shao#, Kenichiro Taniguchi#, Ryan F. Townshend, Toshio Miki, Deborah L. Gumucio\*, and **Jianping Fu**\*. A pluripotent stem cell-based model for post-implantation human amniotic sac development. *Nature Communications*, vol. 8, 208, 2017. DOI: 10.1038/s41467-017-00236-w. PMID: PMC5547056.
- [3] Yue Shao#, Kenichiro Taniguchi#, Katherine Gurdziel, Ryan F. Townshend, Xufeng Xue, Koh Meng Aw Yong, Jianming Sang, Jason R. Spence, Deborah L. Gumucio\*, and **Jianping Fu**\*. Self-organized amniogenesis by human pluripotent stem cells in a biomimetic implantation-like niche. *Nature Materials*, vol. 16, pp. 419-425, 2017. DOI: 10.1038/NMAT4829. PMID: PMC5374007.
- [4] Shinuo Weng#, Yue Shao#, Weiqiang Chen, and **Jianping Fu**\*. Mechanosensitive subcellular rheostasis drives emergent single-cell tensional homeostasis. *Nature Materials*, vol. 15, pp. 961-967, 2016. DOI: 10.1038/nmat4654. PMID: PMC4996707.
- [5] 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. DOI: 10.1038/nmat3945. PMID: PMC4051885.
- [6] Ankur Singh, Shalu Suri, Ted T. Lee, Jamie M. Chilton, Weiqiang Chen, **Jianping Fu**, Steven L. Stice, Hang Lu, Todd C. McDevitt, and Andrés J. García. Adhesive signature-based, label-free isolation of human pluripotent stem cells. *Nature Methods*, vol. 10, pp. 438-444, 2013. DOI: 10.1038/nmeth.2437. PMID: PMC3641175.
- [7] **Jianping Fu**#, Yang-Kao Wang#, Michael T. Yang, Ravi A. Desai, Xiang Yu, Zhijun Liu, and Christopher S. Chen. Mechanical regulation of cell function with geometrically modulated elastomeric substrates. *Nature Methods*, vol. 7, pp.733-736, 2010. DOI: 10.1038/nmeth.1487. PMID: PMC3069358.
- [8] **Jianping Fu**#, Reto B. Schoch#, Anna L. Stevens, Steven R. Tannenbaum, and Jongyoon Han. A patterned anisotropic nanofluidic sieving structure for continuous-flow separation of DNA and proteins. *Nature Nanotechnology*, vol. 2, pp.121-128, 2007. DOI: 10.1038/nnano.2006.206. PMID: PMC2621439.
- [9] **Jianping Fu**, Juhwan Yoo, and Jongyoon Han. Molecular sieving in periodic free-energy landscapes created by patterned nanofilter arrays. *Physical Review Letters*, vol. 97, 018103, 2006. DOI: 10.1103/PhysRevLett.97.018103. PMID: PMC1752241.

## E. REFEREED JOURNAL PUBLICATIONS (FULL LIST)

(\*Corresponding author; #Equal contribution; Underline: current graduate / postdoc advisees at UM; Double underline: former graduate / postdoc advisees at UM)

- [1] Yen P. Kong, Ana Y. Rioja, Xufeng Xue, Yubing Sun, **Jianping Fu**, and Andrew J. Putnam\*. A systems mechanobiology model to predict cardiac reprogramming outcomes on different biomaterials. *Biomaterials*, in press, 2018.
- [2] Elisa Mattias Sartori, Osvaldo Magro-Filho, Daniela B. Silveira Mendonça, Xiang Li, **Jianping Fu**, and Gustavo Mendonça\*. Modulation of micro RNA expression and osteoblast differentiation by nanotopography. *International Journal of Oral & Maxillofacial Implants*, vol. 33, pp. 269-280, 2018. DOI: 10.11607/jomi.5372.
- [3] Xufeng Xue, Yubing Sun\*, Agnes Resto-Irizarry, Ye Yuan, Koh Meng Aw Yong, Yi Zheng, Shinuo Weng, Yue Shao, Yimin Chai, Lorenz Studer, and **Jianping Fu**\*. Mechanics-guided embryonic patterning of neuroectoderm tissue from human pluripotent stem cells. *Nature Materials*, vol. 17, pp. 633-641, 2018.
- Commentary by Mukul Tewary & Peter W. Zandstra, “Mechanics-guided developmental fate patterning”, *Nature Materials*, vol. 17, pp. 571-572, 2018.
- [4] Zida Li, Yize Wang, Xufeng Xue, Brendan McCracken, Kevin Ward, and **Jianping Fu**\*. Carbon nanotube strain sensor based hemoretractometer for blood coagulation testing. *ACS Sensors*, vol. 3, pp. 670-676, 2018. DOI: 10.1021/acssensors.7b00971.
- [5] Weiqiang Chen, Shuo Han, Weyi Qain, Shinuo Weng, Haiou Yang, Yubing Sun, Luis G. Villa-Diaz, Paul H. Krebsbach, and **Jianping Fu**\*. Nanotopography regulates motor neuron differentiation of human pluripotent stem cells. *Nanoscale*, vol. 10, pp. 3556–3565, 2018.
- [6] Agnes M. Resto Irizarry and **Jianping Fu**\*. Highly parallel single-cell force cytometry. *Nature Biomedical Engineering*, vol. 2, pp. 60-61, 2018. DOI: 10.1038/s41551-018-0198-x. (News & Views)
- [7] Yue Shao, Kenichiro Taniguchi, Deborah Gumucio, and **Jianping Fu**. Synthetic human embryology: The rise of a new era with new collaborations. *Development*, 2018. (Commentary)
- [8] Zida Li, Xufeng Xue, Feng Lin, Yize Wang, Kevin Ward, and **Jianping Fu**\*. Capillary-facilitated deposition of carbon nanotube film for strain sensing. *Applied Physics Letter*, vol. 111, 173105, 2017. DOI: 10.1063/1.5001754. PMID: PubMed - in process.
- [9] Koh Meng Aw Yong, Zida Li, Sofia D. Merajver, and **Jianping Fu**\*. Tracking the tumor invasion front using long-term fluidic tumoroid culture. *Scientific Reports*, vol. 7, 10784, 2017. DOI: 10.1038/s41598-017-10874-1. PMID: PMC5589910.
- Top 100 read oncology papers for *Scientific Reports* in 2017.
  - Highlighted by *Michigan Health Lab Report*, *Michigan Engineering News Center*, *EurekAlert!* by AAAS, *Genetic Engineering & Biotechnology News*, *ScienceDaily*, *Nanowerk*, *Health Medicine Network*, *Health News Digest*, *eCancer News*, *The Medical News*, *Medical Xpress*.
- [10] Kenichiro Taniguchi#, Yue Shao#, Ryan F. Townshend, Clair E. Harris, Sasha Meshinchi, Sundeep Kalantry, **Jianping Fu**, K. Sue O’Shea, and Deborah L. Gumucio\*. An apicosome initiates self-organizing morphogenesis in human pluripotent stem cells. *Journal of Cell Biology*, vol. 216, pp. 3981-3990, 2017. DOI: 10.1083/jcb.201704085. PMID: PubMed - in process.

- Commentary by Alejandra I. Romero-Morales, Natalya A. Ortolano, and Vivian Gama, “*Apical polarization and lumenogenesis: The apicosome sheds new light*”, *Journal of Cell Biology*, vol. 216, pp. 3891-3893, 2017. DOI: 10.1083/jcb.201710028.
- [11] Yue Shao<sup>#</sup>, Kenichiro Taniguchi<sup>#</sup>, Ryan F. Townshend, Toshio Miki, Deborah L. Gumucio\*, and **Jianping Fu**\*. A pluripotent stem cell-based model for post-implantation human amniotic sac development. *Nature Communications*, vol. 8, 208, 2017. DOI: 10.1038/s41467-017-00236-w. PMCID: PMC5547056.
- Recommended in *F1000Prime* as being of special significance in its field by F1000 Faculty Member Magdalena Zernicka-Goetz.
  - Highlighted by *Michigan News, Michigan Engineering News Center, Phys.org, Michigan Health Lab Report, The Scientist, EurekAlert! by AAAS, Innovators Magazine, Health Medicine Network, BioSpace, eScience News, HiTech Days, RELIAWIRE, ScienceDaily, TransBio-Tex, Science Newslines, MedWorm, World University News, Jersey Tribune, News Wise, News-Medical, My Science, and MedIndia.*
- [12] Abhay Kotnala, Yi Zheng, **Jianping Fu**, and Wei Cheng\*. Microfluidic-based high-throughput optical trapping of nanoparticles. *Lab on a Chip*, vol. 17, pp. 2125-2134, 2017. DOI: 10.1039/c7lc00286f. PMCID: PMC5533511.
- [13] Dennis W. Zhou, Ted T. Lee, Shinuo Weng, **Jianping Fu**, and Andrés J. García\*. Effects of substrate stiffness and actomyosin contractility on coupling between force transmission and vinculin-paxillin recruitment at single focal adhesions. *Molecular Biology of the Cell*, vol. 28, pp. 1901, 2017. DOI: 10.1091/mbc.E17-02-0116. PMCID: PMC5541841.
- [14] Yi Zheng, Shue Wang, Xuefeng Xue, Alan Xu, Wei Liao, Alice Deng, Guohao Dai, Allen P. Liu, and Jianping Fu\*. Notch signaling in regulating angiogenesis in a 3D biomimetic environment. *Lab on a Chip*, vol. 17, pp. 1948-1959, 2017. DOI: 10.1039/c7lc00186j. PMCID: PubMed - in process.
- Selected as the inside back cover story by *Lab on a Chip*.
- [15] Xufeng Xue, Xiaowei Hong, Zida Li, Cheri X. Deng\*, and **Jianping Fu**\*. Acoustic tweezing cytometry enhances osteogenesis of human mesenchymal stem cells through cytoskeletal contractility and YAP activation. *Biomaterials*, vol. 134, pp. 22-30, 2017. DOI: 10.1016/j.biomaterials.2017.04.039. PMCID: PMC5506541.
- [16] Yujing Song, Pengyu Chen, Meng Ting Chung, Robert Nidetz, Younggeun Park, Zhenhui Liu, Walker McHugh, Timothy T. Cornell, **Jianping Fu**, and Katsuo Kurabayashi. AC electroosmosis-enhanced nanoplasmafluidic detection of ultralow-concentration cytokine. *Nano Letters*, vol. 17, pp. 2374-2380, 2017. DOI: 10.1021/acs.nanolett.6b05313. PMCID: PMC5487264.
- [17] Koh Meng Aw Yong, Yubing Sun, Sofia D. Merajver, and **Jianping Fu**\*. Mechanotransduction induced reversible phenotypic switching in prostate cancer cells. *Biophysical Journal*, vol. 112, pp. 1236-1245, 2017. DOI: 10.1016/j.bpj.2017.02.012. PMCID: PMC5376107.
- [18] Gang Zhao\* and **Jianping Fu**. Microfluidics for biopreservation. *Biotechnology Advances*, vol. 35, pp. 323-336, 2017. DOI: 10.1016/j.biotechadv.2017.01.006. PMCID: PubMed - in process.
- [19] Zeta Tak For Yu, Jophin George Joseph, Shirley Xiaosu Liu, Mei Ki Cheung, Parker James Haffey, Katsuo Kurabayashi, and **Jianping Fu**\*. Centrifugal microfluidics for sorting immune cells from blood. *Sensors & Actuators: B. Chemical*, vol. 245, pp. 1050-1061, 2017. DOI: 10.1016/j.snb.2017.01.113. PMCID: PMC5619665.

- [20] Yue Shao<sup>#</sup>, Kenichiro Taniguchi<sup>#</sup>, Katherine Gurdziel, Ryan F. Townshend, Xufeng Xue, Koh Meng Aw Yong, Jianming Sang, Jason R. Spence, Deborah L. Gumucio\*, and **Jianping Fu**\*. Self-organized amniogenesis by human pluripotent stem cells in a biomimetic implantation-like niche. *Nature Materials*, vol. 16, pp. 419-425, 2017. DOI: 10.1038/NMAT4829. PMID: PMC5374007.
- Commentary by Martin Pera, “*In vitro* amniogenesis”, *Nature Materials*, vol. 16, pp. 394-395, 2017.
  - Highlighted by *Michigan News*, *Michigan Engineering*, *Phys.org*, and *Technology.org*.
- [21] Jianming Sang, Xiang Li, Yue Shao, Zida Li, and **Jianping Fu**\*. Controlled tubular unit formation from collagen film for modular tissue engineering. *ACS Biomaterials Science & Engineering*, vol. 3, pp. 2860-2868, 2017. DOI: 10.1021/acsbiomaterials.6b00468. PMID: PubMed - in process.
- [22] Staci Hill, Weiyi Qian, Weiqiang Chen\*, and **Jianping Fu**\*. Surface micromachining of polydimethylsiloxane for microfluidics applications. *Biomicrofluidics*, vol. 10, 054114, 2016. DOI: 10.1063/1.4964717. PMID: PMC5065565.
- [23] Weiqiang Chen, Steven G. Allen, Ajaya Kumar Reka, Weiyi Qian, Shuo Han, Jianing Zhao, Liwei Bao, Venkat Keshamouni\*, Sofia D. Merajver\*, and **Jianping Fu**\*. Nanoroughened adhesion-based capture of circulating tumor cells with heterogeneous molecular expression and metastatic characteristics. *BMC Cancer*, vol. 16, 614, 2016. DOI: 10.1186/s12885-016-2638-x. PMID: PMC4977622.
- [24] Bo-Ram Oh, Pengyu Chen, Robert Nidetz, Walker McHugh, **Jianping Fu**, Thomas P. Shanley, Timothy T. Cornell, and Katsuo Kurabayashi. Multiplexed nanoplasmonic temporal profiling of T-cell response under immunomodulatory agent exposure. *ACS Sensors*, vol. 1, pp. 941-948, 2016. DOI: 10.1021/acssensors.6b00240. PMID: PMC4960639.
- Selected to be featured in *ACS Editors' Choice*.
- [25] Shinuo Weng<sup>#</sup>, Yue Shao<sup>#</sup>, Weiqiang Chen, and **Jianping Fu**\*. Mechanosensitive subcellular rheostasis drives emergent single-cell tensional homeostasis. *Nature Materials*, vol. 15, pp. 961-967, 2016. DOI: 10.1038/nmat4654. PMID: PMC4996707.
- [26] Zeta Tak For Yu, Mei Ki Cheung, Shirley Xiaosu Liu, and **Jianping Fu**\*. Accelerated biofluid filling in complex microfluidic networks by vacuum-pressure accelerated movement (V-PAM). *Small*, vol. 12, pp. 4521-4530, 2016. DOI: 10.1002/sml.201601231. PMID: PubMed - in process.
- Selected as the inside cover story by *Small*.
- [27] Zida Li, Xiang Li, Brendan McCracken, Yue Shao, Kevin Ward, and **Jianping Fu**\*. A miniaturized hemoretractometer for blood clot retraction testing. *Small*, vol. 12, pp. 3926-3934, 2016. DOI: 10.1002/sml.201600274. PMID: PMC4980575.
- Selected as the frontispiece story by *Small*.
- [28] Nhung Nguyen, Yue Shao, Alan Wineman, **Jianping Fu**, and Anthony Waas. Atomic force microscopy indentation and inverse analysis for non-linear viscoelastic identification of breast cancer cells. *Mathematical Biosciences*, vol. 277, pp. 77-88, 2016. DOI: 10.1016/j.mbs.2016.03.015. PMID: PubMed - in process.
- [29] Shuhuan Hu, Guangyu Liu, Weiqiang Chen, Xiang Li, Wei Lu, Raymond H. W. Lam\*, and **Jianping Fu**\*. Multiparametric biomechanical and biochemical phenotypic profiling of single cancer cells using elasticity microcytometer. *Small*, vol. 12, pp. 2300-2311, 2016. DOI: 10.1002/sml.201503620. PMID: PubMed - in process.

- Selected as the front cover page story by *Small*.
- [30] Yi Zheng, Yubing Sun, Xinwei Yu, Yue Shao, Ping Zhang, Guohao Dai, and **Jianping Fu\***. Angiogenesis in liquid tumors: An *in-vitro* assay for leukemic cell induced bone marrow angiogenesis. *Advanced Healthcare Materials*, vol. 5, pp. 1014-1024, 2016. DOI: 10.1002/adhm.201501007. PMID: PMC4890157.
- Selected as the VIP paper and the front cover page story by *Advanced Healthcare Materials*.
- [31] Kenichiro Taniguchi, Yue Shao, Ryan F. Townshend, Yu-Hwai Tsai, Cynthia J. DeLong, Shawn A. Lopez, Srimonta Gayen, Andrew M. Freddo, Deming J. Chue, Dennis J. Thomas, Jason R. Spence, Benjamin Margolis, Sundeep Kalantry, **Jianping Fu**, K. Sue O'Shea, and Deborah L. Gumucio. Lumen formation is an intrinsic property of isolated human pluripotent stem cells. *Stem Cell Reports*, vol. 5, pp. 954-962, 2015. DOI: 10.1016/j.stemcr.2015.10.015. PMID: PMC4682207.
- [32] Christopher Moraes, Joseph M. Labuz, Yue Shao, **Jianping Fu**, and Shuichi Takayama. Supersoft lithography: Candy-derived soft microstructures to measure microtissue-generated stresses. *Lab on Chip*, vol. 15, pp. 3760-3765, 2015. DOI: 10.1039/C5LC00722D. PMID: PMC4550510.
- [33] Hui Wang, Yubing Sun, Jinhui Yi, **Jianping Fu**, Jing Di, Alejandra del Carmen Alonso, and Shuiqin Zhou. Biocompatible PEG-chitosan-carbon dots hybrid nanogels for optical pH-sensing, two-photon fluorescence imaging and near-infrared light/pH dual-responsive drug carrier. *Advanced Functional Materials*, vol. 25, pp. 5537-5547, 2015. DOI: 10.1002/adfm.201501524. PMID: PubMed - in process.
- [34] Xiang Li, Zeta Tak-For Yu, Dalton Geraldo, Shinuo Weng, Nitesh Alve, Andy Dun, Akshay Kini, Karan Patel, Roberto Shu, and **Jianping Fu\***. Desktop aligner for fabrication of multilayer microfluidic devices. *Review of Scientific Instruments*, vol. 86, 075008, 2015. DOI: 10.1063/1.4927197. PMID: PMC4522017.
- [35] Zeta Tak-For Yu, Huijiao Guan, Mei Ki Cheung, Timothy T. Cornell, Thomas P. Shanley, Katsuo Kurabayashi, and **Jianping Fu\***. Rapid, automated, multiplexed quantitative immunoassays using highly integrated microfluidics and AlphaLISA. *Scientific Reports*, vol. 5, 11339, 2015. DOI: 10.1038/srep11339. PMID: PMC4466892.
- [36] Yong Li, Dan Lei, William R. Swindell, Wei Xia, Shinuo Weng, **Jianping Fu**, Christal A. Worthen, Toru Okubo, Andrew Johnston, Johann E. Gudjonsson, John J. Voorhees, and Gary J. Fisher. Age-associated increase of skin fibroblast-derived prostaglandin E2 contributes to reduced collagen levels in elderly human skin. *Journal of Investigative Dermatology*, vol. 135, pp. 2181-2188, 2015. DOI: 10.1038/jid.2015.157.
- [37] Pengyu Chen, Meng Ting Chuang, Walker McHugh, Robert Nidetz, Yuwei Li, **Jianping Fu**, Timothy T. Cornell, Thomas P. Shanley, and Katsuo Kurabayashi. Multiplex serum cytokine immunoassay using nanoplasmonic biosensor microarrays. *ACS Nano*, vol. 9, pp. 4173-4181, 2015. DOI: 10.1021/acsnano.5b00396. PMID: PMC4447431.
- [38] Di Chen<sup>#</sup>, Yubing Sun<sup>#</sup>, Cheri X. Deng<sup>\*</sup>, and **Jianping Fu\***. Improving survival of disassociated human embryonic stem cells by mechanical stimulation using acoustic tweezing cytometry. *Biophysical Journal*, vol. 108, pp. 1315-1317, 2015. DOI: 10.1016/j.bpj.2015.01.033. PMID: PMC4375556.
- [39] Hui Wang, Yubing Sun, Jinhui Yi, **Jianping Fu**, Jing Di, Alejandra del Carmen Alonso, and Shuiqin Zhou. Fluorescent porous carbon nanocapsules for two-photon imaging, NIR/pH dual-responsive drug carrier, and photothermal therapy. *Biomaterials*, vol. 53, pp. 117-126, 2015. DOI: 10.1016/j.biomaterials.2015.02.087. PMID: PubMed - in process.

- [40] Yue Shao<sup>#</sup>, Jianming Sang<sup>#</sup>, and **Jianping Fu**\*. On human pluripotent stem cell control: The rise of 3D bioengineering and mechanobiology. *Biomaterials*, vol. 52, pp. 26-43, 2015. DOI: 10.1016/j.biomaterials.2015.01.078. PMID: PMC4379448.
- [41] Di Chen, Yubing Sun, Madhu S. R. Gudur, Yising Hsiao, Ziqi Wu, **Jianping Fu**\*, and Cheri X. Deng\*. Two bubble acoustic tweezing cytometry for biomechanical probing and stimulation of cells. *Biophysical Journal*, vol. 108, pp. 32-42, 2015. DOI: 10.1016/j.bpj.2014.11.050. PMID: PMC4286600.
- [42] **Jianping Fu**\*, and Donglei Fan. Special section on nanoscale materials, devices, and systems for biosensing, biomanipulation, and biofabrication. *ASME Journal of Nanotechnology in Engineering and Medicine*, vol. 5, 040201, 2014. DOI: 10.1115/1.4030870.
- [43] Lin Han, Jing Zhou, Yubing Sun, Yu Zhang, Jung Han, **Jianping Fu**, and Rong Fan. Single-crystalline, nanoporous gallium nitride films with fine tuning of pore size for stem cell engineering. *ASME Journal of Nanotechnology in Engineering and Medicine*, vol. 5, 041004, 2014. DOI: 10.1115/1.4030615.
- [44] Weiqiang Chen<sup>#</sup>, Yue Shao<sup>#</sup>, Xiang Li, Gang Zhao, and **Jianping Fu**\*. Nanotopographical surfaces for stem cell fate control: Engineering mechanobiology from the bottom. *Nano Today*, vol. 9, pp. 759-784, 2014. DOI: 10.1016/j.nantod.2014.12.002. PMID: PMC4394389.
- [45] Ying Zhu, Hong Xu, Kaimin Chen, **Jianping Fu**, and Hongchen Gu. Encoding through the host/guest structure: Construction of multiplexed fluorescent beads. *Chemical Communications*, vol. 50, pp. 14041-14044, 2014. DOI: 10.1039/c4cc05793g. PMID: PubMed - in process.
- [46] Xiang Li, Weiqiang Chen, Zida Li, Ling Li, Hongchen Gu, and **Jianping Fu**\*. Emerging microengineering tools for functional analysis and phenotyping of blood cells. *Trends in Biotechnology*, vol. 32, pp. 586-594, 2014. DOI: 10.1016/j.tibtech.2014.09.003. PMID: PMC4252757.
- [47] Zhenyuan Qu, Hong Xu, Ping Xu, Kaimin Chen, Rong Mu, **Jianping Fu**, and Hongchen Gu. Ultrasensitive ELISA using enzyme-loaded nanospherical brushes as labels. *Analytical Chemistry*, vol. 86, pp. 9367-9371, 2014. DOI: 10.1021/ac502522b. PMID: PubMed - in process.
- [48] Yubing Sun, and **Jianping Fu**\*. Harnessing mechanobiology of human pluripotent stem cells for regenerative medicine. *ACS Chemical Neuroscience*, vol. 5, pp. 621-623, 2014. DOI: 10.1021/cn5001155. PMID: PMC4140584.
- Selected as the front cover story for 2014 Aug. 20 issue of *ACS Chemical Neuroscience*.
- [49] 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. DOI: 10.1039/c4lc00350k. PMID: PMC4106416.
- [50] 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. DOI: 10.1038/nmat3945. PMID: PMC4051885.
- Commentary by Emily Rhodes Lowry & Christopher E. Henderson, “Stem cell differentiation: Yielding substrates for neurons”, *Nature Materials*, vol. 13, pp. 543-544, 2014.
  - Commentary by Ning Wang, “Stem cells go soft: Pliant substrate surfaces enhance motor neuron differentiation”, *Cell Stem Cell*, vol. 14, pp. 701-703, 2014.

- Highlighted by *Michigan News, Detroit Local 4 News, Crain's Detroit Business, ABC 7 Sarasota - WWSB, ABC News Radio, Headlines & Global News, Red Orbit, The Doctor Will See You Now, Consultant, Guardian Liberty Voice, The Australian, International Business Times UK, The Times of India, Israel Herald, Business Standard, Milwaukee Wisconsin Journal Sentinel, Medical News Today.*
- [51] 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. DOI: 10.1021/nm406370u. PMID: PMC4004291.
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## G. REFEREED CONFERENCE PROCEEDINGS

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