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Department of Mechanical Engineering
Department of Biomedical Engineering
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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)
Thesis title: Integrated electroplated heat spreaders for high power semiconductor lasers
Thesis advisor: Gang Chen

University of Science and Technology of China (USTC) Hefei, Anhui
B.E. Department of Mechanical Engineering. (1995-2000)
Thesis title: Thermophysical study of the trifluoroiodomethane (CF_3I)
Thesis advisor: Zeshao Chen

B. POSITIONS AND EMPLOYMENT

University of Michigan, Ann Arbor

Professor (by courtesy), Cell & Developmental Biology	Sept. 2020-present
Professor (by courtesy), Biomedical Engineering	Sept. 2020-present
Professor (with tenure), Mechanical Engineering	Sept. 2020-present
Associate Professor (with tenure), Mechanical Engineering	Sept. 2015-Aug. 2020
Associate Director, Michigan Center for Integrative Research in Critical Care	Sept. 2015-June 2018
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 ($WIMS^2$)	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
Postdoctoral advisor: Christopher S. Chen

Massachusetts Institute of Technology
Graduate Research Assistant, Electrical and Biological Engineering. June 2002-Aug. 2007
Graduate research advisor: Jongyoon Han

C. HONORS AND AWARDS

FACULTY

1. Translational Award, UM Life Sciences - Michigan Translational Research and Commercialization (MTRAC) Program (2021)
2. Fast Forward Medical Innovation (FFMI) fastPACE Award, Runner-up (2020; with Huaijing Tang and Samuel Lee)
3. Fellow, American Society of Mechanical Engineers (ASME) (2020)
4. Analytical Chemistry Young Innovator Award, American Chemical Society (ACS) (2020)
5. Senior Member, Institute of Electrical and Electronics Engineers (IEEE) (2020)
6. Fellow, Royal Society of Chemistry (RSC) (2020)
7. Council member, Biomedical Engineering Society Cellular and Molecular Bioengineering Special Interest Group (BMES CMBE-SIG) (2020-2022)
8. Robert M. Caddell Memorial Award for Research, Univ. Michigan (2020; with Yi Zheng, Xufeng Xue, Sajedeh Nasr Esfahani, and Agnes M. Resto Irizarry)
9. Fellow, American Institute for Medical and Biological Engineering (AIMBE) (2020)
10. Member, International Society for Stem Cell Research (ISSCR) Guidelines Working Group (2019-2021)
11. Outstanding Poster Award, 9th International Conference on Microtechnologies in Medicine and Biology (2018; with Xufeng Xue)
12. 10 Breakthrough Technologies of 2018 - Artificial Embryos, *MIT Technology Review* (2018)
13. George J. Huebner, Jr. Research Excellence Award, Univ. Michigan (2018)
14. Coulter Translational Research Award, Univ. Michigan (2016)
15. Kickstart Award, Michigan Translational Research and Commercialization (MTRAC) for Life Sciences Innovation Hub (2016)
16. Rising Star Award, Biomedical Engineering Society - Cellular and Molecular Bioengineering (2016)
17. Ted Kennedy Family Team Excellence Award, Univ. Michigan (2015)
18. Robert M. Caddell Memorial Award for Research, Univ. Michigan (2014; with Yubing Sun)
19. Mechanical Engineering Outstanding Faculty Achievement Award, Univ. Michigan (2014)
20. Two Outstanding Paper Awards, ASME Global Congress on Nano Engineering for Medicine and Biology (2013; with Yue Shao and Weiqiang Chen)
21. NSF Faculty Early Career Development (CAREER) Award (2012)
22. American Heart Association Scientist Development Award, National Program (2012)
23. Member, ASME Bioengineering Division National Technical Committee on Tissue and Cellular Engineering (2011-2015)

POSTGRADUATE

24. American Heart Association Postdoctoral Fellowship (2008)

GRADUATE

25. Senturia Prize for Best Thesis in MEMS/NEMS, MIT (2007)
26. Halen Carr Peake Research Prize for Bioengineering Research of Extraordinary Quality, MIT (2007)
27. Program in Polymer Science and Technology (PPST) 20th Anniversary Research Excellence Award, First Runner-up, MIT (2006)
28. 100K Entrepreneurship Competition, Semifinalist, MIT (2006)
29. Massachusetts Technology Assessment Award, Massachusetts Technology Transfer Center (MTTC) (2006)
30. NTW Graduate Student Fellowship, UCLA (2000)

UNDERGRADUATE

31. Undergraduate Thesis Excellence Award, Univ. Sci. & Technol. China (2000)
32. *Proctor* & *Gamble* Scholarship, Univ. Sci. & Technol. China (1999)

33. Liu Yongling Scholarship, Univ. Sci. & Technol. China (1998)
34. Zhang Zhongzhi Science & Technology Scholarship, Univ. Sci. & Technol. China (1997)
35. Freshman Merit Scholarship, Univ. Sci. & Technol. China (1995)

NOTABLE SERVICES

JOURNAL EDITORS

1. Associate editor, ***npj Regenerative Medicine*** (March 2021 - present)
2. Guest editor, ***Stem Cell Reports: Special Issue on Embryo Modeling***, 2021 (co-editor: Nicolas Rivron)
3. Guest editor, ***Current Opinion in Biomedical Engineering: Special Issue on Organoids and Tissue Development***, 2020 (co-editor: George A. Truskey)
4. Guest editor, ***Biomicrofluidics***, 2015.
5. Guest editor, ***ACS Biomaterials Science and Engineering***, 2014.
6. Guest editor, ***ASME Journal of Nanotechnology in Engineering and Medicine***, Special Topic on: Nanoscale materials, devices, and systems for biosensing, biomanipulation, and biofabrication, 2014.

CONFERENCE ORGANIZERS

1. Organizer, 2021 International Society for Stem Cell Research (ISSCR) Digital Meeting Series: Stem Cell-Based Embryo Models (co-organizer: Nicolas Rivron)
2. Organizer, 2022 Keystone Symposia: Multi-Cellular Engineered Living Systems: Biologically Engineered Systems with New Functionality (co-organizers: Roger D. Kamm and Nuria Montserrat Pulido)
3. Organizer, 2022 BIRS Workshop: Modeling and Engineering of the Mammalian Embryo (co-organizers: Janet Rossant and Eric D. Siggia)
4. Organizer, 2023 BMES Cellular and Molecular Bioengineering Conference (co-organizer: Dennis Discher)

SOCIETY MEMBERSHIP

1. Fellow, American Institute for Medical and Biological Engineering (AIMBE)
2. Fellow, American Society of Mechanical Engineers (ASME)
3. Member, Biomedical Engineering Society (BMES)
4. Senor Member, IEEE Engineering in Medicine & Biology Society (EMBS)
5. Member, American Association for the Advancement of Science (AAAS)
6. Fellow, Royal Society of Chemistry (RSC)
7. Member, International Society for Stem Cell Research (ISSCR)
8. Member, Society for Biomaterials (SFB)
9. Member, Materials Research Society (MRS)
10. Member, American Society for Cell Biology (ASCB)
11. Member, American Society of Biomechanics (ASB)
12. Member, Biophysical Society (BPS)

D. SELECTED PUBLICATIONS

(*Corresponding author; #Equal contribution; &Undergraduate co-author; Underline: Graduate / postdoc advisees at UM)

[1] Ran Yang, Alexander Goedel, Yu Kang, Chengyang Si, Chu Chu, Yi Zheng, Zhenzhen Chen, Peter J. Gruber, Yao Xiao, Chikai Zhou, Chuen-Yan Leung, Yongchang Chen, **Jianping Fu**, Weizhi Ji, Fredrik Lanner*, Yuyu Niu*, and Kenneth Chien*. Essential amnion signals for primate primitive streak formation resolved by scRNA map. ***bioRxiv*** 2020.05.28.118703. DOI**:** 10.1101/2020.05.28.118703. (under review with ***Nature Communications***)

[2] Dennis W. Zhou, Marc Fernández-Yagüe, Nicolas S. Castro, Elijah N. Holland, Eric B. O'Neill, Jeroen Eyckmans, Christopher Chen, **Jianping Fu**, David D. Schlaepfer, and Andrés J. García*. Force-FAK signaling coupling at individual focal adhesions coordinates mechanosensing and

microtissue repair. ***Nature Communications***, vol. 12, 2359, 2021. DOI: 10.1038/s41467-021-22602-5.

[3] Sicong Wang, Chien-Wei Lin, Chari L. Cortez, Amber E. Carleton, Craig Johnson, Linnea E. Taniguchi, Ryan F. Townshend, Venkatesha Basrur, Alexey I. Nesvizhskii, Amy W. Hudson, Blake R. Hill, Peng Zou, **Jianping Fu***, Deborah L. Gumucio*, Mara C. Duncan*, and Kenichiro Taniguchi*. Spatially resolved cell polarity proteomics of a human epiblast model. ***Science Advances***, vol. 7, eabd8407, 2021. DOI: 10.1126/sciadv.abd8407.

[4] **Jianping Fu***, Aryeh Warmflash*, and Lutolf Matthias*. Stem-cell-based embryo models for fundamental research and translation. ***Nature Materials***, vol. 20, pp. 132-144, 2021. DOI: 10.1038/s41563-020-00829-9. PMCID: PMC7855549.

[5] Jonathon M. Muncie, Nadia M.E. Ayad, Johnathon N. Lakins, Xufeng Xue, **Jianping Fu**, and Valerie M. Weaver*. Mechanical tension promotes formation of gastrulation-like nodes and patterns mesoderm specification in human embryonic stem cells. ***Developmental Cell***, vol. 55, pp. 679-694, 2020. DOI**:** 10.1101/2020.02.10.943076.

[6] Yuanyuan Zheng, Xufeng Xue, Agnes M. Resto Irizarry, Zida Li, Yue Shao, Yi Zheng, Gang Zhao*, and **Jianping Fu***. Dorsal-ventral patterned neural cyst from human pluripotent stem cells in a biomimetic neurogenic niche. ***Science Advances***, vol. 5, eaax5933, 2019. DOI: 10.1126/sciadv.aax5933.

[7] Yi Zheng, Xufeng Xue, Yue Shao, Sicong Wang, Sajedeh Nasr Esfahani, Zida Li, Jonathon M. Muncie, Johnathon N. Lakins, Valerie M. Weaver, Deborah L. Gumucio, and **Jianping Fu***. Controlled modeling of human epiblast and amnion development using stem cells. ***Nature***, vol. 573, pp. 421-425, 2019. DOI: 10.1038/s41586-019-1535-2.

[8] Nicolas Rivron*, Martin Pera*, Janet Rossant, Alfonso Martinez Arias, Magdalena Zernicka-Goetz, **Jianping Fu**, Suzanne van den Brink, Annelien Bredenoord, Wybo Dondorp, Guido de Wert, Insoo Hyun, Megan Munsie, and Rosario Isasi. Debate ethics of embryo models from stem cells. ***Nature***, vol. 564, pp. 183-185, 2018. (Commentary)

[9] 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.

[10] 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. PMCID: PMC5547056.

[11] 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. PMCID: PMC5374007.

[12] 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. PMCID: PMC4996707.

[13] 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. PMCID: PMC4051885.

[14] 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. PMCID: PMC3641175.

[15] **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. PMCID: PMC3069358.

[16] **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. PMCID: PMC2621439.

[17] **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. PMCID: PMC1752241.

E. REFEREED JOURNAL PUBLICATIONS (FULL LIST)

(*Corresponding author; [#]Equal contribution; [&]Undergraduate or K-12 co-author; Underline: Graduate / postdoc advisees at UM)

[1] Hayden Nunley, Xufeng Xue, **Jianping Fu**, and David K. Lubensky. Generation of fate patterns via intercellular forces. ***Physical Review Letters***, under review, 2021.

[2] Cheng Zhao, Alvaro Plaza Reyes, John Paul Schell, Jere Weltner, Nicolás Ortega, Yi Zheng, Åsa K. Björklund, Janet Rossant, **Jianping Fu**, Sophie Petropoulos, and Fredrik Lanner. Reprogrammed iBlastoids contain amnion-like cells but not trophectoderm. ***bioRxiv***, 2021.2005.2007.442980, 2021. DOI**:** 10.1101/2021.05.07.442980. (under review with ***Nature***)

[3] Agnes M. Resto Irizarry, Sajedeh Nasr Esfahani, Yi Zheng, Robin Zhexuan Yan, Patrick Kinnunen, and **Jianping Fu***. Machine learning-assisted imaging analysis of a human epiblast model. ***Integrative Biology***, in press, 2021.

[4] Nicolas Rivron*, and **Jianping Fu***. SnapShot: Embryo models. ***Stem Cell Reports***, vol. 16, pp. 1142, 2021. DOI: 10.1016/j.stemcr.2021.04.012.

[5] Nicolas Rivron*, and **Jianping Fu***. It takes a village to form embryo models. ***Stem Cell Reports***, vol. 16, pp. 1011-1013, 2021. DOI: 10.1016/j.stemcr.2021.04.014.

[6] Kejie Chen, Yi Zheng, Xufeng Xue, Yue Liu, Agnes M. Resto Irizarry, Huaijing Tang, and **Jianping Fu***. Branching development of early post-implantation human embryonic-like tissues in 3D stem cell culture. ***Biomaterials***, in press, 2021. DOI: 10.1016/j.biomaterials.2021.120898.

[7] Ran Yang, Alexander Goedel, Yu Kang, Chengyang Si, Chu Chu, Yi Zheng, Zhenzhen Chen, Peter J. Gruber, Yao Xiao, Chikai Zhou, Chuen-Yan Leung, Yongchang Chen, **Jianping Fu**, Weizhi Ji, Fredrik Lanner*, Yuyu Niu*, and Kenneth Chien*. Essential amnion signals for primate primitive streak formation resolved by scRNA map. ***bioRxiv*** 2020.05.28.118703. DOI**:** 10.1101/2020.05.28.118703. (under review with ***Nature Communications***)

[8] Yi Zheng, and **Jianping Fu***. First complete model of the human embryo. ***Nature***, vol. 591, pp. 531-532, 2021. DOI**:** 10.1038/d41586-021-00581-3. (News & Views)

[9] Dennis W. Zhou, Marc A. Fernández-Yagüe, Elijah N. Holland, Andrés F. García, Nicolas S. Castro, Eric B. O'Neill, Jeroen E.G. Eyckmans, Christopher S. Chen, **Jianping Fu**, David D. Schlaepfer, and

Andrés J. García*. Force-FAK signaling coupling at individual focal adhesions coordinates mechanosensing and microtissue repair. ***Nature Communications***, vol. 12, 2359, 2021. DOI: 10.1038/s41467-021-22602-5.

[10] Sicong Wang, Chien-Wei Lin, Chari L. Cortez, Amber E. Carleton, Craig Johnson, Linnea E. Taniguchi, Ryan F. Townshend, Venkatesha Basrur, Alexey I. Nesvizhskii, Amy W. Hudson, Blake R. Hill, Peng Zou, **Jianping Fu***, Deborah L. Gumucio*, Mara C. Duncan*, and Kenichiro Taniguchi*. Spatially resolved cell polarity proteomics of a human epiblast model. ***Science Advances***, vol. 7, eabd8407, 2021. DOI: 10.1126/sciadv.abd8407.

[11] Yi Zheng, Yue Shao, and **Jianping Fu***. A microfluidics-based stem cell model of early post-implantation human development. ***Nature Protocols***, vol. 16, pp. 309-326, 2021. DOI: 10.1038/s41596-020-00417-w.

[12] **Jianping Fu***, Aryeh Warmflash*, and Lutolf Matthias*. Stem-cell-based embryo models for fundamental research and translation. ***Nature Materials***, vol. 20, pp. 132-144, 2021. DOI: 10.1038/s41563-020-00829-9. PMCID: PMC7855549.

[13] Zhenzhen Fan, Xufeng Xue, **Jianping Fu**, and Cheri X. Deng*. Visualization and quantification of dynamic intercellular coupling in human embryonic stem cells using single cell sonoporation. ***Scientific Reports***, vol. 10, 18253, 2020. DOI: 10.1038/s41598-020-75347-4.

[14] Ryan F. Townshend, Yue Shao, Sicong Wang, Chari L. Cortez, Sajedeh Nasr Esfahani, Jason R. Spence, K. Sue O'Shea, **Jianping Fu**, Deborah L. Gumucio*, and Kenichiro Taniguchi*. Effect of cell spreading on rosette formation by human pluripotent stem cell-derived neural progenitor cells. ***Frontiers in Cell and Developmental Biology***, vol. 8, 588941, 2020. DOI: 10.3389/fcell.2020.588941.

[15] Jonathon M. Muncie, Nadia M.E. Ayad, Johnathon N. Lakins, Xufeng Xue, **Jianping Fu**, and Valerie M. Weaver*. Mechanical tension promotes formation of gastrulation-like nodes and patterns mesoderm specification in human embryonic stem cells. ***Developmental Cell***, vol. 55, pp. 679-694, 2020. DOI**:** 10.1101/2020.02.10.943076.

[16] Lydia L. Sohn, Petra Schwille, Andreas Hierlemann, Savas Tay, Josep Samitier, **Jianping Fu**, and Peter Loskill. How can microfluidic and microfabrication approaches make experiments more physiologically relevant? ***Cell Systems***, vol. 11, pp. 1-3, 2020. DOI: 10.1016/j.cels.2020.07.003.

[17] George A. Truskey* and **Jianping Fu***. The future of biomedical engineering - Bioengineering of organoids and tissue development. ***Current Opinion in Biomedical Engineering***, vol. 13, A1-A2, 2020. DOI: 10.1016/j.cobme.2020.07.002.

[18] Agnes M. Resto Irizarry, Sajedeh Nasr Esfahani, and **Jianping Fu***. Bioengineered pluripotent stem cell models: New approaches to explore early human embryo development. ***Current Opinion in Biotechnology***, vol. 66, pp. 52-58, 2020. DOI: 10.1016/j.copbio.2020.06.005.

[19] Qingsheng Guo, Yao Wang, Cang Chen, Dan Wei, **Jianping Fu**, Hong Xu*, and Hongchen Gu*. Multiplexed luminescence oxygen channeling immunoassay based on dual-functional barcodes with host-guest structure: A facile and robust suspension array platform. ***Small***, vol. 16, pp. 1907521, 2020. DOI: 10.1002/smll.201907521.

[20] Yue Shao*, and **Jianping Fu***. Synthetic human embryology: Towards a quantitative future. ***Current Opinion in Genetics and Development***, vo. 63, pp. 30-35, 2020. DOI: 10.1016/j.gde.2020.02.013.

[21] Xufeng Xue, Ryan P. Wang[&], and **Jianping Fu***. Modeling of human neurulation using bioengineered pluripotent stem cell culture. ***Current Opinion in Biomedical Engineering***, vol. 13, pp. 127-133, 2020. DOI: 10.1016/j.cobme.2020.02.002.

[22] Di Chen, Na Sun, Lei Hou, Rachel Kim, Jared Faith, Marianna Aslanyan, Yu Tao, Yi Zheng, **Jianping Fu**, Wanlu Liu, Manolis Kellis, and Amander Clark*. Human primordial germ cells are specified from lineage-primed progenitors. ***Cell Reports***, vol. 29, pp. 4568-4582, 2019. DOI: 10.1016/j.celrep.2019.11.083. PMCID: PMC6939677.

[23] Yuanyuan Zheng, Xufeng Xue, Agnes M. Resto Irizarry, Zida Li, Yue Shao, Yi Zheng, Gang Zhao*, and **Jianping Fu***. Dorsal-ventral patterned neural cyst from human pluripotent stem cells in a biomimetic neurogenic niche. ***Science Advances***, vol. 5, eaax5933, 2019. DOI: 10.1126/sciadv.aax5933.

[24] Yi Zheng, Xufeng Xue, Yue Shao, Sicong Wang, Sajedeh Nasr Esfahani, Zida Li, Jonathon M. Muncie, Johnathon N. Lakins, Valerie M. Weaver, Deborah L. Gumucio, and **Jianping Fu***. Controlled modeling of human epiblast and amnion development using stem cells. ***Nature***, vol. 573, pp. 421-425, 2019. DOI: 10.1038/s41586-019-1535-2.

- Commentary by Amander T. Clark, "*Human embryo implantation modelled in microfluidic channels*", ***Nature***, vol. 573, pp. 350-351, 2019. DOI: 10.1038/d41586-019-02563-y.
- *Nature News* by David Cyranoski, "*Embryo-like structures created from human stem cells*", ***Nature***, vol. 573, 2019.
- *National Public Radio* by Rob Stein, "*Scientists create a device that can mass-produce human embryoids*".
- *MIT Technology Review* by Antonio Regalado, "*Meet the "artificial embryos" being called uncanny and spectacular*".
- *BBC News*, "*Science in action: Embryoid from stem cells*".
- *Chemical & Engineering News* by Alla Katsnelson, "*Microfluidic device brews human embryo-like structures*".
- Also highlighted by *Washington Times*, *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*.

[25] Andrew Stephens, Robert Nidetz, Nicolas Mesyngier, Meng Ting Chung, Yujing Song, **Jianping Fu**, and Katsuo Kurabayashi*. Mass-producible microporous silicon membranes for specific leukocyte subset isolation, immunophenotyping, and personalized immunomodulatory drug screening *in vitro*. ***Lab on Chip***, vol. 19, pp. 3065-3076, 2019. DOI: 10.1039/c9lc00315k. PMCID: PubMed – in process.

[26] Sajedeh Nasr Esfahani[#], Yue Shao[#], Agnes M. Resto Irizarry, Zida Li, Xufeng Xue, Deborah L. Gumucio, and **Jianping Fu***. Microengineered human amniotic ectoderm tissue assay for high-content development phenotyping. ***Biomaterials***, vol. 216, 119244, 2019. DOI: 10.1016/j.biomaterials.2019.119244. PMCID: PubMed – in process.

[27] Abhay Kotnala, Yi Zheng, **Jianping Fu**, and Wei Cheng*. Back-focal-plane interferometric detection of nanoparticles in spatially confined microfluidic channels. ***Review of Scientific Instructments***, vol. 90, 023107, 2019. DOI: 10.1063/1.5074194. PMCID: PMC6382495.

[28] Feng Lin, Yue Shao, Xufeng Xue, Yi Zheng, Zida Li, Chunyang Xiong*, and **Jianping Fu***. Biophysical phenotypes and determinants of anterior *vs.* posterior primitive streak cells derived from human pluripotent stem cells. ***Acta Biomaterialia***, vol. 86, pp. 125-134, 2019. DOI: 10.1016/j.actbio.2019.01.017. PMCID: PubMed - in process.

[29] Weiqiang Chen, Steven G. Allen, Weiyi Qian, Zifeng Peng, Shuo Han[&], Xiang Li, Yubing Sun, Chelsea Fournier, Liwei Bao, Raymond H.W. Lam, Sofia D. Merajver*, and **Jianping Fu***. Biophysical phenotyping and modulation of ALDH+ inflammatory breast cancer stem-like cells. ***Small***, vol. 15, 1802891, 2019. DOI: 10.1002/smll.201802891. PMCID: PubMed - in process.

[30] Nicolas Rivron*, Martin Pera*, Janet Rossant, Alfonso Martinez Arias, Magdalena Zernicka-Goetz, **Jianping Fu**, Suzanne van den Brink, Annelien Bredenoord, Wybo Dondorp, Guido de Wert, Insoo Hyun, Megan Munsie, and Rosario Isasi. Debate ethics of embryo models from stem cells. ***Nature***, vol. 564, pp. 183-185, 2018. DOI: 10.1038/d41586-018-07663-9. (Commentary)

[31] Zhenzhen Fan, Xufeng Xue, Al Christopher De Leon, Agata Exner, **Jianping Fu***, and Cheri X. Deng*. Acoustic actuation of integrin-bound microbubbles for mechanical phenotyping during differentiation and morphogenesis of human embryonic stem cells. ***Small***, vol. 14, 1803137, 2018. DOI: 10.1002/smll.201803137. PMCID: PubMed - in process.

[32] Xiaozhang Zhang, Gang Zhao*, Yuan Cao, Zeeshan Haider, Meng Wang, and **Jianping Fu***. Magnetothermal heating facilitates cryogenic recovery of stem cell-laden alginate-Fe_3O_4 nanocomposite hydrogel. ***Biomaterials Science***, vol. 6, pp. 3139-3151, 2018. DOI: 10.1039/C8BM01004H. PMCID: PubMed - in process.

- Selected as the front cover page story by ***Biomaterials Science***.

[33] 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***, vol. 181, pp. 280-292, 2018. DOI: 10.1016/j.biomaterials.2018.07.036. PMCID: PMC6119647.

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F. REFEREED BOOK CHAPTERS

(*Corresponding author; [#]Equal contribution; [&]Undergraduate co-author; Underline: Graduate / postdoc advisees at UM)

[1] Yubing Sun, Yue Shao, Xufeng Xue, and **Jianping Fu***. Emerging roles of YAP/TAZ in mechanobiology. ***Molecular and Cellular Mechanobiology*** (edited by Shu Chien, Adam J. Engler, and Yingxiao Wang), Springer Science, 2015.

[2] Yue Shao, Shinuo Weng, and **Jianping Fu***. Stretchable micropost array cytometry: A powerful tool for cell mechanics and mechanobiology research. ***Integrative Mechanobiology: Micro and Nano Techniques in Cell Mechanobiology*** (edited by Yu Sun, Craig Simmons, and Deok-Ho Kim), Cambridge University Press, 2014.

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[7] Pan Mao, and **Jianping Fu***. Nanofluidic devices for bioseparation. ***Nanoproteomics: Methods and Protocols*** (edited by Steven A. Toms and Robert J. Weil), Methods in Molecular Biology, vol. 790, pp. 127-140, 2011. (book chapter)

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[9] Chaoguang Lin, Peng Hu, Zeshao Chen*, Wenlong Chen, and **Jianping Fu**. Numerical simulation and experiment research on flow characteristics of capillary in refrigerator. ***Heat Transfer Science and Technology*** (edited by Buxuan Wang), pp.555-562, Higher Education Press of China, 2000.

G. REFEREED CONFERENCE PROCEEDINGS

(*Corresponding author; [#]Equal contribution; [&]Undergraduate co-author; Underline: Graduate / postdoc advisees at UM)

[1] Xufeng Xue, Yubing Sun, Agnes M. Resto Irizarry, Koh Meng Aw Yong, Yi Zheng, Shinuo Weng, Yue Shao, and **Jianping Fu***. Mechanics-guided emergent patterning of neuroectoderm tissue using human pluripotent stem cells. *Proc. 21st International Conference on Miniaturized Systems for Chemistry and Life Sciences* (*μTAS 2017*), Savannah, Georgia, Oct. 2017, pp. 1151-1153.

[2] Zida Li, Xufeng Xue, David Peyer[&], Brendan McCracken, Kevin Ward, and **Jianping Fu***. Capillary-facilitated coating of carbon nanotube thin film for a strain gauge for blood retraction test. *Proc. 21st International Conference on Miniaturized Systems for Chemistry and Life Sciences* (*μTAS 2017*), Savannah, Georgia, Oct. 2017, pp. 1015-1017.

[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 from human pluripotent stem cells in an engineered biomimetic niche. *Proc. 21st International Conference on Miniaturized Systems for Chemistry and Life Sciences* (*μTAS 2017*), Savannah, Georgia, Oct. 2017, pp. 888-890.

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[7] Weiqiang Chen, Shinuo Weng, and **Jianping Fu***. Nanotopographic surface for efficient capture of circulating tumor cells. Paper Number NEMB2013-93187. *Proc. 2013 ASME Global Congress on Nano Engineering for Medicine and Biology* (*NEMB2013*), Feb. 2013, Boston, MA, USA. ("Outstanding Paper Award" from the conference)

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[9] Yue Shao, Jennifer M. Mann, and **Jianping Fu***. Spatiotemporally coordinated cellular contractile force response under uniaxial substrate stretch. Paper Number NEMB2013-93194. *Proc. 2013 ASME Global Congress on Nano Engineering for Medicine and Biology* (*NEMB2013*), Feb. 2013, Boston, MA, USA. ("Outstanding Paper Award" from the conference)

[10] Yubing Sun, Luis G. Villa-Diaz, Raymond Hiu-Wai Lam, Weiqiang Chen, Paul H. Krebsbach, and **Jianping Fu***. Micromechanical elastomeric devices for investigations of mechanobiology in human embryonic stem cells. *Proc. 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences* (*μTAS 2012*), Okinawa, Japan, Oct. 2012, pp. 1714-1716.

[11] Weiqiang Chen, Nien-Tsu Huang, Katsuo Kurabayashi, and **Jianping Fu***. Surface micromachining of polydimethylsiloxane (PDMS) for microfluidic biomedical applications. *Proc. 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences* (*μTAS 2012*), Okinawa, Japan, Oct. 2012, pp. 1849-1851.

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[14] Shinuo Weng, and **Jianping Fu***. Synergistic regulation of cell functions by matrix rigidity and adhesive pattern using an elastomeric micropost array system. *Proc. 15th International Conference on Miniaturized Systems for Chemistry and Life Sciences* (*μTAS 2011*), Seattle, USA, Oct. 2011, pp. 157-159.

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[22] **Jianping Fu**, and Jongyoon Han*. A nanofilter array chip for fast gel-free biomolecule separation. *Proc. 9th International Conference on Miniaturized Systems for Chemistry and Life Sciences* (*μTAS 2005*), Boston, Massachusetts USA, Oct. 2005, pp. 1531-1533.

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[24] Jongyoon Han*, and **Jianping Fu**. Biomolecule Separation by steric hindrance using nanofluidic filters. *Proc. 26th IEEE-EMBS conference*, San Francisco, California USA, Sept. 2004, pp. 2611-2614.

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[26] **Jianping Fu,** Ronggui Yang, Gang Chen*, Jean Pierre Fleurial, and Jeffrey G. Snyder. Integrated electroplated heat spreader for high power semiconductor laser. *Proc. 6th ASME-JSME Thermal Engineering Joint Conference*, Hawaii Island, Hawaii USA, March 2003, pp. 332-337.

H. INVITED SEMINARS AND LECTURES

(*Keynote speaker; [&]Upcoming speaking engagements)

2021

[1] "Embryo models: Where we are and where we are heading", Harvard Annual Bioethics Conference, June 2021. (virtual seminar)

[2] "Bottom-up synthetic human embryology", U-M Monthly Human Pluripotent Stem Cell Group Meetings, June 2021. (virtual seminar)

[3] "Establishing experimental standards of quality and reproducibility for embryo models", Workshop on Multicellular Engineered Living Systems (M-CELS), June 2021. (virtual seminar)

[4] "Establishing experimental standards of quality and reproducibility for embryo models", ISSCR Digital Meeting Series: Stem Cell-Based Embryo Models, May 2021. (virtual seminar)

[5] "Human embryonic-like structures: How far is the science?", 37th Annual Meeting of the European Society of Human Reproduction and Embryology, May 2021. (virtual seminar)

[6] "Bottom-up synthetic human embryology", Biophysics and Mechanobiology Seminar Series, April 2021. (virtual seminar)

[7] "Bottom-up synthetic human embryology", Molecular Biology Seminar Series, University of Texas Southwestern Medical Center, April 2021. (virtual seminar)

[8] "Bottom-up synthetic human embryology", Biomaterials Institute, Syracuse University, March 2021. (virtual seminar)

[9] "Stem cell-based models of early human nervous system development", MODDULO (Models of Human Disease and Development) Seminar Series, Feb. 2021. (virtual seminar)

[10] "Bottom-up synthetic human embryology", Alternative Methods Working Group (AMWG), U.S. Food and Drug Administration, Jan. 2021. (virtual seminar)

2020

[11] "Bottom-up synthetic embryology for understanding human development", System1 Biosciences, Dec. 2020. (virtual seminar)

[12] "Bottom-up synthetic embryology for understanding human development", 2020 Materials Research Society (MRS) Fall Meeting & Exhibit, Symposium F.SM06 - Biofabrication for Emulating Biological Tissues, Dec. 2020. (virtual seminar)

[13] "Bottom-up synthetic embryology for understanding human development", Division of Developmental Biology, Chinese Society for Cell Biology (CSCB), Nov. 2020. (virtual seminar)

[14] "Bottom-up synthetic embryology for understanding human development", *Scientific & Ethical Frontiers in Understanding Human Development*, Penn Institute for Regenerative Medicine, Nov. 2020. (virtual seminar)

[15] "Bottom-up synthetic embryology for understanding human development", Center for Computational Toxicology and Exposure, U.S. Environmental Protection Agency (EPA), Oct. 2020. (virtual seminar)

[16] "Bottom-up synthetic embryology for understanding human development", Institute for Cell Engineering, Johns Hopkins University School of Medicine, Oct. 2020. (virtual seminar)

[17] "Bottom-up synthetic embryology for understanding human development", Department of Bioengineering, University of California, Berkeley, Oct. 2020. (virtual seminar)

[18] "Bottom-up synthetic embryology for understanding human development", Bioengineering Highlight Seminar, Princeton University, Oct. 2020. (virtual seminar)

[19] "Building synthetic human embryo-like structures", 24th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2020), Oct. 2020. (virtual seminar)

[20] "Building synthetic human embryo-like structures", Division of Drug Safety Research & Development, Pfizer, Oct. 2020. (virtual seminar)

[21] "Synthetic human embryo-like structures: A new paradigm for human embryology", From Stem Cells to Human Development, Workshop by the journal Development and funded by the Company of Biologists, London, UK, Sept. 2020. (virtual seminar)

[22] "Stem cell-derived models of peri-implantation human development and early neural system development", Vertebrate Gastrulation Zoom Talks (VGZT) Series, Aug. 2020. (virtual seminar)

[23] "Synthetic human embryo-like structures: A new paradigm for human embryology", Webinar, Stem Cells @ Lunch Seminar Series, Centre for Stem Cells and Regenerative Medicine, King's College London, June 2020. (virtual seminar)

[24] "Building synthetic human embryo-like structures", Systems Biology Theory Lunch, Department of Systems Biology, Harvard Medical School, Boston, MA, Feb. 2020.

[25] "Stem cell models of peri-implantation human development", Harvard Ethical Frontiers Lecture, Harvard Medical School, Boston, MA, Feb. 2020.

[26] "Controlled modeling of human epiblast and amnion development using stem cells", Examining the State of the Science of Mammalian Embryo Model Systems – A Workshop, National Academies of Sciences, Engineering, and Medicine, Washington, DC, Jan. 2020.

[27] "Synthetic human embryo-like structures: A new paradigm for human embryology", 2020 Biomedical Engineering Society (BMES) Cellular and Molecular Bioengineering (CMBE) Conference, Puerto Rico, Jan. 2020.

2019

[28] "Synthetic human embryo-like structures: A new paradigm for human embryology", 7th International Conference on Stem Cell Engineering (Stem Cell Engineering 2019): From Organoids to Synthetic Embryo: Tools, Technologies, and Novel Applications, Barcelona, Spain, Dec. 2019.

[29] "Synthetic human embryo-like structures: A new paradigm for human embryology", Department of Biomedical Engineering, Duke University, Durham, NC, Nov. 2019.

[30] "Synthetic human embryo-like structures: A new paradigm for human embryology", International Workshop on "Engineering and Manufacture of Living Systems", Tsinghua University, Beijing, China, Oct. 2019.

[31] "Synthetic human embryo-like structures: A new paradigm for human embryology", Massachusetts General Hospital, Center for Cancer Research, Boston, Sept. 2019.

[32] "Synthetic human embryo-like structures: A new paradigm for human embryology", Department of Biomedical Engineering, Columbia University, New York, Sept. 2019.

[33] "Synthetic human embryo-like structures: A new paradigm for human embryology", the National Center of Competence in Research Bio-Inspired Materials, Charmey, Switzerland, Sept. 2019.

[34] "Synthetic human embryo-like structures: A new paradigm for human embryology", Institute of Bioengineering, École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland, Sept. 2019.

[35] "Synthetic human embryo-like structures: A new paradigm for human embryology", 7th Sino-American Workshop on Biomedical Engineering and Biomechanics, Chongqing, China, July 2019.

[36] "Microfluidics for studying complex systems: Organoids-on-a-chip", Discussion leader, Gordon Research Conference (GRC) on Physics and Chemistry of Microfluidics, June 2019.

[37] "Why research on early human development using stem cell-derived models is important", International Society for Stem Cell Research (ISSCR) 2019 Annual Meeting, Ethics Committee Focus Session, Los Angeles, June 2019.

[38] "Synthetic human embryo-like structures: A new paradigm for human embryology", George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, May 2019.

[39] "Synthetic human embryo-like structures: A new paradigm for human embryology", Gordon Research Conference (GRC) on Germinal Stem Cell Biology, Hong Kong, May 2019.

[40] "Synthetic human embryo-like structures: A new paradigm for human embryology", Department of Biological Engineering, Massachusetts Institute of Technology, Boston, MA, April 2019.

[41] "Exploring mechanobiology of human pluripotent stem cells for regenerative medicine and disease modeling", Department of Mechanical Engineering, Massachusetts Institute of Technology, Boston, MA, April 2019.

[42] "Synthetic human embryo-like structures: A new paradigm for human embryology", RIKEN Center for Biosystems Dynamics Research (BDR) Symposium 2019 "Control and Design of Biosystems", Kobe, Japan, March 2019.

[43] "Synthetic human embryo-like structures: A new paradigm for human embryology", Stem Cell Institute, University of Minnesota, Minneapolis, MN, Feb. 2019.

[44] "Synthetic human embryo-like structures: A new paradigm for human embryology", 2019 Annual BMES Cell and Molecular Bioengineering (CMBE) Conference, San Diego, CA, Jan. 2019.

2018

[45] "Synthetic human embryo-like structures: A new paradigm for human embryology", Memorial Sloan Kettering Cancer Center, Developmental Biology Program, New York, Nov. 2018.

[46] "Synthetic human embryo-like structures: A new paradigm for human embryology", 2018 Materials Research Society (MRS) Fall Meeting & Exhibit, Symposium for Advanced Manufacturing Technologies for Emulating Biological Tissues, Boston, Nov. 2018.

[47] "Synthetic human embryo-like structures: A new paradigm for human embryology", Department of Biosciences, Rice University, Houston, TX, Nov. 2018.

[48] "Synthetic human embryo-like structures: A new paradigm for human embryology", Department of Mechanical Engineering, Steven Institute of Technology, New York, Oct. 2018.

[49] "Synthetic human embryo-like structures: Where from here?", Department of Genetics, University of Cambridge, Cambridge, England, Sept. 2018.

[50] "Programmable microfluidic synthesis of human embryo-like structures", Engineering Multicellular Self-Organization III, Cambridge, England, Sept. 2018.

[51] "Synthetic human embryo-like structures: A new paradigm for human embryology", Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, IL, Aug. 2018.

[52] "Synthetic human embryo-like structures: A new paradigm for human embryology", 2018 Annual BMES Advanced Biomanufacturing (ABioM) Conference, Worcester Polytechnic Institute, Boston, MA, Aug. 2018.

[53] "Synthetic human embryo-like structures: A new paradigm for human embryology", 2018 Michigan China Biomedical Forum, Ypsilanti, MI, Aug. 2018.

[54] "Synthetic human embryo-like structures", the Second Workshop on Engineered Living Systems, NSF STC: Emergent Behavior of Integrated Cellular Systems (EBICS), Chicago, IL, Aug. 2018.

[55] "Modeling human embryogenesis in a dish", 8th World Congress of Biomechanics, Symposium: Biomechanical microengineering of tissue mimics for human disease modeling, Dublin, Ireland, July 2018.

[56] "Modeling human embryogenesis in a dish", Tsinghua University – Peking University Center for Life Sciences, Peking, China, July 2018.

[57] "Modeling human embryogenesis in a dish", School of Biomedical Science and Engineering, South China University of Technology, Guangzhou, China, June 2018.

[58] "Synthetic human embryology", 2018 International Conference of Biomedical Information Perception & Microsystems, Chengdu, China, June 2018.

[59] "Synthetic human embryology", Yale Stem Cell Center, Yale School of Medicine, Yale University, CT, May 2018.

[60] "Synthetic human embryology in a dish", Department of Biomedical Engineering, Northeastern University, Boston, MA, May 2018.

[61] "Synthetic human embryology in a dish", Department of Bioengineering, University of California, San Diego, CA, April 2018.

[62] "Synthetic human embryology in a dish", Department of Biomedical Engineering, University of California, Los Angeles, CA, April 2018.

[63] "Synthetic human embryology in a dish", Department of Mechanical Engineering, Stanford University, CA, March 2018.

[64] "Synthetic human embryology", Microtechnologies in Medicine and Biology (MMB 2018), Monterey, CA, March 2018.

[65] "Synthetic human embryology in a dish", Quantitative Biology Seminar, University of Michigan, Ann Arbor, Feb. 2018.

[66] "Synthetic human embryology in a dish", Institute for NanoBioTechnology (INBT), Johns Hopkins University, Baltimore, Maryland, Feb. 2018.

[67] "Synthetic human embryology in a dish", the Parker H. Petit Institute for Bioengineering and Bioscience and the Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, Jan. 2018.

[68] "Synthetic human embryology in a dish", Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, Canada, Jan. 2018.

2017

[69] "Modeling human embryogenesis in a dish", 2017 Tissue Engineering & Regenerative Medicine International Society (TERMIS) - America (AM) Meeting, Charlotte, NC, Dec. 2017.

[70] "Synthetic human embryology", Department of Chemistry, University at Albany, SUNY, Nov. 2017.

[71] "Synthetic human embryoids in a dish", MacroBio Summer School, the Institute of Biomaterial Science, the Helmholtz-Zentrum Geesthacht, Berlin, Germany, Sept. 2017.

[72] "Modeling human embryogenesis in a dish", Department of Biomedical Engineering, the Chinese University of Hong Kong, Hong Kong, China, Aug. 2017.

[73] "Modeling human embryogenesis in a dish", 8th WACBE World Congress on Bioengineering, Hong Kong, China, Aug. 2017.

[74] "Modeling human embryogenesis in a dish", SUSTech Biomedical Engineering Summit, Southern University of Science and Technology, Shenzhen, China, July 2017.

[75] "Synthetic human embryoids in a dish", Institute of Biomechanics and Medical Engineering, Department of Engineering Mechanics, Tsinghua University, Beijing, China, July 2017.

[76] "Synthetic human embryoids in a dish", Med-X Research Institute, School of Biomedical Engineering, Shanghai Jiao Tong University, Shanghai, China, July 2017.

[77] "Synthetic human embryoids in a dish", International Symposium of Biomedical Micro/nanotechnology, University of Science and Technology of China, Hefei, China, July 2017.

[78] "Mechanobiology, pluripotent stem cells, and early embryonic development", 2017 Physics and Chemistry of Microfluidics Gordon Research Conference, Lucca (Barga), Italy, June 2017.

[79] "Mechanobiology, pluripotent stem cells, and early embryonic development", 2017 Materials Research Society (MRS) Spring Meeting, Symposium NM10: Micro/nano Assembling, Manufacturing, and Manipulation for Biomolecular and Cellular Applications, Phoenix, AZ, April 2017.

[80] "Mechanobiology, pluripotent stem cells, and early embryonic development", Department of Chemistry, Oakland University, March 2017.

[81] "Mechanobiology, pluripotent stem cells, and early embryonic development", Rockefeller University, New York, Feb. 2017.

[82] "Mechanobiology, pluripotent stem cells, and early embryonic development", 4th Annual University of Science and Technology of China 9108 Science Symposium, Ann Arbor, Feb. 2017.

[83] "Mechanobiology, pluripotent stem cells, and early embryonic development", BME500 Seminar Series, Department of Biomedical Engineering, University of Michigan, Ann Arbor, Jan. 2017.

[84] "Mechanobiology, pluripotent stem cells, and early embryonic development", Biomedical Engineering Society Cellular and Molecular Bioengineering Annual Conference, Big Island, Hawaii, Jan. 2017.

2016

[85] "Mechanobiology, pluripotent stem cells, and early embryonic development", Department of Biomedical Engineering, Duke University, Dec. 2016.

[86] "Mechanobiology, pluripotent stem cells, and early embryonic development", Department of Biomedical Engineering, North Carolina State University & University of North Carolina - Chapel Hill, Nov. 2016.

[87] "Mechanobiology, pluripotent stem cells, and early embryonic development", Department of Biomedical Engineering, City University of New York, Sept. 2016.

[88] "Mechanobiology, pluripotent stem cells, and early embryonic development", 6th Sino-American Workshop on Biomedical Engineering and China-Oversea Joint Workshop on Biomechanics, Shanghai, China, Aug. 2016.

[89] "Mechanical control and modeling of human pluripotent stem cells", 2016 International Forum of Biomedical Materials: Biomaterials Interfaces and Nanobiomaterials, Hangzhou, China, Aug. 2016.

[90] "Mechanical control and modeling of human pluripotent stem cells", Department of Computational Medicine & Bioinformatics, University of Michigan, Ann Arbor, April 2016.

[91] "Micro/nanoengineering tools for stem cell mechanobiology", Center for Wireless Integrated MicroSensing & Systems (WIMS^2) Seminar, University of Michigan, Ann Arbor, March 2016.

[92] "Mechanical control and modeling of human pluripotent stem cells", Department of Mechanical Engineering, Johns Hopkins University, March 2016.

2015

[93] "Mechanobiology: A new frontier for human pluripotent stem cells", Department of Biomedical Engineering, Ohio State University, Nov. 2015.

[94] "Mechanobiology: A new frontier for human pluripotent stem cells", Department of Mechanical and Biomedical Engineering, Pennsylvania State University, Oct. 2015.

[95] "Micro/nanoengineering tools for stem cell mechanobiology", MicRO Alliance Meeting, University of Freiburg, Sept. 2015.

[96] "Mechanobiology: A new frontier for human pluripotent stem cells", School of Biological Science and Medical Engineering, Beihang University, July 2015.

[97] "Micro/nanoengineering for medicine: Examples of stem cell mechanobiology and systems immunophenotyping", Kunming University of Science and Technology, July 2015.

[98] "Mechanobiology: A new frontier for human pluripotent stem cells", Department of Mechanical and Biomedical Engineering, City University of Hong Kong, July 2015.

[99] "Micro/nanoengineering for medicine: Examples of stem cell mechanobiology and systems immunophenotyping", Nanyang Institute of Technology in Health and Medicine (NITHM), Therapeutic Medical Devices Seminar Series, July 2015.

[100] "Mechanobiology: A new frontier for human pluripotent stem cells", 7th WACBE World Congress on Bioengineering, Singapore, July 2015.

[101] "Mechanobiology: A new frontier for human pluripotent stem cells", Department of Cell and Developmental Biology, University of Michigan, June 2015.

[102] "Mechanobiology: A new frontier for human pluripotent stem cells", Bioengineering and Stem Cell Research Symposium, Rensselaer Center for Stem Cell Research, Rensselaer Polytechnic Institute, June 2015.

[103] "Mechanobiology: A new frontier for human pluripotent stem cells", University of Michigan Biophysics Symposium, April 2015.

[104] "Nanoroughened surfaces for efficient capture of circulating tumor cells without using capture antibodies", 5th Annual Circulating Tumor Cells and Cell-Free DNA Conference, San Francisco, Feb. 2015.

[105] "Hippo/YAP-mediated rigidity-dependent motor neuron differentiation of human pluripotent stem cells", Nephrology Basic Science Seminar, University of Michigan, Ann Arbor, Jan. 2015.

2014

[106] "Micro/nanoengineering for medicine: Examples of stem cell mechanobiology and systems immunophenotyping", Institute for Nanoscience and Quantum Engineering, Yale University, Dec. 2014.

[107] "Synthetic polymeric structures for mechanobiology studies of human pluripotent stem cells", 2014 Materials Research Society (MRS) Fall Meeting, Symposium B: Multifunctional Polymeric and Hybrid Materials, Boston, Nov. 2014.

[108] "Mechanobiology: A new frontier for human pluripotent stem cells", Department of Mechanical Engineering, Vanderbilt University, Oct. 2014.

[109] "Mechanobiology: A new frontier for human pluripotent stem cells", Department of Mechanical Engineering, University of Colorado at Boulder, Oct. 2014.

[110] "Synthetic micromechanical tools for mechanobiology studies of human pluripotent stem cells", 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), "Cellular BioMEMS" Mini-Symposium, Chicago, Aug. 2014.

[111] "Mechanobiology: A new frontier for human pluripotent stem cells", Med-X Research Institute, Shanghai Jiao Tong University, Shanghai, China, July, 2014.

[112] "Acoustic tweezing cytometry for mechanobiology applications and our effort of using nanoroughened surfaces for efficient capture of circulating tumor cells", School of Information Science and Technology, Institute of Biomedical Engineering, University of Science & Technology of China, Hefei, China, July 2014.

[113] "Biophysical Regulation of Functional Motor Neuron Generation from Human Pluripotent Stem Cells", 7th World Congress of Biomechanics, Symposium: Response of Cells to Mechanical Cues, Boston, July 2014.

[114] "Hippo-YAP signaling and its functional regulation of mechanosensitive behaviors of human pluripotent stem cells", 7th World Congress of Biomechanics, Symposium: Stem Cell Mechanics, Boston, July 2014.

[115] "Hippo/YAP-mediated rigidity-dependent functional motor neuron differentiation of human pluripotent stem cells", Gordon Research Conference: Signal Transduction by Engineered Extracellular Matrices, Waltham, MA, July 2014.

[116] "Synthetic micromechanical tools for mechanobiology, stem cell culture, and functional immunophenotyping", Department of Mechanical Engineering, Stanford University, April 2014.

[117] "Synthetic micromechanical tools for functional immunophenotyping and engineering human pluripotent stem cell fate", 2014 Materials Research Society (MRS) Spring Meeting, Symposium V: Micro- and Nanofluidic Systems for Materials Synthesis, Device Assembly, and Bioanalysis, San Francisco, April 2014.

[118] "Synthetic micromechanical tools for mechanobiology and stem cell culture", 2nd Nagoya University - University of Michigan JUACEP Faculty Workshop on Engineering, Nagoya, Japan, March 2014.

[119] "Synthetic micromechanical tools for mechanobiology and stem cell culture", Department of Bioengineering, University of Tokyo, Tokyo, Japan, March 2014.

[120] "Synthetic micromechanical tools for mechanobiology and stem cell culture", International Symposium on Advanced Manufacturing Science for Future Systems, University of Tokyo, Tokyo, Japan, March 2014.

[121] "Synthetic micromechanical tools for mechanobiology, stem cell culture, and functional immunophenotyping", Department of Mechanical Engineering, Johns Hopkins University, March 2014.

2013

[122] "Biophysical regulation of functional motor neuron derivation from human pluripotent stem cells", School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore, Dec. 2013.

[123] "Biophysical regulation of functional motor neuron derivation from human pluripotent stem cells", Mechanobiology Institute, National University of Singapore, Singapore, Dec. 2013.

[124] "Integrated microfluidics for cellular functional immunophenotyping", 15th International Conference on BioMedical Engineering (ICBME), Symposium: Micro and Nanofluidics for Biomedical Applications, Singapore, Dec. 2013.

[125] "Mechanobiology: A new frontier for human pluripotent stem cells", School of Stomatology, Jilin University, Changchun, Jilin, China, Aug. 2013.

[126] "Mechanobiology: A new frontier for human pluripotent stem cells", National Center for NanoScience and Technology of China (NCNST), Beijing, China, Aug. 2013.

[127] "Synthetic micro/nanoengineered tools to study mechanobiology and its regulatory role in human pluripotent stem cells (hPSCs)", 2013 IEEE International Conference on Nanotechnology, Beijing, China, Aug. 2013.

[128] "Mechanobiology: A new frontier for human pluripotent stem cells", 5th Sino-American Workshop on Biomedical Engineering and China-Oversea Joint Workshop on Biomechanics, Beijing, China, Aug. 2013.

[129] "Mechanobiology: A new frontier for human pluripotent stem cells", School of Information Science and Technology, Institute of Biomedical Engineering, University of Science & Technology of China, Hefei, China, June 2013.

[130] "Synthetic micromechanics tools for mechanobiology, stem cell culture, and functional immunophenotyping", University of Texas at Austin, Center for Nano- and Molecular Science, April 2013.

[131] "Synthetic micro/nanoengineering tools for stem cell culture, functional immunophenotyping, and capture of circulating tumor cells", Massachusetts Institute of Technology, Department of Mechanical Engineering, Feb. 2013.

[132] "Tutorial: Micro/nanoengineering tools for mechanobiology, stem cell culture, and functional immunophenotyping", 2013 ASME Global Congress on Nano Engineering for Medicine and Biology (NEMB2013), Boston, MA, Feb. 2013.

2012

[133] "Micromechanics tools for mechanobiology, stem cell culture, and systems immunology", 6th IEEE International Conference on Nano/Molecular Medicine and Engineering (IEEE-NANOMED 2012) conference, Bangkok, Thailand, Nov. 2012.

[134] "Synthetic micromechanical systems for stem cell research and cellular functional immune assays", Med-X Research Institute, Shanghai Jiao Tong University, Shanghai, China, May 8, 2012.

[135] "Synthetic micromechanical systems for biomolecule analysis, stem cell research, and cellular functional immune assays", Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Science, Shanghai, China, May 8, 2012.

[136] "Synthetic micromechanical systems for biomolecule analysis, stem cell research, and cellular functional immune assays", School of Information Science and Technology, Institute of Biomedical Engineering, University of Science & Technology of China, Hefei, China, May 3, 2012.

2011

[137] "Synthetic micromechanical systems for mechanobiology research", 8th International Symposium on Organogenesis and Tissue Engineering, Center for Organogenesis, University of Michigan, May 14, 2011.

[138] "Synthetic micromechanical systems for mechanobiology research", 1st SJTU-UMich Bilateral Symposium on Biomedical Engineering (BSBE), Shanghai, China, Jan. 24-25, 2011.

2010

[139] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Department of Mechanical Engineering, Division of Bioengineering, National University of Singapore, Singapore, Oct. 5, 2010.

[140] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Microelectromechanical Systems (MEMS) Center, Institute of Microelectronics, Peking University, Beijing, China, Sept. 9, 2010.

[141] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, Sept. 9, 2010.

[142] "Mechanical regulation of stem cell differentiation on geometrically modulated elastomeric substrates", 6th World Congress on Biomechanics 2010 (WCB 2010), Singapore, August 1-6, 2010.

[143] "Mechanical Regulation of Stem Cell Differentiation on Geometrically Modulated Elastomeric Substrates", 2010 ASME Summer Bioengineering Conference, Naples, Florida, June 16-19, 2010.

[144] "Nanofluidic Devices for Rapid Analysis of DNA and Proteins", 1st ASME Global Congress on NanoEngineering for Medicine and Biology, Houston, Texas, Feb. 7-10, 2010.

[145] "Mechanical Regulation of Stem Cell Differentiation on Geometrically Modulated Elastomeric Substrates", 1st ASME Global Congress on NanoEngineering for Medicine and Biology, Houston, Texas, Feb. 7-10, 2010.

2006 - 2009

[146] "Electric field driven partitioning of biomolecules in confining nanofluidic structures", University of Pennsylvania, NSF Soft Matter-Materials Research Science and Engineering Center (NSF-MRSEC) Chalk Talk, May 15th, 2009.

[147] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Cornell University, Sibley School of Mechanical and Aerospace Engineering, April 2009.

[148] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", California Institute of Technology, Department of Electrical Engineering, Mixed-Signal, RF, and Microwave Seminar, April 2009.

[149] "Microengineered extracellular matrix directs stem cell differentiation", 237th American Chemical Society National Meeting and Exposition, Salt Lake City, Utah, March 2009.

[150] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Illinois Institute of Technology, Department of Mechanical, Materials, and Aerospace Engineering, March 2009.

[151] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Drexel University, Department of Mechanical Engineering and Mechanics, March 2009.

[152] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Washington University at St. Louis, Department of Mechanical, Aerospace, and Structural Engineering, Feb. 2009.

[153] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", University of Florida, Department of Mechanical and Aerospace Engineering, Feb. 2009.

[154] "Synthetic micro/nanosystems for rapid biomolecule analysis and stem cell research", Lehigh University, Bioengineering Program and Department of Mechanical Engineering and Mechanics, Jan. 2009.

[155] "Nanofluidic devices for rapid analysis of DNA and proteins", IEEE Lasers and Electro-Optics Society (LEOS) Summer Topical Meeting, Portland, Oregon, July 2007.

[156] "Nanofluidic devices for rapid analysis of DNA and proteins", Living MicroSystems Inc., Boston, MA, May 2007.

[157] "Nanofluidic devices for rapid analysis of DNA and proteins", MIT Senturia Prize Lecture, MIT Micro/Nano-technology Seminar Series (MNSS), May 2007.

[158] "Nanofluidic devices for rapid biomolecule analysis", University of Illinois at Urbana-Champaign, Department of Mechanical Science and Engineering, April 2007.

[159] "Nanofluidic devices for rapid biomolecule analysis", University of Washington, Department of Mechanical Engineering, March 2007.

[160] "Nanofluidic devices for rapid biomolecule analysis", University of California at San Diego, Department of Electrical and Computer Engineering, March 2007.

[161] "Nanofluidic devices for rapid biomolecule analysis", University of Pennsylvania, Department of Mechanical Engineering and Applied Mechanics, Feb. 2007.

[162] "Nanofluidic devices for rapid biomolecule analysis", Microfluidics Technology Fair by Massachusetts Technology Transfer Center, Northeastern University, Egan Center, Oct. 2006.

[163] "Nanofluidic devices for rapid biomolecule analysis", MIT Program in Polymer Science and Technology (PPST), New Frontiers in Polymer Research and Education, Sept. 2006.