Huanan (Frederick) Shi

1699 Hermann Dr, Houston, TX 77004

 (+1) 617-378-5675 | fred.hn.shi@gmail.com | huananfshi.github.io | huananfshi

Education

Baylor College of Medicine
Ph.D. in Molecular Physiology and Biophysics

Houston, TX
2016 - Expected in 2022

- Research: Understanding the gut microbiota and host interaction in the development of hypertension using integrated traditional experimental methods and AI (artificial intelligence).
- 2 co-author papers (including one co-first author paper); 5 international and multiple regional poster presentations; 2 travel or poster awards.
- Assisted peer-review process for papers from Hypertension and Gut Microbes, and NIH grant applications.
- Facilitated compassionate conversations within department and with school leadership for racial justices, international student rights, and increased Asian hatred during coronavirus pandemics
- Elected as program representative at Graduate Student Council (2021-2022).
- Related coursework: Ethics & Conduct of Clinical Research; Life Science Entrepreneurship (Rice University, audit); Intellectual Property law.

Yale Interdisciplinary Center for Bioethics
Summer Institute in Bioethics

New Haven, CT (remote)
Summer, 2021

- Foundation lectures in Bioethics with overview of bioethical theories and history and most pressing global challenges in bioethics.
- Seminars in Bioethics with focuses on law, social justice, and policy analysis.

Renmin University of China
B.S. in Physics, GPA: 3.32/4.0

Beijing, China
2012 - 2016

- Honors: Honorable Mention (2015) - COMAP Mathematical Contest in Modeling; Second Prize in Province (2014) - China Undergraduate Mathematical Contest in Modeling.
- Facilitated and developed multiple volunteer programs with Renmin University of China, Beijing You'an Hospital, and China AIDS Walk to promote AIDS awareness.
- Served as peer education host for freshmen sexual education workshops.

University of California, Berkeley
Summer Session

Berkeley, CA
Summer, 2014

- Coursework: Introduction to Biostatistics (PB HLTH 141); Introduction to Financial Accounting (UGBA 102A).

Experience

Enventure
VICE investment competition (approx. 50 hours total)

Houston, TX
2021

- Worked with an interdisciplinary team of PhD candidates, MBA candidate, and biomedical engineer.
- Performed due diligence for three pre-seed and seed round startups.
- Constructed deal memos and provided preliminary investment recommendations for venture capitalists.

Boston Children's Hospital/Yale School of Medicine
Research Assistant (full-time)

Boston, MA/New Haven, CT
2015 - 2016

- Performed general lab setup and management; data analysis and visualization; reproductive physiology experiments; and super-resolution and confocal microscopy imaging.
- 2 co-author papers in eLife.

Skills

Programming	Python, R, MATLAB, LINUX (HPC cluster), Shell, SQL, Bioinformatics
Machine Learning	Supervised & Unsupervised Learning (Regression, Dimensional Deduction, Clustering & Classification)

Leadership

American Society for Microbiology - Texas Medical Center Chapter   *Houston, TX*
Co-Chair of MicroCast, Media Relations, and Social (approx. 5 hours per week)   *2020-2021*
- Coordinated and co-hosted multiple COVID-19 seminars with more than 300 attendances to promote science communication.
- Organized online leadership orientation.
- Facilitated career development events for the students and postdocs.

Spectrum, a LGBTQ+ student group at BCM   *Houston, TX*
Co-founder (approx. 10 hours per week)   *2017-2019*
- Organized launch event and participation of multi-cultural showcase at BCM.
- Coordinated the collaboration with local LGBTQ+ youth organization at Montrose Center to promote careers in STEM for LGBTQ+ adolescents.
- Recruited volunteers to serve as judges for local LGBTQ+ scholarship selection (Out For Education).
- Established affiliation with oSTEM.

China Youth Network, a youth advocacy group in sexual health and rights.   *Beijing, China*
Core Team Intern/Volunteer Leader (approx. 10 hours per week)   *2012-2013*
- Worked with China Family Planning Association and United Nations Population Fund to promote sexual health rights and policies in China.
- Organized volunteer recruitment in Beijing Metro area with more than 100 applicants.
- Reviewed and processed more than 300 college student organization grant applications around China for local youth sexual educational programs.
- Trained more than 100 peer education volunteers and leaders around China for sexual health advocacy.

Interests

I am a triathlete in training and an amateur chef. I also enjoy arts and experience different cultures.

Publications

Journal Articles

Differences in Community Structure in Germ-Free Rats following Microbiome Transfer from WKY and SHRSP, and with Aging in Naïve WKY and SHRSP
Huanan Shi, James W. Nelson, Sharon Phillips, Joseph F. Petrosino, David J. Durgan, Bryan M. Bryan
(in prep) (2021)

Restructuring the Gut Microbiota by Intermittent Fasting Lowers Blood Pressure
Huanan Shi, Bojun Zhang, Abo-Hamzy Taylor, James W. Nelson, Chandra Shekar R. Ambati, Joseph F. Petrosino, Bryan M. Bryan, David J. Durgan
Circulation Research 128.9 (2021) pp. 1240–1254. Am Heart Assoc

3D in situ Imaging of Female Reproductive Tract Reveals Molecular Signatures of Fertilizing Spermatozoa in Mice
Lukas Ded, Jae Yeon Hwang, Kiyoshi Miki, Huanan F Shi, Jean-Ju Chung
Elife 9 (2020) e62043. eLife Sciences Publications Limited

Young Versus Aged Microbiota Transplants to Germ-free Mice: Increased Short-chain Fatty Acids and Improved Cognitive Performance
Juneyoung Lee, Venugopal R Venna, David J Durgan, Huanan Shi, Jacob Hudobenko, Nagireddy Putluri, Joseph Petrosino, Louise D McCullough, Robert M Bryan
Gut microbes 12.1 (2020) p. 1814107. Taylor & Francis

CatSperζ Regulates the Structural Continuity of Sperm Ca2+ Signaling Domains and Is Required for Normal Fertility
Jean-Ju Chung, Kiyoshi Miki, Doory Kim, Sang-Hee Shim, Huanan F Shi, Jae Yeon Hwang, Xinjiang Cai, Yusuf Iseri, Xiaowei Zhuang, David E Clapham
Elife 6 (2017) e23082. eLife Sciences Publications Limited