

CURRICULUM VITAE

Fuqing Wu, Ph.D.

[Google Scholar](#)

Center for Infectious Diseases

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Genetics & Environmental Sciences

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School of Public Health

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Houston, TX 77030

Lab website: <https://www.wufqlab.org>

A. EDUCATION

- 2012.08 – 2017.05. Ph.D. in Biomedical Engineering
School of Biological Health Systems Engineering
Arizona State University, Tempe, AZ
Supervisor: Dr. Xiao Wang
Thesis: *“Design and Engineering of Synthetic Gene Networks”*
- 2009.09 – 2012.06 M.S. in Biochemistry and Molecular Biology
University of Chinese Academy of Sciences
Wuhan, China
Supervisor: Dr. Chunfu Zheng
Thesis: *“Screening and identification of host factors interacting with UL14 of herpes simplex virus 1”*
- 2005.09 – 2009.06 B.S. in Biological Sciences
Jiangxi Normal University
Nanchang, China

B. ACADEMIC APPOINTMENTS

- 2022.02 – present Tenure-track Assistant Professor
Center for Infectious Diseases, School of Public Health
The University of Texas Health Science Center, Houston, TX

Research interests: Infectious Diseases, Wastewater-based Epidemiology, Microbiome, Virology, and Synthetic Biology.

- 2021.06 – 2022.01 Research Scientist
Advisor: Dr. Eric J Alm
Department of Biological Engineering
Massachusetts Institute of Technology
Cambridge, MA
- 2018.05 – 2021.05 Postdoctoral Associate
Advisor: Dr. Eric J Alm
Department of Biological Engineering
Massachusetts Institute of Technology
Cambridge, MA
Research interests: Wastewater Surveillance of Infectious Diseases; Human Gut Microbiome and Antibiotics
- 2017.06 – 2018.05 Postdoctoral Associate
Advisor: Dr. Xiao Wang
Department of Biomedical Engineering
Arizona State University
Tempe, AZ
- 2012.08 – 2017.05 Graduate Research Associate
Department of Biomedical Engineering
Arizona State University, Tempe, AZ
Research interests: Synthetic Biology and Mathematical Modeling; Multistability and Self-regulated Pattern Formation

C. RESEARCH

I. Patents

1. **F. Wu**, X Wang, Y Kuang, X Chen, Q Zhang, C He, S Bayakhmetov. Methods and Systems for generating complex spatial patterns. US 2022/17382305.
2. Q. Zhang, X. Wang, A. Green, D. Ma, **F. Wu**, K. Standage-Beier, X. Chen. Rational design of upstream enhancement RNA for circuit dynamics regulation and viral diagnostics optimization. Publication Number: WO 2021/178557.
3. X. Wang, Q. Zhang, **F. Wu**. Methods and systems for quantifying gene expression in synthetic gene circuits and for tuning synthetic gene circuits. Publication Number: US 2019/0221281.

II. Preprints

#: co-first authorship; *: corresponding authorship

1. Joseph KM, Parikh D, Xuan Q, Li F, Balliew J, Mena KD, **Wu F***. 2024. First Detection of Xylazine in Texas Wastewater and Its Association with Fentanyl Use. medRxiv <https://doi.org/10.1101/2024.11.19.24317580>. (In review)
2. Phan T, Brozak S, Pell B, Ciupe SM, Ke R, Ribeiro RM, Gitter A, Mena KD, Perelson AS, Kuang Y, **Wu F***. 2023. Prolonged viral shedding from noninfectious individuals confounds wastewater-based epidemiology. medRxiv <https://doi.org/10.1101/2023.06.08.23291144>. (In revision)
3. Lee WL, Gu X, Armas F, **Wu F**, Chandra F, Chen H, Xiao A, Leifels M, Chua FJD, Kwok GW, Tay JY, Lim CY, Thompson J, Alm EJ. 2022. Quantitative detection of SARS-CoV-2 Omicron variant in wastewater through allele-specific RT-qPCR. medRxiv <https://doi.org/10.1101/2021.12.21.21268077>.
4. Lee WL, Gu X, Armas F, Chandra F, Chen H, **Wu F**, Leifels M, Xiao A, Chua FJD, Kwok GW, Jolly S, Lim CY, Thompson J, Alm EJ. 2021. Quantitative SARS-CoV-2 tracking of variants Delta, Delta plus, Kappa, and Beta in wastewater by allele-specific RT-qPCR. medRxiv <https://doi.org/10.1101/2021.08.03.21261298>.
5. **Wu F**, He C, Fang X, Baez J, Ohnmacht T, Zhang Q, Chen X, Allison KR, Kuang Y, Wang X. 2019. A Synthetic Biology Approach to Sequential Stripe Patterning and Somitogenesis. bioRxiv 825406. (In revision)

III. Peer-Reviewed Publications

Google Scholar: <https://scholar.google.com/citations?user=48DkbRoAAAAJ&hl=en>

Bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/fuqing.wu.1/bibliography/public/>

(Impact factor of the journal at the time of publication)

Publications at UTHealth (Independent since February 2022)

1. Chen X, Balliew J, Bauer CX, Deegan J, Gitter A, Hanson BM, Maresso AW, Tisza MJ, Troisi CL, Rios J, Mena KD, Boerwinkle E, **Wu F***. 2024. Revealing patterns of SARS-CoV-2 variant emergence and evolution using RBD amplicon sequencing of wastewater. **Journal of Infection** 89:106284.
2. Yu XA, McLean C, Hehemann J-H, Angeles-Albores D, **Wu F**, Muszyński A, Corzett CH, Azadi P, Kujawinski EB, Alm EJ, Polz MF. 2024. Low-level resource partitioning supports coexistence among functionally redundant bacteria during successional dynamics. **The ISME Journal** 18:wrad013.
3. Tisza MJ, Hanson BM, Clark JR, Wang L, Payne K, Ross MC, Mena KD, Gitter A, Javornik Cregeen SJ, Cormier J, Avadhanula V, Terwilliger A, Balliew J, **Wu F**, Rios J, Deegan J, Piedra PA, Petrosino

- JF, Boerwinkle E, Maresso AW. 2024. Sequencing-Based Detection of Avian Influenza A(H5N1) Virus in Wastewater in Ten Cities. **N Engl J Med** 391:1157–1159.
4. Gitter A, Mena KD, Mendez KS, **Wu F**, Gerba CP. 2024. Eye infection risks from *Pseudomonas aeruginosa* via hand soap and eye drops. **Applied and Environmental Microbiology** e02119-23.
 5. Alkhulaifi F, Al-Hooti S, Al-Zenki S, Alomirah H, Xiao Q, Chan W, **Wu F**, Darkoh CC. 2024. Association of Nightly Fasting, Meal Frequency, and Skipping Meals with Metabolic Syndrome among Kuwaiti Adults. **Nutrients** 16:984.
 6. Oghuan J, Chavarria C, Vanderwal SR, Gitter A, Ojaruega AA, Monserrat C, Bauer CX, Brown EL, Javornik S, Deegan J, Hanson BM, Tisza M, Ocaranza HI, Balliew J, Maresso AW, Rios J, Boerwinkle E, Mena KD*, **Wu F***. 2023. Wastewater analysis of mpox virus in a city with low prevalence of Mpox disease: an environmental surveillance study. **The Lancet Regional Health – Americas** 28:100639 (Impact factor: 7.4).
 7. Phan T, Brozak S, Pell B, Oghuan J, Gitter A, Hu T, Ribeiro RM, Ke R, Mena KD, Perelson AS, Kuang Y, **Wu F***. 2023. Making waves: Integrating wastewater surveillance with dynamic modeling to track and predict viral outbreaks. **Water Research** 243:120372. (Impact factor: 12.8)
 8. Tisza M, Cregeen SJ, Avadhanula V, Zhang P, Ayvaz T, Feliz K, Hoffman KL, Clark JR, Terwilliger A, Ross MC, Cormier J, Henke D, Troisi C, **Wu F**, Rios J, Deegan J, Hansen B, Balliew J, Gitter A, Zhang K, Li R, Bauer CX, Mena KD, Piedra PA, Petrosino JF, Boerwinkle E, Maresso AW. 2023. Comprehensive Wastewater Sequencing Reveals Community and Variant Dynamics of the Collective Human Virome. **Nature Communication** 14:6878. (Impact factor: 17.6)
 9. Gitter A, Oghuan J, Godbole AR, Chavarria CA, Monserrat C, Hu T, Wang Y, Maresso AW, Hanson BM, Mena KD, **Wu F***. 2023. Not a waste: Wastewater surveillance to enhance public health. **Frontiers in Chemical Engineering** 4:1112876.
 10. **Wu F***. 2023. Updated analysis to reject the laboratory-engineering hypothesis of SARS-CoV-2. **Environmental Research** 224:115481. (Impact factor: 8.4)
 11. Gitter A, Bauer C, **Wu F**, Ramphul R, Chavarria C, Zhang K, Petrosino J, Mezzari M, Gallegos G, Terwilliger AL, Clark JR, Feliz K, Avadhanula V, Piedra T, Weesner K, Maresso A, Mena KD. 2023. Assessment of a SARS-CoV-2 wastewater monitoring program in El Paso, Texas, from November 2020 to June 2022. **International Journal of Environmental Health Research** 1–11. (Impact factor: 4.4)
 12. Clark JR, Terwilliger A, Avadhanula V, Tisza M, Cormier J, Javornik-Cregeen S, Ross MC, Hoffman KL, Troisi C, Hanson B, Petrosino J, Balliew J, Piedra PA, Rios J, Deegan J, Bauer C, **Wu F**, Mena KD, Boerwinkle E, Maresso AW. 2023. Wastewater pandemic preparedness: Toward an end-to-end pathogen monitoring program. **Frontiers in Public Health** 11:1137881. (Impact factor: 5.2)
 13. **Wu F***, Oghuan J, Gitter A, Mena KD, Brown EL. 2023. Wide mismatches in the sequences of primers and probes for monkeypox virus diagnostic assays. **Journal of Medical Virology** 95:e28395. (Impact factor: 20.6)

*This work was acknowledged in a **Congress letter** sent to CDC by the 170th Congress of the United States, House of Representatives, Committee on Energy and Commerce. The work was also reported by The Medical News and AskBbyGeeks.*

14. Pell B, Brozak S, Phan T, **Wu F**, Kuang Y. 2023. The emergence of a virus variant: dynamics of a competition model with cross-immunity time-delay validated by wastewater surveillance data for COVID-19. **Journal of Mathematical Biology** 86:63. (Impact factor: 2.0)
15. Phan T, Brozak S, Pell B, Gitter A, Xiao A, Mena KD, Kuang Y*, **Wu F***. 2023. A simple SEIR-V model to estimate COVID-19 prevalence and predict SARS-CoV-2 transmission using wastewater-based surveillance data. **Science of The Total Environment** 857:159326. (Impact factor: 10.7)
16. Lee WL, Gu X, Armas F, Leifels M, **Wu F**, Chandra F, Chua FJD, Syenina A, Chen H, Cheng D, Ooi EE, Wuertz S, Alm EJ, Thompson J. 2022. Monitoring human arboviral diseases through wastewater surveillance: Challenges, progress and future opportunities. **Water Research** 223:118904. (Impact factor: 13.4)
17. Lee WL, Armas F, Guarneri F, Gu X, Formenti N, **Wu F**, Chandra F, Parisio G, Chen H, Xiao A, Romeo C, Scali F, Tonni M, Leifels M, Chua FJD, Kwok GW, Tay JY, Pasquali P, Thompson J, Alborali GL, Alm EJ. 2022. Rapid displacement of SARS-CoV-2 variant Delta by Omicron revealed by allele-specific PCR in wastewater. **Water Research** 221:118809. (Impact factor: 13.4)
18. **Wu F****, Lee WL[#], Chen H[#], Gu X, Chandra F, Armas F, Xiao A, Leifels M, Rhode SF, Wuertz S, Thompson J, Alm EJ*. 2022. Making Waves: Wastewater Surveillance of SARS-CoV-2 in an Endemic Future. **Water Research** 118535. (Impact factor: 13.4)
19. Varian BJ, Weber KT, Kim LJ, Chavarria TE, Carrasco SE, Muthupalani S, Poutahidis T, Zafarullah M, Al Olaby RR, Barboza M, Solakyildirim K, Lebrilla C, Tassone F, **Wu F**, Alm EJ, Erdman SE. 2022. Maternal Microbiota Modulate a Fragile X-like Syndrome in Offspring Mice. **Genes (Basel)** 13:1409. (Impact factor: 4.4)

Publications Prior to UTHealth (before February 2022)

20. Duvallet C[#], **Wu F[#]**, McElroy KA, Imakaev M, Endo N, Xiao A, Zhang J, Floyd-O'Sullivan R, Powell MM, Mendola S, Wilson ST, Cruz F, Melman T, Sathyanarayana CL, Olesen SW, Erickson TB, Ghaeli N, Chai P, Alm EJ, Matus M. 2022. Nationwide Trends in COVID-19 Cases and SARS-CoV-2 RNA Wastewater Concentrations in the United States. **ACS ES&T Water** 2:1899–1909. (Impact factor: 5.3)
21. **Wu F[#]**, Xiao A[#], Zhang J[#], Moniz K, Endo N, Armas F, Bonneau R, Brown MA, Bushman M, Chai PR, Duvallet C, Erickson TB, Foppe K, Ghaeli N, Gu X, Hanage WP, Huang KH, Lee WL, Matus M, McElroy KA, Nagler J, Rhode SF, Santillana M, Tucker JA, Wuertz S, Zhao S, Thompson J, Alm EJ. 2022. SARS-CoV-2 RNA concentrations in wastewater foreshadow dynamics and clinical presentation of new COVID-19 cases. **Science of The Total Environment** 805:150121. (Impact factor: 10.7)

*This work was reported by the **New York Times** (“Watching What We Flush Could Help Keep a Pandemic Under Control”) and **Nature Biotechnology** (“Watcher in the wastewater”)*

22. Xiao A[#], **Wu F[#]**, Bushman M[#], Zhang J, Imakaev M, Chai PR, Duvallet C, Endo N, Erickson TB, Armas F, Arnold B, Chen H, Chandra F, Ghaeli N, Gu X, Hanage WP, Lee WL, Matus M, McElroy KA, Moniz K, Rhode SF, Thompson J, Alm EJ. 2021. Metrics to relate COVID-19 wastewater data to clinical testing dynamics. **Water Research** 212:118070. (Impact factor: 11.2)
23. **Wu F[#]**, Xiao A[#], Zhang J, Moniz K, Endo N, Armas F, Bushman M, Chai PR, Duvallet C, Erickson TB, Foppe K, Ghaeli N, Gu X, Hanage WP, Huang KH, Lee WL, McElroy KA, Rhode SF, Matus M, Wuertz S, Thompson J, Alm EJ. 2021. Wastewater surveillance of SARS-CoV-2 across 40 U.S. states from February to June 2020. **Water Research** 202:117400. (Impact factor: 11.2)
24. Lee WL, Imakaev M, Armas F, McElroy KA, Gu X, Duvallet C, Chandra F, Chen H, Leifels M, Mendola S, Floyd-O’Sullivan R, Powell MM, Wilson ST, Berge KLJ, Lim CYJ, Wu F, Xiao A, Moniz K, Ghaeli N, Matus M, Thompson J, Alm EJ. 2021. Quantitative SARS-CoV-2 Alpha Variant B.1.1.7 Tracking in Wastewater by Allele-Specific RT-qPCR. **Environmental Science & Technology Letters** 8:675–682. (Impact factor: 10.9)
25. Zhang Q, Ma D, **Wu F**, Standage-Beier K, Chen X, Wu K, Green AA, Wang X. 2021. Predictable control of RNA lifetime using engineered degradation-tuning RNAs. **Nature Chemical Biology** 17:828–836. (Impact factor: 16.3)
26. **Wu F**, Zhang J, Xiao A, Gu X, Lee WL, Armas F, Kauffman K, Hanage W, Matus M, Ghaeli N, Endo N, Duvallet C, Poyet M, Moniz K, Washburne AD, Erickson TB, Chai PR, Thompson J, Alm EJ. 2020. SARS-CoV-2 Titers in Wastewater Are Higher than Expected from Clinically Confirmed Cases. **mSystems** 5:e00614-20. (Impact factor: 6.5)

*This paper was highlighted as Editor’s Pick in mSystems; and covered by social media: **New York Post**; **Boston Globe**; **Newsweek**; **Boston Herald**; **Chemical & Engineering News**; **Bostinno**; **MIT News***

27. **Wu F[#]**, Zhang Q[#], Wang X. 2018. Design of Adjacent Transcriptional Regions to Tune Gene Expression and Facilitate Circuit Construction. **Cell Systems** 6:206-215.e6. (Impact factor: 6.3)
28. **Wu F**, Su R-Q, Lai Y-C, Wang X. 2017. Engineering of a synthetic quadrastable gene network to approach Waddington landscape and cell fate determination. **eLife** 6:e23702. (Impact factor: 7.2)

This work was highlighted by Cell Systems (June 2017).

29. Wang L-Z, **Wu F**, Flores K, Lai Y-C, Wang X. 2016. Build to understand: synthetic approaches to biology. **Integrative Biology** 8:394–408. (Impact factor: 3.6)
30. **Wu F**, Wang X. 2015. Applications of synthetic gene networks. **Science Progress** 98:244–252.

31. **Wu F**, Menn DJ, Wang X. 2014. Quorum-sensing crosstalk-driven synthetic circuits: from unimodality to trimodality. **Chemistry & Biology** 21:1629–1638. (Impact factor: 6.2)
This work was highlighted by Chemistry & Biology, December 2014.
32. **Wu F**, Long J, Wang S, Xing J, Li M, Zheng C. 2012. Live cell imaging fails to support viral-protein-mediated intercellular trafficking. **Archives of Virology** 157:1383–1386. (Impact factor: 2.0)
33. **Wu F**, Wang S, Xing J, Li M, Zheng C. 2012. Characterization of nuclear import and export signals determining the subcellular localization of WD repeat-containing protein 42A (WDR42A). **FEBS Letters** 586:1079–1085. (Impact factor: 3.6)
34. **Wu F**, Xing J, Wang S, Li M, Zheng C. 2011. Screening and identification of host factors interacting with UL14 of herpes simplex virus 1. **Medical Microbiology and Immunology** 200:203–208. (Impact factor: 3.5)
35. Xing J, **Wu F**, Wang S, Krensky AM, Mody CH, Zheng C. 2010. Granulysin Production and Anticryptococcal Activity Is Dependent upon a Far Upstream Enhancer That Binds STAT5 in Human Peripheral Blood CD4+ T Cells. **The Journal of Immunology** 185:5074–5081. (Impact factor: 5.5)
36. Xing J, **Wu F**, Pan W, Zheng C. 2010. Molecular anatomy of subcellular localization of HSV-1 tegument protein US11 in living cells. **Virus Research** 153:71–81. (Impact factor: 2.7)
37. Zha M, **Wu F**, Wang S, Fu M. 2010. A specific protein, flammutoxin expressed in the *Flammulina velutipes* stipe. **Chinese Journal of Applied & Environmental Biology**. 16, 738–740.

IV. Book Chapter

1. Chen X, Xu J, Vanderwal SR, **Wu F***. 2024. Primers and probes for the diagnostics of mpox virus. **The Scientific Basis of Mpox (Monkeypox)**, Elsevier, p. 227-240.
2. Leifels M, Lee WL, Armas F, Gu X, Chandra F, Cheng D, Kwok WC, Chua D, Kim SY, Ng WJ, Nainai D, Sirikanachana K, Sozzi E, Farnleitner AH, **Wu F**, Wuertz S, Thompson J. 2023. Surveillance of SARS-CoV-2 in Wastewater at the Population Level: Insights into the Implementation of Non-invasive Targeted Monitoring in Singapore and the USA. **The Handbook of Environmental Chemistry**, Springer, Berlin, Heidelberg, p. 1–20.

V. Talks and Presentations (not including the contributing presentations)

1. Invited talk: “Advancing wastewater surveillance with dynamic modeling and sequencing” @ Infectious Disease Surveillance through Wastewater Analysis Workshop at the Netherlands (2024.10)
2. Invited talk: “Advancing wastewater surveillance to wastewater epidemiology” @ Human Genetic Center at UTHealth (2023.12)

3. Invited talk: “Advancing wastewater-based epidemiology with dynamic modeling” @ American Public Health Association Annual Meeting (2023.11)
4. Invited talk: “Enhance wastewater surveillance with dynamic modeling” @ Society for Mathematical Biology Annual Meeting (2023.08)
5. Poster: “Modeling of wastewater surveillance data to predict infection prevalence and transmission dynamics” @ ASM Microbe by the American Society for Microbiology (2023.06)
6. Poster: “Reject the laboratory engineering hypothesis of SARS-CoV-2” @ ASM Microbe by the American Society for Microbiology (2023.06)
7. Invited talk: “Enhance Wastewater Surveillance with Dynamic Modeling” @ Public Health Agency of Canada (2023.04)
8. Invited talk: “Wastewater surveillance of infectious diseases from pandemic to endemic” @ Department of Microbiology and Molecular Genetics at UTHealth (2022.11)
9. Invited talk: “Wastewater Surveillance of Infectious Diseases for Population Health” @ World Biological Science and Technology Conference at Japan (2022.07).
10. Invited talk: “Bridging synthetic biology to epidemiology for pandemic preparedness” @ Synthetic Biology Young Speaker Series (SynBYSS, 2022.06)
11. Invited talk: “Wastewater monitoring of infectious diseases for population health” @ Environmental and Occupational Health Sciences (EOHS) Research Seminar Series (2022.04)
12. Poster: “Wastewater surveillance of SARS-CoV-2 across the United States” @ IWA MEME 2021 (2021.10)
13. Invited talk: “Wastewater surveillance of SARS-CoV-2 across the United States” @ Corona 2021 Virtual Conference (2021.07).
14. Invited talk: “Wastewater surveillance of SARS-CoV-2 and its applications” @ COVID 2019 Virtual (2020.11).
15. Invited talk: “SARS-CoV-2 titers in wastewater are higher than expected from clinically confirmed cases” @ Virtual Podium 2020 (2020.05).
16. Invited talk: “A synthetic biology approach to multistability and pattern formation” @ Pacific Northwest National Laboratory (2018.02).
17. Invited talk: “Engineering of synthetic gene networks for Waddington landscape and cell fate determination” @ Massachusetts Institute of Technology (2017.09).
18. Invited talk: “Development of synthetic tunable patterns from engineered single cells” @ School of Mathematical & Statistical Science, ASU (2016.10).
19. Poster: “Wastewater surveillance of SARS-CoV-2 across the United States” @ World Microbe Forum (2021.06).
20. Poster: “Dietary fiber protects gut microbiota from antibiotics” @ MIT Microbiome Symposium (2021.04).

21. Poster: “Engineering of a synthetic quadrastable gene network to approach Waddington landscape and cell fate determination” @ BMES Annual Meeting (2017.10).
22. Poster: “Engineering Quorum-sensing Crosstalk to Generate Complex of Synthetic Gene Networks” @ BMES Annual Meeting (2014.10).

D. FUNDING SUPPORT

Agency: National Science Foundation (DMS/2421257)

Title: Collaborative Research: IHBEM: Beneath the Surface: Integrating Wastewater Surveillance and Human Behavior to Decode Epidemiological Patterns

Role: PI (Contact)

Project period: 9/2024 – 8/2027

Funding agency: NIH – NIDA (R01DA059394-01A1)

Title: Wastewater sampling: A new tool to accelerate ending the HIV epidemic

PI: Dr. Thomas Peter Giordano

Role: Co-Investigator

Project period: 9/2023 – 8/2028

Funding agency: Complete Genomics Inc.

Title: Wastewater sequencing of SARS-CoV-2 for emerging mutations

Role: PI

Project period: 10/2023 – 9/2024

Funding agency: University of Texas School of Public Health PRIME Award

Title: Advance wastewater surveillance for predictive epidemiology and evolution of SARS-CoV-2

PI: Fuqing Wu

Project period: 9/2023 – 8/2024

Funding agency: Southwest Center for Occupational and Environmental Health (SWCOEH) Education and Research Center Pilot Projects Training Program; CDC/NIOSH

Title: Monitoring the consumption of fentanyl and its adulterant xylazine by wastewater-based epidemiology

PI: Fuqing Wu

Project period: 7/2023 – 6/2024

Funding agency: NIH - RADxUP Phase III (1U01TR004355-01)

Title: Addressing COVID-19 Testing Disparities in Vulnerable Populations Using a Community JITAI (Just in Time Adaptive Intervention)

PI: Dr. Maria E. Fernandez

Role: Co-Investigator

Project period: 12/2022 – 11/2024

Title: Texas Epidemic Public Health Institute (TEPHI)

Funding agency: Texas Legislature

PI: Dr. Eric Boerwinkle (UTHealth)

Role: Faculty

Project period: 1/2023 – 8/2026

Agency: The University of Texas

Type of Grant: UT System Rising STARS award

PI: Fuqing Wu

Project period: 2/8/2022 – 8/31/2025

Agency: The University of Texas

Type of Grant: Faculty Startup Funding

PI: Fuqing Wu

Project period: 2/8/2022 – 2/7/2026

Funding agency: American Heart Association (15PRE25710303)

Title: Engineering a multistable MINPA gene network to regulate cell fate determination

PI: Fuqing Wu

Project period: 7/2015 – 6/2017

E. ACADEMIC AND PROFESSIONAL HONOR/AWARDS/SCHOLARSHIPS

I. Honors and Awards

- UT Systems Rising STARs Award (2022.02)
- 'Best Research Award' in International Conference on Infectious Diseases 2022 (2022.05)
- American Heart Association Predoctoral Fellowship (2015.06)
- Peter E. Crouch Excellence Fund Fellowship (2015)
- Special Awards of Changhua Scholarship in WIV, CAS (2012)
- Outstanding Graduate Students in WIV, CAS (2011)
- Outstanding Graduate Students in WIV, CAS (2010)
- Excellent Graduates in Jiangxi Normal University (2009)
- National Encouragement Scholarship (2008)
- The Third, Second, and First Prize Scholarships (2006~2009)

II. Professional Membership

- Member, American Public Health Association (2023 - present)
- Member, Society for Mathematical Biology (2023 - present)
- Member, American Society for Microbiology (2021 - present)
- Member, American Heart Association (2015 - 2017)
- Member, American Society for Cell Biology (2014 - 2015)

F. TEACHING

1. Public Health Ecology (Fall 2024, Teaching effort = 100%)
2. Water Environment (Spring 2023, Spring 2024, Teaching effort = 100%)
3. Current Topics in Infectious Disease Epidemiology (Guest lecturer, 2023 Summer)
4. Seminar in Genetics and Population Biology (Guest presenter, 2023 Fall)

G. STUDENT MENTORING

I. Current students

1. Basani, Himabindu R. 2023 Fall - present

2	Parikh, Dhvani A.	2023 Fall - present
3	Patel, Priyasha Sanjay	2023 Fall - present
4	Vijendra, Rakshitha	2023 Fall - present
5	Han, Peichun (PhD)	2023 Fall - present
6	Xu, Jiaoyang (PhD)	2023 Fall – present
7	Green, Siah	2024 Fall - present
8	Li, Jinze (PhD)	2024 Spring - present

II. Graduated Students

	Student's name	Graduated in
1	Nguyen, Jennifer N.	2024 Spring (2022 – 2024)
2	Oghuan, Jeremiah	2024 Spring (2023 – 2024)
3	Rehan, Muhammad H.	2024 Summer (2022 – 2024)
4	Trivedi, Bhavikkumar N.	2024 Summer (2022 – 2024)
5	Chen, Yi (PhD)	2024 Fall

III. Graduate Students/Postdoc working in the laboratory / Individual Study / Training

1. Runze, Li, PhD in Biostatistics, September 2024 – present
2. Katherine Joseph, PhD in Environmental Science, January – present
3. Jinze Li, PhD in Environmental Science, January 2024 – present
4. Dhvani Parikh, MPH in Epidemiology, September 2023 – present
5. Xingwen Chen, Postdoctoral researcher, June 2023 – present
6. Scout R. Vanderwal, MPH in Epidemiology, December 2022 – December 2023
7. Jeremiah Oghuan, MPH in Epidemiology. Fall 2022 – Fall 2023
8. Iheyinwa Odum-Nwabueze, MPH in Epidemiology, Summer 2023
9. Anuja Rajendra Godbole, MPH in Epidemiology, Summer 2022
10. William Hebel, MPH in Epidemiology, Summer 2022
11. Carlos Chavarria, MPH and PhD student (El Paso campus), Summer 2022 – Fall 2023.
12. Carlos Monserrat, Research Assistant (El Paso campus), Summer 2022 – Fall 2023

IV. Committee Member for Students with Dissertation/Thesis

1. Fatema Alkhulaifi, Ph.D. student in Epidemiology (October 2023 -)
Role: Committee member
2. Caitlin Cotter, Ph.D. student in Epidemiology (February 2023 – May 2024)
Role: Committee member
3. Bingjie Li, M.S. Ph.D. in Epidemiology (December 2022)
Dissertation Title: An Overview of Clostridium difficile Infection and Its Prevention, Diagnosis and Treatment
Role: Committee member
4. Yi Chen, Ph.D. in Epidemiology (September 2022)
Dissertation Title: Application of the mobile aerosol lung deposition apparatus (malda) to estimate occupational and environmental ultrafine particle exposure
Role: Committee member
5. Tzuruei Chao, M.S. in Biostatistics (August 2022)
Dissertation Title: Sampling design of wastewater surveillance to detect SARS-CoV-2: A simulation study using geospatial Kriging method
Role: Committee member

H. SERVICE TO THE INSTITUTION AND COMMUNITY

I. Academic Services

- Grant Reviewer for NIH GVE study section – February 2024
- Grant Reviewer for Natural Sciences and Engineering Research Council of Canada (NSERC) – August 2024
- Grant Reviewer for 'X' University proposal (anonymous, Fall 2024)
- Organizer for a Minisymposium at SIAM Life Sciences Annual Conference – December 2023
- Organizer for a Minisymposium: "Integrating Data with Epidemic Models: Challenges and Opportunities" at the Society for Mathematical Biology Annual Meeting – June 2023.

II. Peer Reviewer for Academic Journals

- Water Research; Environmental Research; Water;
- Journal of Infection; ERJ Open Research; Environmental International;
- Biology Chemistry; Current Research in Biotechnology;
- Frontiers of Microbiology; Frontiers in Bioengineering and Biotechnology;
- Frontiers in Public Health; Frontiers in Cellular and Infection Microbiology;

- mSystems; Journal of Advanced Research; Journal of Biosafety and Biosecurity;
- Journal of Hazardous Materials; Journal of Environmental Management;
- Science of the Total Environment; Mathematical Biological Science;
- Journal of Water Process Engineering; Heliyon;
- International Journal of Environmental Research and Public Health;
- Journal of Medical Virology; Virological Sinica; Virology Journal;
- The Lancet Global Health; The Lancet Planetary Health; eBioMedicine;

III. **Journal Editor:**

- JMIRx Med
- Frontiers in Microbiology (Virology);
- Frontiers in Bioengineering and Biotechnology (Synthetic biology);
- Genes;
- American Journal of Biomedical Science & Research

IV. **Service to the Institution**

- Search Committee for EOHS hiring at El Paso (1)
- Search Committee member for EOHS hiring (2)
- EHS Radiation Safety Program: Custodian for the GC/MS units at SPH

V. **Service to the Community**

- Media interview: In Other Words, LLC (for Lawrence Technological University)
Title: Wastewater Surveillance
Date: September 11, 2023
- Consultation: Science
Title: Monkeypox mismatch
Date: November 7, 2022
- Citation: 170th **Congress of the United States, House of Representatives**, Committee on Energy and Commerce
Title: CDC diagnostic testing procedures for monkeypox virus
Date: November 2, 2022
- Media interview: Dallas Morning News
Title: Wastewater Surveillance
Date: July 19, 2022

