Lubna Pinky, Ph.D.

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Current Position

Assistant Professor
Biomedical Physics
School of Applied and Computational Science
Meharry Medical College
Nashville, Tennessee

Education

Postdoctoral Fellowship, University of Tennessee Health Science Center, Memphis, TN	2018 – 2021
Ph.D. in Biophysics, Texas Christian University, Fort Worth, TX	2013 – 2018
M.Sc. in Biophysics, Texas Christian University, Fort Worth, TX	2013 – 2016
B.Sc. in Electrical and Electronics Engineering, Khulna University of Engineering and Technology, Khulna, Bangladesh	2006 – 2010

Academic Appointments

Assistant Professor 2023 – current
Biomedical Physics
School of Applied and Computational Science
Meharry Medical College (MMC)
Nashville, Tennessee

Senior Research Associate
School of Health Professions 2021 – 2022
Eastern Virginia Medical School (EVMS)
Norfolk, Virginia

Postdoctoral Fellow 2018 – 2021
Department of Pediatrics
University of Tennessee Health Science (UTHSC)
Memphis, Tennessee

Adjunct Faculty 2015 – 2016
Department of Physics and Astronomy
Texas Christian University (TCU)
Fort Worth, Texas

Teaching Assistant (Laboratory Instructor) 2013 – 2018
Department of Physics and Astronomy
Texas Christian University
Fort Worth, Texas

Lecturer 2010 – 2013
Department of Electrical and Electronics Engineering (EEE)
American International University – Bangladesh (AIUB)
Dhaka, Bangladesh

Professional Development

- Mathematical Modeling Approaches to Virtual Clinical Trials, Career & Innovation Hub 2022
Pharmacometrics Spring School, Modeling Using Monolix Suite™, LIXOFT 2021
- Web-Based Bioinformatics and Computational Biology Tools, Department of Pathology, UTHSC, Memphis, TN 2020
- Advanced Immunology, Department of Microbiology, Immunology and Biochemistry, UTHSC, Memphis, TN 2020
- Pharmacokinetics and Dose Optimization, Department of Pharmacy, UTHSC, Memphis, TN 2020
- Pediatric Physiologically-Based Pharmacokinetic Modeling, Department of Pharmaceutical Sciences, St. Jude Children's Research Hospital, Memphis, TN 2019
- Short Course in Systems Biology, Center for Complex Biological Systems, University of California – Irvine, CA 2018
- Summer School on Bioinformatics, DeCART (Data, exploration, Computation, and Analytics Real-world Training for the Health Sciences), University of Utah, UT 2017

Professional Memberships and Activities

- International Society for Computational Biology (ISCB) 2022
- Multi-Scale Modeling and Viral Pandemics Working Group, National Institute of Biomedical Imaging and Bioengineering, NIH 2021
- American Society for Clinical Pharmacology and Therapeutics (ASCPT) 2020
- International Society of Pharmacometrics (ISoP) 2020
- Society for Mathematical Biology (SMB) 2017
- Society for Industrial and Applied Mathematics (SIAM) 2014

Editorial Board Appointments

- Guest Editor, Frontiers in Epidemiology, 2023
Special Issue on Single and Multi-Pathogen Epidemiology and Control
- Guest Editor, Biology, MDPI 2021
Special Issue on Systems Immunology Approaches in Infectious Diseases

Committee Assignments and Administrative Services

- Proposal reviewer, ASCPT 2022 Annual Meeting 2022
- Poster and Contributed Talk Judge, SMB 2021
- Journal Referee of 2017 – current
Biology, Bioinformatics, Frontiers in Microbiology, Annual Review in Control Theory, PLoS One, Computer Methods and Programs in Biomedicine, Bulletin of Mathematical Biology, Mathematical Bioscience

Educational Activities

- Adjunct Faculty, Department of Physics and Astronomy, TCU 2015 – 2016
    - Physics II (PHYS20484, based on Electromagnetism and Optics)
- Laboratory Instructor, Department of Physics and Astronomy, TCU 2013 – 2018
    - General Physics I (PHYS10154, based on Mechanics of Solids and Fluids, Thermodynamics, Sound and Wave Motion)
    - General Physics II (PHYS10164, based on Electricity and Magnetism, Optics, Atomic and Nuclear physics)
    - Introductory Astronomy: Earth \& Planets (PHYS10273, based on the basic physical concepts of light and gravity, Earth's climate and energy sources; also, the motion of the Sun, Moon and Stars)

  - Archaeo-Astronomy (PHYS10293, based on the origin and evolution of the planets and moons, and search for extra-solar planets)
- Lecturer, Department of EEE, AIUB, Dhaka, Bangladesh 2010 – 2013
  - Electromagnetic Theory
  - Analog Electronics I and II with laboratories
  - Electrical Circuits I (DC circuit) and II (AC circuit) with laboratories

Honors and Awards

- SMB Landahl-Busenberg Travel Award 2019
- SMB Travel Award (to attend WSVD in Paris) 2019
- Outstanding Dissertation Award, University level, TCU 2018
- Outstanding Dissertation Award, College of Science and Engineering, TCU 2018
- Outstanding Dissertation Award, Department of Physics and Astronomy, TCU 2018
- SIAM Student Travel Award 2018, 2014
- Texas Applied Mathematics and Engineering Symposium (TAMES) Travel Award 2017
- SMB Subgroup on Immunobiology and Infection Travel Award 2017
- Dynamics Days Travel Support 2016
- TCU Graduate Student Travel Support 2014 – 2018
- Bangladesh - Sweden Trust Fund for Graduate Level Studies 2013

Grants and Contract Awards

- Research Fund, College of Science and Engineering, TCU 2017

Publications

1. **Pinky L**, DeAguero JR, Remien CH, Smith AM. How Interactions During Viral Coinfection Shape Infection Kinetics. (submitted to PLoS Comput Biol.)
2. Ranathunge C, Patel SS, **Pinky L**, Correll VL, Semmes OJ, Armstrong RK, Combs CD, Nyalwidhe JO. promor: a comprehensive R package for label-free proteomics data analysis and predictive modeling. (under review with Bioinformatics)
3. **Pinky L**, Dobrovolny HM. Epidemiological consequences of viral interference: A mathematical modeling study of two interacting viruses. Front Microbiol. 2022;13:830423. Doi:10.3389/fmicb.2022.830423. eCollection 2022. PubMed PMID: 35369460; PubMed Central PMCID: PMC8966706
4. **Pinky L**, Burke CW, Russell CJ, Smith AM. Quantifying dose-, strain-, and tissue-specific kinetics of parainfluenza virus infection. PLoS Comput Biol. 2021 Aug;17(8):e1009299. 2021 Aug. PubMed PMID: 34383757; PubMed Central PMCID: PMC8384156
5. **Pinky L**, Dobrovolny HM. SARS-CoV-2 coinfections: Could influenza and the common cold be beneficial?. J Med Virol. 2020 Nov;92(11):2623-2630. 2020 Jun 19. PubMed PMID: 32557776; PubMed Central PMCID: PMC7300957.
6. **Pinky L**, Gonzalez-Parra G, Dobrovolny HM. Effect of stochasticity on coinfection dynamics of respiratory viruses. BMC Bioinformatics. 2019 Apr 16;20(1):191. PubMed PMID: 30991939; PubMed Central PMCID: PMC6469119.
7. **Pinky L**, González-Parra G, Dobrovolny HM. Superinfection and cell regeneration can lead to chronic viral coinfections. J Theor Biol. 2019 Apr 7;466:24-38. PubMed PMID: 30639572; PubMed Central PMCID: PMC7094138.
8. **Pinky L**, Dobrovolny HM. The impact of cell regeneration on the dynamics of viral coinfection. Chaos. 2017 Jun;27(6):063109. PubMed PMID: 28679223.
9. **Pinky L**, Dobrovolny HM. Coinfections of the Respiratory Tract: Viral Competition for Resources. PLoS One. 2016;11(5):e0155589. PubMed PMID: 27196110; PubMed Central PMCID: PMC4873262.

10. **Pinky L**, Islam S, Alam M, Hossain M, Islam M. Modeling of orientation-dependent photoelastic constants in cubic crystal system. Materials Sciences and Applications. 2014 March; 5(4):223

Oral Presentations

Invited talks

- IMCI Seminar, Department of Mathematics and Statistical Science, University of Idaho 2022
- Math-Bio Seminar, Mathematics Department, Iowa State university, 'Multi-Scale Modeling of Coinfection Kinetics' 2022
- SMB Annual Meeting, 'How Interactions During Viral Coinfection Shape Infection Kinetics' 2021
- Monthly Math Modeling Seminar, Fred Hutchinson Cancer Research Center, 'Maximizing Insight into Parainfluenza Virus Infection Using A Within Host Data-Driven Model' 2021
- Virtual Seminar on Multi-Scale Modeling of COVID-19, Frankfurt Institute for Advanced Studies, Germany, 'Epidemiological consequences of viral interference: A study of two interacting viruses' 2021
- Laboratory for Systems Medicine, University of Florida Health, 'How Interactions During Viral Coinfection Shape Infection Kinetics' 2021
- SMB Annual Meeting, 'Quantifying the Effects of Dose, Strain, and Respiratory Compartment on Parainfluenza Virus Infection Kinetics' 2020
- Scientist Spotlight at ISoP, Webinar, 'Mechanics of Influenza-like Viruses' 2020
- PKPD Workshop, St. Jude Children's Research Hospital, 'Kinetics of Parainfluenza Virus' 2020

Math-Bio Seminar, Mathematics Department, Virginia Tech, 'Kinetics of Parainfluenza Virus' 2020

- SMB Annual Meeting, University of Montreal, Canada, 'Quantifying Kinetic Differences in Two Recombinant Parainfluenza Viruses' 2019
- Center for Complex Biological System, University of California - Irvine, 'Optimal therapeutic strategy for influenza virus targeting NS1 protein: A mathematical modeling approach' 2018

Contributed Talks

- SIAM, Minneapolis, MN, 'Mechanisms of virus-virus coexistence in the human respiratory tract' 2018
- TAMES, University of Texas - Austin, TX, 'Two possible mechanisms of chronic viral coinfections: Superinfection and Cellular regeneration' 2017
- APS March Meeting, San Antonio, TX, 'Impact of cell regeneration in human respiratory tract on simultaneous viral infections' 2015

Selected Poster Presentations

- ISCB, Wisconsin, 'promor: An Integrative Approach for Proteomics Data Analysis and Modeling' (won Best Poster Award in Computational MassSpec section) 2022
- SIAM on CSE, 'Simulation of Treatment of Viral Coinfections' (virtual) 2021
- 3rd Annual Meeting of the SIAM Texas - Louisiana Section, Texas A&M University, 'SARS-CoV-2 coinfections: Implications for the second wave' (virtual) 2020
- SMB Annual Meeting, 'SARS-CoV-2 coinfections: Implications for the second wave' (won Best Poster Award in Epidemiological Modeling section) 2020
- 4th Workshop on Viral Dynamics, French National Institute of Health and Medical Research, France, 'Quantifying kinetic differences in two recombinant parainfluenza Viruses' 2019

Professional Community Activities

- Membership Table Representative, SMB Annual Meeting 2019
- Outreach Program, Tanglewood Elementary School, Fort Worth, Texas 2017
  Project name: Build Your Own Maglev Train, Focus group: 5th grade students
- Graduate Student Representative, Student Research Symposium, TCU 2016