Youngmin Park

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Employment

Summer 2022 –	Assistant Professor **University of Florida**
Sept. 2021 – Sept. 2022	PIMS Postdoctoral Fellow **University of Manitoba** Advisor: Stephanie Portet
Jun. 2019 – Jul. 2021	Postdoctoral Fellow **Brandeis University** Advisor: Thomas Fai
May 2018 – May 2019	Postdoctoral Fellow **University of Pennsylvania** Advisor: Maria N. Geffen

Education

Aug. 2013 – Apr. 2018	PhD Mathematics, **University of Pittsburgh** Thesis: Dimension Reduction of Neural Models Across Multiple Spatio-temporal Scales | Advisor: G. Bard Ermentrout
Aug. 2012 – Aug. 2013	MS Applied Math **Case Western**, Cleveland, OH Thesis: Infinitesimal Phase Response Curves for Piecewise Smooth Dynamical Systems | Advisor: Peter J. Thomas
Aug. 2008 – Aug. 2013	BS Applied Math **Case Western**, Cleveland, OH

Additional Training

Sep. 2016	Max Planck Institute Göttingen Advanced Computational Neuroscience
Aug. 2015	Woods Hole MBL Methods in Computational Neuroscience
Jun. 2010	Mathematical Biosciences Institute OSU Summer Program

Peer-Reviewed Publications

1. **Park, Y.**, Fai, T.G., "Coarse-grained Stochastic Model of Myosin-Driven Vesicles into Dendritic Spines." Accepted for publication at SIAM Journal on Applied Mathematics (2021)
2. Fai, T.G., **Park, Y.** "Global asymptotic stability of an active disassembly model of flagellar length control." Journal of Mathematical Biology 84.8 (2021).
3. **Park, Y.**, Wilson, D. "High-Order Accuracy Computation of Coupling Functions for Strongly Coupled Oscillators." SIADS 20.3:1464-1484 (2021).
4. **Park, Y.**, Fai, T.G. "The Dynamics of Vesicles Driven Into Closed Constrictions by Molecular Motors." Bulletin of Mathematical Biology. 82.141 (2020).
5. **Park, Y.**, Geffen, M.N. "A Circuit Model of Auditory Cortex." PLOS Computational Biology. 17.6:e1008016 (2020).
6. Ermentrout, G.B., **Park, Y.**, Wilson, D. "Recent advances in coupled oscillator theory." Philosophical Transactions A. 377. (2019).
7. **Park, Y.**, Ermentrout, G.B. "A Multiple Timescales Approach to Bridging Spiking- and Population-level Dynamics." Chaos. 28.8:083123 (2018).
8. **Park, Y.**, Ermentrout, G.B. "Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation." SIADS 17.1:931–981 (2018).
9. **Park, Y.**, Shaw, K.M. Chiel, H.J. Thomas, P.J. "The Infinitesimal Phase Response Curve of Oscillators in Piecewise Smooth Dynamical Systems." EJAM 19.5:905–940 (2018).
10. **Park, Y.**, Ermentrout, G.B. "Weakly Coupled Oscillators in a Slowly Varying World." Springer Journal of Computational Neuroscience 40.3:269–281 (2016).
11. Shaw, K.M., **Park, Y-M.**, Chiel, H.J., Thomas, P.J. "Phase Resetting in an Asymptotically Phaseless System: On the Phase Response of Limit Cycles Verging on a Heteroclinic Orbit." SIADS 11.1:350–91 (2012).

In Preparation

1. Model Selection for Mechanisms of Retrograde Flow and Vimentin Transport. Park, Y. and Portet, S.
2. The Adaptive Reduction of Strongly Coupled Oscillators. Park, Y. and Wilson, D.

Book Chapters

1. **Park, Y.**, Heitmann, S., Ermentrout, G.B. "The Utility of Phase Models in Studying Neural Synchronization." Book chapter in "Computational Models of Brain and Behavior". Wiley-Blackwell 493–505 (2017).

Teaching

School	Type	Class	Term(s)
U. of Manitoba	Lecture	Ordinary Differential Equations	Fall 2021
	Lecture	Partial Differential Equations	Fall 2021
Marine Biol. Lab.	Assistant	Methods in Comp. Neuroscience	Summer 2021
Brandeis	Lecture	Calculus 3	Spring 2021
	Lecture	Linear Algebra	Spring 2020
U of Pitt.	Lecture	Differential Equations (3 sections)	Summers, 2014–2017
		Linear Algebra	Summer 2015
		Discrete Math	Spring 2015
	Recitation	Computational Neuroscience	Summers, 2014–2017
		Business Calculus (6 sections)	Fall/Spring 2013/16
		Calculus 1, 2, 3 (6 sections)	Fall/Spring 2014–2016
	Grading	Differential Equations (10 sections)	Fall/Spring 2013–2017
		Complex Variables and Applications	Spring 2017
		Linear Algebra (2 sections)	Spring 2016
Oberlin	Assistant	Computational Neuroscience	Winter 2013
Case Western	Assistant	Calculus 3	Spring 2012

Honors and Awards

2021	Society for Mathematical Biology poster prize
Sep. 2021–Aug. 2023	PIMS Postdoctoral Fellowship
2021	SIAM Early Career Travel Award
Sep. 2017–May 2018	Andrew Mellon Predoctoral Fellowship
2017	SIAM Student Travel Award
2016	Elizabeth Baranger Teaching Award (nominated)
2012	SPUR (Summer Program for Undergraduate Research)

Oral Presentations

- "High-Order Accuracy Computation of Coupling Functions for Strongly Coupled Oscillators"
  - May 2021 SIAM Dynamical Systems (virtual)
- "Coarse-grained Stochastic Model of Myosin-Driven Vesicles into Dendritic Spines"
  - Mar. 2021 SIAM CSE (virtual)
- "Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation"
  - Mar. 2020 Boston University Dynamics Seminar (Cancelled due to COVID-19)
  - Jul. 2019 Society for Mathematical Biology, University of Montreal
  - May 2019 SIAM Dynamical Systems, Snowbird, Utah
  - Mar. 2016/17 U of Pitt. Mathematical Biology Seminar
- "A Multiple Timescales Approach to Bridging Spiking- and Population-level Dynamics"
  - Mar. 2018 U of Pitt. Mathematical Biology Seminar
- "The Dynamics of Vesicles Driven through Closed Constrictions by Molecular Motors"
  - Aug. 2020 Society for Mathematical Biology (virtual)
  - Jun. 2020 SIAM Life Sciences (virtual)
  - Jun. 2020 Brandeis Mathematical Biology Seminar, Waltham, MA
  - Jan. 2020 Aspen Center for Physics, Aspen, CO
  - Nov. 2019 APS Fluids, Seattle, WA
  - Aug. 2019 Society for Mathematical Biology (virtual)
- "Weakly Coupled Oscillators in a Slowly Varying World"
  - Sep. 2018 Computational Neuroscience Initiative Seminar, Philadelphia, PA
  - May 2015/17 SIAM Dynamical Systems, Snowbird, Utah
  - Mar. 2015 U of Pitt. Mathematical Biology Seminar
- "The Infinitesimal Phase Response Curve of Oscillators in Piecewise Smooth Dynamical Systems"
  - Jul. 2017 SIAM Annual Meeting, Pittsburgh, PA

Service

Jul. 2021	Judge for poster presentations at SMB 2021
Jun. 2019–Jul. 2020	Organizer of the Brandeis Math Bio Seminar
Jul. 2019–Pres.	Volunteer advisory member of the SMB Neuroscience Subgroup
Jul. 2019	Judge for poster presentations at SMB 2019 Montreal
Apr. 2019	Guest lecturer, Science Outreach, Moder Patshala & Free Library of Philadelphia.
Jul. 2017	Volunteer kit-stuffing at the SIAM Annual Meeting
Mar. 2017	Volunteer lifeline at the Pitt Integration Bee

Conferences and Posters

Jun. 2021	Poster, Society for Mathematical Biology, University of Montreal
Jun. 2019	Attendance, 79th New England Complex Fluids, Boston University
Nov. 2019	Attendance, CMSA Workshop, Harvard University
Mar. 2019	Poster, MINS Symposium Philadelphia, Pennsylvania
Sep. 2018	Poster, Auditory SPLASH Conference Philadelphia, Pennsylvania
May. 2015	Poster, SIAM: Dynamical Systems Snowbird, Utah
May. 2011	Attendance, SIAM: Dynamical Systems, Snowbird, Utah
Aug. 2010	Oral presentation, Mathematical Association of America MathFest, Pittsburgh, PA
Jul. 2010	Attendance, SIAM: Life Sciences, Pittsburgh, PA