Youngmin Park

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Employment

June 2019 – Present	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. "The Dynamics of Vesicles Driven Into Closed Constrictions by Molecular Motors." Bulletin of Mathematical Biology. 82.141 (2020).
2. **Park, Y.**, Geffen, M.N. "A Circuit Model of Auditory Cortex." PLOS Computational Biology. 17.6:e1008016 (2020).
3. Ermentrout, G.B., **Park, Y.**, Wilson, D. "Recent advances in coupled oscillator theory." Philosophical Transactions A. 377. (2019).
4. **Park, Y.**, Ermentrout, G.B. "A Multiple Timescales Approach to Bridging Spiking- and Population-level Dynamics." Chaos. 28.8:083123 (2018).
5. **Park, Y.**, Ermentrout, G.B. "Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation." SIADS 17.1:931–981 (2018).
6. **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).
7. **Park, Y.**, Ermentrout, G.B. "Weakly Coupled Oscillators in a Slowly Varying World." Springer Journal of Computational Neuroscience 40.3:269–281 (2016).
8. 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).

Recently Submitted:

1. Fai, T.G., **Park, Y.** "Global asymptotic stability of an active disassembly model of flagellar length control." https://arxiv.org/abs/2010.08163.
2. **Park, Y.**, Wilson, D. "High-Order Accuracy Computation of Coupling Functions for Strongly Coupled Oscillators." https://arxiv.org/abs/2010.01194.

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).

Presentations

- "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, Zoom
  - Jun. 2020 SIAM Life Sciences, Zoom
  - Jun. 2020 Brandeis Mathematical Biology Seminar
  - Jan. 2020 Aspen Center for Physics, Aspen, CO
  - Nov. 2019 APS Fluids, Seattle, WA
  - Aug. 2019 Society for Mathematical Biology, Zoom
- "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 Pittsburgh Mathematical Biology Seminar
- "The Infinitesimal Phase Response Curve of Oscillators in Piecewise Smooth Dynamical Systems"
  - Jul. 2017 SIAM Annual Meeting, Pittsburgh, PA

Honors and Awards

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)

Teaching

School	Type	Class	Term(s)
Brandeis	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

Service

Jun. 2019–Jul. 2020	Organizer for the Brandeis Math Bio Seminar
Jul. 2019–Pres.	Volunteer member of the SMB Neuroscience Subgroup Board of Directors
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

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