

Youngmin PARK, PhD

PERSONAL DATA

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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

PUBLICATIONS

Park, Y., Fai, Thomas, G., “The Dynamics of Vesicles Driven Into Closed Constrictions by Molecular Motors” (Submitted to Bulletin of Mathematical Biology).

Park, Y., Geffen, M.N., “A Unifying Mechanistic Model of the Auditory Cortex with Inhibitory Subtypes” (Accepted, PLOS Computational Biology).

Ermentrout, G.B., **Park, Y.**, Wilson, D., “Recent advances in coupled oscillator theory” Philosophical Transactions A. 377. (2019)

Park, Y., Ermentrout, G.B. “A Multiple Timescales Approach to Bridging Spiking- and Population-level Dynamics.” Chaos. 28.8 (2018).

Park, Y., Ermentrout, G.B. “Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation.” SIADS 17.1 (2018): 931–981.

Park, Y., Shaw, K.M. Chiel, H.J. Thomas, P.J. “The Infinitesimal Phase Response Curve of Oscillators in Piecewise Smooth Dynamical Systems.” EJAM (2018).

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 (2017): 493–505.

Park, Y., Ermentrout, G.B. “Weakly Coupled Oscillators in a Slowly Varying World.” Springer Journal of Computational Neuroscience 40.3 (2016): 269–281.

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 (2012): 350–91.

TALKS

“Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation”.
Boston University, March 2019 (talk cancelled due to coronavirus),

“The Dynamics of Vesicles Driven through Closed Constrictions by Molecular Motors”.
Aspen Center for Physics, Aspen, CO, January 2020,

“The Dynamics of Vesicles Driven through Closed Constrictions by Molecular Motors”.
APS Fluids, Seattle, WA, November 2019,

“Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation”.
Society for Mathematical Biology, University of Montreal, July 2019,

“Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation”.
SIAM Dynamical Systems, Snowbird, Utah, May 2019,

“Weakly Coupled Oscillators in a Slowly Varying World”.
Computational Neuroscience Initiative Seminar,
Philadelphia, PA, September 25 2018.

“The Infinitesimal Phase Response Curve of Oscillators in Piecewise Smooth
Dynamical Systems”. SIAM Annual Meeting, Pittsburgh, PA, July 11 2017.

“Weakly Coupled Oscillators in a Slowly Varying World”.
SIAM Dynamical Systems, Snowbird, Utah, May 24 2017;

HONORS AND AWARDS

2017-2018 Andrew Mellon Predoctoral Fellowship
2017 SIAM Student Travel Award
2016 Elizabeth Baranger Teaching Award (nominated)
2012 SPUR (Summer Program for Undergraduate Research)

TEACHING

University of Pittsburgh

Year	Term	Type	Class
2017	Summer Spring	Lecture	Differential Equations (MATH 0290, 14 students)
		Grading	Differential Equations 1 (MATH 1270) x2
		Grading	Differential Equations 2 (MATH 1280)
		Grading	Complex Variables and Applications (MATH 1560)
		Recitation	Comput. Neurosci. (MATH 1370, 21 students)
2016	Fall	Recitation	Business Calculus (MATH 0120, 20–24 students each) x3
	Summer	Lecture	Differential Equations (MATH 0290, 23 students)
	Spring	Recitation	Calculus 3 (MATH 0240, 28 students)
		Grading	Ordinary Differential Equations 1 (MATH 1270) x2
2015	Fall	Recitation	Calculus 1 (MATH 0220, 25 students)
		Recitation	Calculus 2 (MATH 0230, 25 students)

		Grading	Ordinary Differential Equations 1 (MATH 1270)
	Summer	Lecture	Matrices and Linear Algebra (MATH 0280, 27 students)
	Spring	Lecture	Discrete Math. Structures (MATH 0400, 33 students)
		Grading	Matrices and Linear Algebra (MATH 0280) x2
2014	Fall	Recitation	Calculus 1 (MATH 0220, 25 students each) x3
	Summer	Lecture	Differential Equations (MATH 0290, 9 students)
2013	Fall	Recitation	Business Calculus (MATH 0120, 23 students)
		Grading	Differential Equations (MATH 0290) x2

Oberlin College

2013 Winter Assistant Computational Neuroscience (Keith Downing)

SERVICE

APR. 2019 Guest lecturer for Science Outreach at Moder Patshala and the Free Library of Philadelphia.
JUL. 2017 Volunteer kit-stuffing at the SIAM Annual Meeting
MAR. 2017 Volunteer lifeline at the Pitt Integration Bee

CONFERENCES, POSTERS, AND SUMMER SCHOOLS

MAR. 2019 MINS Symposium (Conference)
Poster Presentation. Philadelphia, Pennsylvania
SEP. 2018 Auditory SPLASH Conference (Conference)
Poster Presentation. Philadelphia, Pennsylvania
SEP. 2016 Advanced Computational Neuroscience (Summer School)
Max Planck Institute for Dynamics and Self Organization
Göttingen, Germany
AUG. 2015 Methods in Computational Neuroscience (Summer School)
Marine Biological Laboratory, Woods Hole, MA
MAY. 2015 Society of Industrial and Applied Math: Dynamical Systems (Conference)
Poster Presentation. Snowbird, Utah
MAY. 2011 Society of Industrial and Applied Math: Dynamical Systems (Conference)
AUG. 2010 Mathematical Association of America MathFest (Conference)
Oral Presentation. Pittsburgh, PA
JUL. 2010 MBI Summer Program (Summer School)
Mathematical Biosciences Institute, Columbus, OH
JUL. 2010 Society of Industrial and Applied Math: Life Sciences (Conference)
Pittsburgh, PA