Youngmin Park, PhD

Personal Data

Date of Birth:	28 October 1988
Citizenship:	USA
Address:	Department of Otorhinolaryngology University of Pennsylvania 3400 Spruce St. 5 Ravdin Philadelphia, PA 19104
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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., Geffen, M.N.,"A Unifying Mechanistic Model of the Auditory Cortex with Inhibitory Subtypes" (In Preparation).

Ermentrout, G.B., **Park, Y.**, Wilson, D.,"Weakly Coupled Oscillators and Important Extensions for Neuroscientific Applications" (Submitted).

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.

Invited Presentations

"Exploiting a Separation of Timescales to Extend the Theory of Weakly Coupled Oscillators". Computational Neuroscience Initiative Seminar, Philadelphia, PA, September 25, 2018.

"A Multiple Timescales Approach to Bridging Spiking- and Population-level Activity". Mathematical Biology Seminar, Pittsburgh, PA, February 1, 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;

"Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation". Mathematical Biology Seminar, Pittsburgh, PA, March 30, 2017.

"Re-deriving the Phase Reduction in the Case of Strong Perturbations". SIAM Life Sciences, Boston, MA, July 13, 2016.

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	**Lecture**	Differential Equations (MATH 0290, 14 students)
	Spring	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 (MATAH 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

Jul. 2017 Volunteer kit-stuffing at the SIAM Annual Meeting

Mar. 2017 Volunteer lifeline at the Pitt Integration Bee

Conferences and Summer Schools

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