

# Youngmin PARK

## PERSONAL DATA

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DATE OF BIRTH: 28 October 1988  
CITIZENSHIP: USA  
ADDRESS: 301 Thackeray Hall Pittsburgh, PA 15260  
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EMAIL: [ympark1988@gmail.com](mailto:ympark1988@gmail.com)  
WEB: [youngmp.github.io](http://youngmp.github.io)

## EDUCATION

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AUG. 2013 – MAY 2018 (Expected) PhD Mathematics, **University of Pittsburgh**  
Thesis: TBD | Advisor: G. Bard Ermentrout

SEP. 2016 Advanced Computational Neuroscience  
**Max Planck Institute for Dynamics and Self Organization**  
Göttingen, Germany

AUG. 2015 Methods in Computational Neuroscience  
**Marine Biological Laboratory**, Woods Hole, MA

AUG. 2012 – AUG. 2013 MS Applied Math **Case Western**, Cleveland, OH  
<sup>a</sup>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

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**Park, Y.**, Ermentrout, G.B. “Microscopic Synchronization in the Mean Field Description of Oscillators with Slowly Varying Synapses (In preparation)

<sup>a</sup>**Park, Y.**, Ermentrout, G.B. “Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation.” SIADS (Submitted)

<sup>a</sup>**Park, Y.**, Shaw, K.M. Chiel, H.J. Thomas, P.J. “The Infinitesimal Phase Response Curve of Oscillators in Piecewise Smooth Dynamical Systems.” EJAM. (Submitted)

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

<sup>b</sup>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.” SIAM Journal on Applied Dynamical Systems 11.1 (2012): 350–91.

## BOOK CHAPTERS

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<sup>a</sup>**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. (In press)

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<sup>a</sup>Source code: <https://github.com/youngmp>

<sup>b</sup>Source code: [https://github.com/CWRUChielLab/Shaw\\_et\\_al\\_2012\\_code](https://github.com/CWRUChielLab/Shaw_et_al_2012_code)

## INVITED PRESENTATIONS

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

“Weakly Coupled Oscillators in a Slowly Varying World”. Oral presentation at SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 24, 2017.

“Weakly Coupled Oscillators in a Slowly Varying World”. Oral presentation at SIAM Conference on the Life Sciences, Boston, MA, July 13, 2016.

## TEACHING

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### 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)
2016	Fall	Recitation	Comput. Neurosci. (MATH 1370, 21 students)
	Summer	Recitation	Business Calculus (MATH 0120, 20-24 students each) x3
	Spring	Lecture	Differential Equations (MATH 0290, 23 students)
		Recitation	Calculus 3 (MATH 0240, 28 students)
2015	Fall	Grading	Ordinary Differential Equations 1 (MATH 1270) x2
		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
	Fall	Recitation	Calculus 1 (MATH 0220, 25 students each) x3
2014	Summer	Lecture	Differential Equations (MATH 0290, 9 students)
	2013	Recitation	Business Calculus (MATH 0120, 23 students)
		Grading	Differential Equations (MATH 0290) x2

### Oberlin College

2013 Winter Assistant Computational Neuroscience (Keith Downing)

## HONORS AND AWARDS

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2017-2018 Andrew Mellon Predoctoral Fellowship  
2016 Elizabeth Baranger Teaching Award (nominated)  
2012 SPUR (Summer Program for Undergraduate Research)/P-SURG

## COMPUTER SKILLS

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Web: Drupal, HTML/CSS  
Research: MCell/DReAMM, R, NEURON, UNIX, Mathematica, XPP  
Languages: Python (Numpy, Scipy, Matplotlib), MATLAB

## Programming Projects

Py\_XPPCALL: Open source Python binding to XPPAUT with a focus on ease of use and extensive documentation.

[https://github.com/youngmp/Py\\_XPPCALL](https://github.com/youngmp/Py_XPPCALL)

XPPScripts: A collection of Python scripts written to modify XPP data.

<https://github.com/youngmp/xppscripts>