

Youngmin PARK, PhD

Department of Mathematics
Goldsmith 218 Mailstop 050
415 South St. Waltham, MA 02453

Tel: (412) 805-0283
Email: ypark@brandeis.edu
Web: youngmp.github.io

EMPLOYMENT

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| JUNE 2019 – PRESENT | Postdoctoral Fellow Brandeis University Advisor: Thomas Fai |
| MAY 2018 – MAY 2019 | Postdoctoral Fellow University of Pennsylvania Advisor: Maria N. Geffen |

EDUCATION

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| 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

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| 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 |

PUBLICATIONS

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1. **Park, Y.**, Fai, Thomas, G., “The Dynamics of Vesicles Driven Into Closed Constrictions by Molecular Motors” (Submitted to Bulletin of Mathematical Biology).
 2. **Park, Y.**, Geffen, M.N., “A Circuit Model of Auditory Cortex.” PLOS Computational Biology (Accepted, 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 (2018).
 5. **Park, Y.**, Ermentrout, G.B. “Scalar Reduction of a Neural Field Model with Spike Frequency Adaptation.” SIADS 17.1 (2018): 931–981.
 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 (2018).
 7. **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.
 8. **Park, Y.**, Ermentrout, G.B. “Weakly Coupled Oscillators in a Slowly Varying World.” Springer Journal of Computational Neuroscience 40.3 (2016): 269–281.
 9. 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

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- “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”
 - 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
- “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

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| 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

| Year | Term | Type | Class | Student # |
|---------------------------------|------------|----------------|---|------------------------|
| <u>MBL Woods Hole</u> | | | | |
| 2020 | Summer | Assistant | Methods in Computational Neuroscience (Postponed for 2021 due to COVID) | - |
| <u>Brandeis University</u> | | | | |
| 2020 | Spring | <u>Lecture</u> | Applied Linear Algebra (MATH 15a) | 47 |
| <u>University of Pittsburgh</u> | | | | |
| 2017 | Summer | <u>Lecture</u> | Differential Equations (MATH 0290) | 14 |
| | Spring | Grading | Differential Equations 1 (MATH 1270, 2 sections) | 30–36 each |
| 2016 | Fall | Grading | Differential Equations 2 (MATH 1280) | 26 |
| | | Grading | Complex Variables and Applications (MATH 1560) | 27 |
| | | Recitation | Computational Neuroscience (MATH 1370) | 21 |
| | | Recitation | Business Calculus (MATH 0120, 3 sections) | 20–24 each |
| | | <u>Lecture</u> | Differential Equations (MATH 0290) | 23 |
| 2015 | Spring | Recitation | Calculus 3 (MATH 0240) | 28 |
| | Fall | Grading | Ordinary Differential Equations 1 (MATH 1270, 2 sections) | 24–30 each |
| 2014 | | Summer | Recitation | Calculus 1 (MATH 0220) |
| | Recitation | | Calculus 2 (MATH 0230) | 24 |
| 2013 | Fall | Grading | Ordinary Differential Equations 1 (MATH 1270) | 31 |
| | | <u>Lecture</u> | Intro. to Matrices and Linear Algebra (MATH 0280) | 27 |
| | | <u>Lecture</u> | Discrete Math. Structures (MATH 0400) | 33 |
| 2014 | Fall | Grading | Matrices and Linear Algebra (MATH 0280, 2 sections) | 30–62 |
| | | Recitation | Calculus 1 (MATH 0220, 3 sections) | 25 each |
| 2013 | Fall | <u>Lecture</u> | Differential Equations (MATH 0290) | 9 |
| | | Recitation | Business Calculus (MATH 0120) | 23 |
| 2013 | Fall | Grading | Differential Equations (MATH 0290, 2 sections) | 31 each |
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| <u>Oberlin College</u> | | | | |
| 2013 | Winter | Assistant | Computational Neuroscience | 20 |

SERVICE

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| JUN. 2019–JUL. 2020 | Organizer for the Brandeis Math Bio Seminar |
| JULY 2019–PRESENT | Member of the SMB Neuroscience Subgroup Board of Directors |
| JULY 2019 | Judge for poster presentations at SMB 2019 Montreal |
| 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 AND POSTERS

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| MAR. 2019 | Poster at MINS Symposium Philadelphia, Pennsylvania |
| SEP. 2018 | Poster at Auditory SPLASH Conference Philadelphia, Pennsylvania |
| MAY. 2015 | Poster at Society of Industrial and Applied Math: Dynamical Systems Snowbird, Utah |
| MAY. 2011 | Attended Society of Industrial and Applied Math: Dynamical Systems Conference |
| AUG. 2010 | Oral presentation at Mathematical Association of America MathFest 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 |