Curriculum Vitae

Joseph P. McKenna

Contact Information

Florida State University
Department of Mathematics
1017 Academic Way
Room 208 Love Building
Tallahassee, FL 32306-4510

Education

08/12 - present — Ph.D. candidate, Mathematics (expected 12/16), Florida State University, Tallahassee, FL. GPA: 3.9, Advisor: Dr. Richard Bertram.

- Research focus: Dynamical Systems, Pancreatic Islet and β-cell Physiology, Electrically Excitable Cells
- Relevant Coursework: Partial/Ordinary/Stochastic Differential Equations, Computational Biology, Genetics, Numerical Analysis, Machine Learning, Monte Carlo Methods

08/04 - 05/08 — B.A., Mathematics, St. Mary's College of Maryland, St. Mary's City, MD. Major GPA: 3.5, Thesis: *Regular Polytopes and Symmetry.*

- GRE: Quantitative 167 (95%), Verbal 162 (90%)

09/09 -12/09 — Graduate Non-Degree, University of Illinois, Chicago, IL. GPA: 4.0.

Teaching Experience

08/12 - present — Graduate Teaching Assistant, Florida State University

05/16 - present	Trigonometry Proctor
08/15 - 05/16	Foundations of Computational Math Teaching Assistant
08/15 - 12/15	Applied Computational Math Instructor (graduate level)
05/15 - 08/15	Calculus II Instructor
01/14 - 05/15	Calculus I Instructor
08/13 - 12/14	Precalculus Instructor
08/12 - 05/13	Business Calculus, Precalculus, College Algebra, Trigonometry, and Liberal Arts Mathematics Proctor

08/10 - 06/12 — Junior High School Instructor, Peace Corps Ghana

09/09 - 12/09 — Tutor, Mathematical Science Learning Center, University of Illinois at Chicago

09/07 - 05/08 — Teaching Assistant, St. Mary's College of Maryland

Publications and Research Experience

05/16	J. P. McKenna, R. Dhumpa, N. Mukhitov, M. G. Roper, and R. Bertram, *Glucose oscillations can activate an endogenous oscillator in pancreatic islets*, in press, PLoS Computational Biology.
08/15	J. P. McKenna, J. Ha, M. J. Merrins, L. S. Satin, A. Sherman, and R. Bertram. *Calcium effects on ATP production and consumption have key regulatory roles on oscillatory islet activity*, Biophysical Journal, Vol. 110, Feb. 2016, 733-742. doi: 10.1016/j.bpj.2015.11.3526.
08/15	M. J. Merrins, C. Poudel, J. P. McKenna, J. Ha, A. Sherman, R. Bertram, L. S. Satin, *Phase analysis of metabolic oscillations and membrane potential in pancreatic islet β-cells*, Biophysical Journal, Vol. 110, Feb. 2016, 691-699. doi: 10.1016/j.bpj.2015.12.029.
05/14 - 08/14	Summer Internship Program in Biomedical Research, Laboratory of Biological Modeling, National Institutes of Health. Developed model of metabolic oscillations in pancreatic β-cells to account for previously unexplained data on pulsatile insulin secretion. Advisor: Dr. Arthur Sherman.
10/11	J. P. McKenna, correct solution to *More and More Balls in Urns*, in American Mathematical Monthly, 118(8), October 2011, Problems and Solutions, pp 750-751. doi: 10.4169/amer.math.monthly.118.08.747.
4/11	J. P. McKenna, correct solution to *Permutations with specified left-to-right maxima*, in Mathematics Magazine, 84(2) April 2011, Problems and Solutions, pp 153-154. doi: 10.4169/math.mag.84.2.150.
10/10	J. P. McKenna, correct solution to *Counting block fountains of coins*, in Mathematics Magazine, 83(4) Oct. 2010, Problems and Solutions, pp 305. doi: 10.4169/mathmaga.83.4.0304a.
08/07 - 05/08	Undergraduate Thesis: Regular Polytopes and Symmetry, St. Mary's College of Maryland. Wrote exposition describing rotational and reflectional symmetries of four-dimensional analogues to the Platonic solids. Created online, interactive Java applet visualizations. Advisor: Dr. Alex Meadows.

Work Experience

07/11 - 06/12	Community-based Project Manager, Ghana, West Africa. Coordinated the proposal, international fundraising, construction, and regular operation of a junior high school computer lab that introduced computer-based learning to educators and students in a remote village. Resulted in the best-in-district performance on national high school entrance exams for three subsequent years: 2013, 2014, and 2015.
11/10 - 06/12	Editor, Celebrate Languages Audio Project, Peace Corps Ghana. Created Java program that assembled language-learning lessons from interviews with Ghanaian language speakers.
11/08 - 03/09	Computer Hardware Engineer, FreeGeek, Chicago, IL. Assembled PCs from donated parts and installed Linux to offer low-cost computing to the economically disadvantaged.

Honors and Awards

04/16	Distinguished Teaching Assistant, Florida State University
03/16	Student Travel Award, Society for Industrial and Applied Mathematics Conference on the Life Sciences
03/16	Student Travel Award, "Biology and Medicine Through Mathematics" Conference, Virginia Commonwealth University
09/15	Landahl Travel Grant, Society for Mathematical Biology Annual Conference
06/15	Evelyn and John Baugh Scholarship, Florida State University Department of Mathematics
07/13 - 05/14	Graduate Assistance in Areas of National Need Fellow, U.S. Department of Education
05/08	National Collegiate Honors Council Diploma, St. Mary's College of Maryland
5/07 & 5/08	William Lowell Putnam Competition Award, St. Mary's College of Maryland Department of Mathematics
12/06	NCAA Division III Soccer Athlete, St. Mary's College of Maryland
12/05 & 05/08	Dean's List, St. Mary's College of Maryland
9/04 - 5/08	Presidential Award, St. Mary's College of Maryland
06/04	Eagle Scout, Boy Scouts of America
05/03 & 05/04	Magna Cum Laude, National Latin Exam

Presentations

07/16	Invited minisymposium talk (expected), *Glucose oscillations can activate an endogenous oscillator in pancreatic islets*, Society for Industrial and Applied Mathematics Conference on the Life Sciences, Boston, MA
05/16	Contributed Poster, *Reducing a conductance-based neuron model to normal form*, "Biology and Medicine Through Mathematics" Conference, Virgina Commonwealth University
01/16	*Rescuing rhythmic insulin release in pancreatic islets lost to hyperglycemia*, Florida State University Biomathematics Seminar
07/15	Invited minisymposium talk, *Death and reincarnation of the Dual Oscillator Model for islet oscillations*, Society for Mathematical Biology Annual Meeting, Atlanta, GA
04/15	*Classification of bursting mappings*, Florida State University Biomathematics Journal Club
08/14	Contributed Poster, *Mathematical model of metabolic oscillations in pancreatic β-cells*, NIH Summer Intern Poster Session

01/14	*Chaos in the Hodgkin-Huxley Model*, Florida State University Biomathematics Journal Club
06/13	*Complex dynamics of compound bursting with burst episode composed of different bursts*, Florida State University Biomathematics Journal Club
05/08	Undergraduate Thesis Defense, *Regular Polytopes and Symmetry*, St. Mary's College of Maryland

Technical Abilities

Programming	C, C++, Fortran, Python, MATLAB, UNIX, Java, XPP, AUTO, HTML, Javascript, CSS, LaTeX
Language	French (intermediate), Latin (intermediate), Twi (intermediate)

Memberships

12/14 - present	Society for Mathematical Biology
12/13 - present	Pi Mu Epsilon, National Honorary Mathematical Society.
09/13 - present	Program for Instructional Excellence, Florida State University
04/13 - present	Society for Industrial and Applied Mathematics
06/08 - present	Mathematical Association of America
09/04 - 05/08	Mathematics Club, St. Mary's College of Maryland

References

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