

Gary Marple

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EDUCATION

Ph.D. in *Applied and Interdisciplinary Math*, 4.0/4.0 GPA, University of Michigan, 2016

Dissertation: *Fast, High-order Algorithms for Simulating Vesicle Flows Through Periodic Geometries*
(Co-winner of the 2016 Peter Smereka Award for best AIM thesis)

Advisor: Shravan Veerapaneni

M.Sc. in *Applied and Interdisciplinary Math*, 4.0/4.0 GPA, University of Michigan, 2013

B.S. in *Mathematics*, 4.0/4.0 GPA, Colorado State University - Pueblo, 2011

B.S. in *Physics*, 4.0/4.0 GPA, Colorado State University - Pueblo, 2011

POSITIONS

Postdoctoral Researcher, Department of Mathematics, University of Michigan (Fall 2016 - Present)

PUBLICATIONS

1. A. Barnett, G. Marple, S. Veerapaneni, L. Zhao (2018). A Unified Integral Equation Scheme for Doubly-Periodic Laplace and Stokes Boundary Value Problems in Two Dimensions. *Communications on Pure and Applied Mathematics*, Vol 71(11), 2334-2380.
2. K. Liu, G. Marple, S. Li, S. Veerapaneni, J. Lowengrub (2017). Dynamics of a multicomponent vesicle in shear flow. *Soft Matter*, Vol. 13(19), 3521-3531.
3. G. Marple, A. Barnett, A. Gillman, S. Veerapaneni (2016). A Fast Algorithm for Simulating Multiphase Flows Through Periodic Geometries of Arbitrary Shape. *SIAM Journal of Scientific Computing*, Vol. 38(5), B740-B772.
4. O. Pak, Y. Young, G. Marple, S. Veerapaneni, H. Stone (2015). Gating of a mechanosensitive channel due to cellular flows. *Proceedings of the National Academy of Sciences*, Vol. 112(32), 9822-9827.
5. G. Marple, P. Purohit, S. Veerapaneni (2015). Equilibrium Shapes of Planar Elastic Membranes. *Physical Review E*, Vol. 92(1).
6. J. Brereton, A. Farid, M. Karnib, G. Marple, A. Quenon, A. Tefera (2011). Combinatorial and Automated Proofs of Certain Identities. *The Electronic Journal of Combinatorics*, Vol. 18(2).

TEACHING EXPERIENCE

Department of Mathematics, University of Michigan (2011 - Present)

Fall 2018, *Introduction to Numerical Methods* (Math 471), Primary Instructor

Fall 2017, *Introduction to Differential Equations* (Math 216), Primary Instructor

Winter 2017, *Introduction to Differential Equations* (Math 216), Primary Instructor

Fall 2016, *Calculus II* (Math 116), Primary Instructor

Fall 2013, *Calculus II* (Math 116), Primary Instructor

Winter 2013, *Introduction to Differential Equations* (Math 216), Teaching Assistant

Fall 2012, *Calculus II* (Math 116), Primary Instructor

Winter 2012, *Calculus I* (Math 115), Primary Instructor

Fall 2011, *Data Functions and Graphs* (Math 105), Primary Instructor

AWARDS

- Participated in the National Science Foundations Innovation Corps (I-Corps) program as the Entrepreneurial Lead (EL) for Team 578 (High Fidelity Simulation Software for Microfluidics). Our team received a grant worth \$50,000. (Fall 2015)
- University of Michigan's Mathematics Department summer fellowship (2012 - 2014)
- MCubed research assistantship from *Integrated Experimental and Computational Approach to Design of Drug Delivery Systems* project (Winter 2014)
- Research grant from *CO-AMP* for parametric optimal control research (Spring 2011)
- S-STEM scholarship from *National Science Foundation* (Fall 2008 - Spring 2011)
- Carpet Direct scholarship (Fall 2007 - Spring 2011)
- Summer research grant from *National Security Agency for Summer Undergraduate Research Institute in Experimental Mathematics* research at Michigan State University (2010)
- Gary Lamotte scholarship for physics (Fall 2009 - Spring 2010)
- Subway scholarship (Fall 2008 - Spring 2009)

COMPUTER SKILLS

Python, C/C++, MATLAB, Scikit-learn, TensorFlow