

ACADEMIC	<p>University of Michigan Fellow, Michigan Society of Fellows Assistant Professor of Complex Systems <i>Autumn 2018 - Spring 2021</i></p> <p>University of Pennsylvania Ph. D. Biology Advisor: Joshua Plotkin Thesis: <i>Null Models for Cultural and Social Evolution</i> <i>Autumn 2012 - Summer 2018</i></p> <p>Harvard Medical School, Dept. of Systems Biology Visiting Research Fellow Advisor: Walter Fontana <i>Winter 2012 - Summer 2012</i></p> <p>University of California, Los Angeles M. Sc. Biomathematics Advisor: Van Savage Thesis: <i>Automated measurements of vessel networks from MRI and comparison to scaling theory</i> <i>Autumn 2010 - Summer 2011</i></p> <p>Friday Harbor Laboratories, University of Washington Undergraduate Research Apprentice Advisors: Megan Dethier and Ken Sebens Thesis: <i>Vertical zonation, diversity, and succession in splash-zone biofilms on a temperate rocky shore</i> <i>Spring 2007</i></p> <p>University of Washington B. Sc. Physics Advisor: Vladimir Chaloupka Thesis: <i>Physical model algorithms for audio synthesis</i> <i>Autumn 2001 - Autumn 2004</i></p> <p>Seattle Central Community College <i>Autumn 2000 - Spring 2001</i></p>
PUBLICATIONS	<p><u>Newberry, M. G., Savage, V. M. (2019)</u> Self-Similar Processes Follow a Power Law in Discrete Logarithmic Space. <i>Physical Review Letters</i> 122, 158303. doi:10.1103/PhysRevLett.122.158303</p> <p><u>Newberry, M. G.¹, Ahern, C. A.¹, Clark, R., Plotkin, J. B. (2017)</u>. Detecting evolutionary forces in language change. <i>Nature</i> 551, 223-226. doi:10.1038/nature24455 Media coverage: AXIOS, The Atlantic, theguardian, Science, and others</p> <p><u>Tekin, E., Hunt, D., Newberry, M. G., Savage, V. M. (2016)</u>. Do vascular networks branch optimally or randomly across spatial scales? <i>PLoS Computational Biology</i> 12(11), p.e1005223. doi:10.1371/journal.pcbi.1005223</p> <p><u>Newberry, M. G., McCandlish, D. M., Plotkin, J. B. (2016)</u>. Assortative mating can impede or facilitate fixation of underdominant alleles. <i>Theoretical Population Biology</i> 112, 14-21. doi:10.1016/j.tpb.2016.07.003</p> <p><u>Newberry, M. G., Ennis, D. B., Savage, V. M. (2015)</u>. Testing foundations of biological scaling theory using automated measurements of vascular networks. <i>PLoS Computational Biology</i> 11(8), e1004455. doi:10.1371/journal.pcbi.1004455</p>
UNPUBLISHED MANUSCRIPTS	<p><u>Newberry, M. G., Plotkin, J. B. (in prep)</u> Measuring frequency-dependent selection in culture.</p> <p>Li, L., <u>Newberry, M. G.</u>, Dodson, P. (in prep) Variation in the vertebral centra length in sauropod dinosaurs.</p>
SOFTWARE	<p><u>Newberry, M. G.</u>, (unpublished) <code>fdse1</code>: infer frequency-dependent selection from timeseries (R and OCaml).</p> <p><u>Newberry, M. G.</u>, (2019) <code>dp1fit</code>: infer the exponent from power law distributed data using the discrete power law (R). https://github.com/mnewberry/dp1fit</p>

¹Joint first authors

Newberry, M. G., (2014-2017) Stemmanator: Use algorithms from phylogenetics to create a stemma codicum. (OCaml) <http://stemmanator.org>
Newberry, M. G., (2013) Signalarium: On-the-fly protein-protein interaction database. (OCaml) <https://github.com/mnewberry/signalarium>
Newberry, M. G., (2011-2017) Angicart: Segment vessel systems from radiographic images. (OCaml) <https://github.com/mnewberry/angicart>

TEACHING	Instructor of record, PHYS 413/MATH 404/CMPLXSYS 541, <i>Nonlinear Dynamics and Chaos</i> , University of Michigan Instructor of record, PHYS 413/MATH 404/CMPLXSYS 541, Designed and taught <i>Intro to Data Visualization</i> , Department of Making and Doing Teaching Assistantship, BIO 446, <i>Statistics for Biologists</i> , University of Pennsylvania Teaching Assistantship, BIO 446, <i>Statistics for Biologists</i> , University of Pennsylvania Designed and taught <i>Math Kung Fu</i> at The Public School, Los Angeles Physics Lab Instructor at Garfield High School, Seattle, WA	<i>Autumn 2020</i> <i>Autumn 2019</i> <i>April 29, 2015</i> <i>Autumn 2014</i> <i>Autumn 2013</i> <i>Summer, 2011</i> <i>Spring 2006</i>
MENTORSHIP	Jingyi Gao (U Michigan), Michigan Mathematics NSF REU Program Topic: Generating fractal trees Chenhe Zhang (Zhejiang University), informal volunteership Topic: Generalized Ewens distributions Helen Yeh (U Michigan), Undergraduate Research Opportunities Program Topic: Frequency-dependence in music popularity	<i>Summer 2020</i> <i>Summer 2019</i> <i>Autumn 2018-Spring 2019</i>
TALKS	Complex Systems Seminar, University of Michigan Community College Summer Research Fellowship Program panelist Complex Systems Seminar, University of Michigan PPRC Ecology Conference, Columbia University Philadelphia Evolution Group mixer, Drexel University Acetarium Residency talk, Boston, MA New England Complex Systems Institute, Boston, MA PPRC Ecology Conference, Columbia University Toorcamp, Neah Bay, WA	<i>2019</i> <i>2019</i> <i>2018</i> <i>2017</i> <i>2016</i> <i>2014</i> <i>2014</i> <i>2013</i> <i>2012</i>
(Co)-ORGANIZED	Michigan Symposium on Emergence in Communication & Learning	<i>2019</i>
ACADEMIC HONORS	Fellowship, Michigan Society of Fellows SAS Dissertation Completion Fellowship, University of Pennsylvania Biology Departmental Teaching Award, University of Pennsylvania	<i>2018</i> <i>2017</i> <i>2013</i>
REVIEWER	Proceedings of the Royal Society B Journal of the Royal Society Interface Journal of Theoretical Biology Glossa Human Evolutionary Sciences Nature Human Behaviour	
SERVICE AND COMMUNITY	All Hands Active Hackerspace <i>Volunteer and advisor to the board</i> Philadelphia Traction Company <i>Scientist in Residence</i> The Hacktory <i>Volunteer</i> Philadelphia Botanical Club <i>Member</i> Department of Making and Doing <i>Power User (advisory board)</i> Manning Publications Co <i>Technical Proofreader for Gnuplot in Action</i> San Juan Monitoring Project <i>Relational Database Consultant</i> University of Washington Botany Greenhouse <i>Volunteer</i>	<i>2019 - 2020</i> <i>2012 - 2018</i> <i>Oct 2016 - May 2018</i> <i>April - Oct. 2015</i> <i>Oct. 2008</i> <i>May. 2007 - Feb. 2008</i> <i>Nov. 2006 - Mar. 2007</i>

	Seattle Community Colocation Project <i>Founding Member</i>	<i>June 2004 - June 2020</i>
PROFESSIONAL	Border Stylo Senior Engineer	<i>June 2009 - July 2010</i>
	Institute for Environmental Research and Education Software Development Consultant	<i>Feb. 2008 - June 2009</i>
	SiteScout (acquired by Rubicon Project) Software Developer	<i>June 2006 - Jan. 2008</i>
	Pacific Wildland Fire Science Laboratory , US Forest Service Data Analyst, Field technician, Systems Administrator	<i>July 2002 - Nov. 2005</i>
	Seattle Central Community College Computer Lab Assistant	<i>Oct. 2000 - Aug. 2001</i>