

Aaron P. Ragsdale

Program in Applied Mathematics
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Education

Ph.D. Applied Mathematics, University of Arizona, 2016 (expected), entered Fall 2010

- Advisor: Ryan Gutenkunst
- Ph.D. Minor in Ecology and Evolutionary Biology
- M.Sc. in Applied Mathematics, University of Arizona, 2012

B.S. Mathematics, University of Portland, Portland, OR

Publications

Peer-Reviewed Articles

2016

Triallelic population genomics for inferring correlated fitness effects of same site nonsynonymous mutations. **AR**, AJ Coffman, P Hsieh, TJ Struck, RN Gutenkunst. *Genetics* May 2016

Book Chapters

2016

Sloppiness and the geometry of parameter space. BK Mannakee, **AR**, MK Transtrum, RN Gutenkunst; in *Uncertainty in Biology: a Computational Modeling Approach*, Springer 2015. Ed. by D Gomez-Cabrero and L Geris

Manuscripts in preparation (writing stage):

Significant genetic structure and evidence of founder effects among cultivated *Brassica rapa* uncovered by transcriptomics. *In prep* Xinshuai Qi, Hong An, **AR**, Tara E. Hall, J. Chris Pires, Michael S. Barker

Manuscripts in preparation (analysis stage):

Two locus allele frequency statistics with demography and selection using a diffusion approach. *In prep* **AR** and RN Gutenkunst

Inference of the joint distribution of fitness effects from recently isolated populations. *In prep* AJ Coffman, **AR**, RN Gutenkunst

Conspecific attraction and species borders. *In prep* JP McEntee* and **AR***

* indicates equal contribution

Teaching

Courses Taught, University of Arizona

Calculus 1 (*Spring 2014*)

College Algebra (*Fall 2011, Spring 2012*)

Responsibilities

Sole instructor of record for class sizes of 30+ undergraduate students

Prepared lectures, assigned and graded homeworks and quizzes, and designed and graded exams

Reference: Donna Krawczyk (*Instructional supervisor, Spring 2014*)

Presentations, conferences and workshops

“Two locus allele frequency statistics with demography and selection using a diffusion approach” (poster), the Allied Genetics Conference (*July 13-17, 2016*)

“Demography and natural selection: inferring population evolutionary history from genetic sequencing data” (invited talk), U. Arizona and CIMAT Workshop on Interdisciplinary Statistics (*June 2-3, 2016*)

“Quantifying the roles of mutational identity and location for protein evolution using triallelic population genetics” (accepted talk), the Society for Molecular Biology and Evolution Annual Meeting (*July 12-16, 2015*)

“A diffusion approach for incorporating linkage disequilibrium in demographic inferences” (poster), the Society for Molecular Biology and Evolution Annual Meeting (*June 8-12, 2014*)

“Incorporating linkage disequilibrium into diffusion-based inference of demographic history” (poster), the Society for Mathematical Biology Annual Meeting and Conference (*June 10-13, 2013*)

Attended the Montreal Spring School in Population Genomics and Genetic Epidemiology (*May 28 - June 2, 2012*)

Awards, Fellowships, etc

H.E. Carter Travel Award to attend the Society for Molecular Biology and Evolution annual meeting (*July 2015*)

Travel award to attend the Society for Mathematical Biology annual meeting and conference (*June 2013*)

President of the University of Arizona Student Chapter of SIAM (*2012-2013*)

NSF/IGERT fellowship in Comparative Genomics (*2012-2013*)

Travel Award to attend the Montreal Spring School of Population Genomics and Genetic Epidemiology (*May 2012*)

NSF/VIGRE fellowship from the U. Arizona Applied Mathematics Department (*2010-2011*)

Timothy Bergquist Math Scholarship, U. Portland (*2009 - 2010*)

Member of the Student Advisory Committee to the Dean for the Math Department, U. Portland (*2009 - 2010*)

University of Portland’s President’s Scholarship (*2006 - 2010*)

References

Ryan Gutenkunst, Assistant Professor, Molecular and Cellular Biology, University of Arizona

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Joe Watkins, Professor, Mathematics, University of Arizona

Phone: (520) 621-5245

Email: jwatkins [at] math.arizona.edu

Mike Barker, Assistant Professor, Environmental and Evolutionary Biology, University of Arizona

Phone: (520) 621-2213

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