Aaron P. Ragsdale

Postdoctoral Researcher
Langebio Cinvestav
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Research positions

Postdoctoral Researcher (August 2020 – August 2021)

Andres Moreno Lab, Langebio, Cinvestav, Irapuato

Postdoctoral Researcher (March 2017 – present)

Simon Gravel Lab, Department of Human Genetics, McGill University

Research Assistant (August 2011 – Feb 2017)

Ryan Gutenkunst Lab, Department of Molecular and Cellular Biology, University of Arizona
Dissertation: "Multi-Allele Population Genomics for Inference of Demography and Natural Selection"

Education

Ph.D. Applied Mathematics, University of Arizona, Tucson, AZ, USA, December 2016

Graduate advisor: Ryan Gutenkunst, Molecular and Cellular Biology
Ph.D. Minor in Ecology and Evolutionary Biology

B.S. Mathematics, Magna Cum Lauda, University of Portland, Portland, OR, USA, May 2010

Publications

Preprints

Aaron P. Ragsdale, 2021. Can we distinguish modes of selective interactions using linkage disequilibrium? *BioRxiv*, doi: 10.1101/2021.03.25.437004.

Kevin A. Bird, Michael A. Hardigan, **Aaron P. Ragsdale**, Steven J. Knapp, Robert VanBuren, Patrick P. Edger, 2021. Diversification, Spread, and Admixture of Octoploid Strawberry in the Western Hemisphere. *BioRxiv*, doi: 10.1101/2021.03.08.434492.

Shadi Zabad, **Aaron P. Ragsdale**, Rosie Sun, Yue Li, Simon Gravel, 2020. Assumptions about frequency-dependent architectures of complex traits bias measures of functional enrichment. *BioRxiv*, doi: 10.1101/2020.10.23.352427.

Xin Huang, Alyssa Lyn Fortier, Alec J. Coffman, Travis J. Struck, Megan N. Irby, Jose E. Léon-Burguete, **Aaron P. Ragsdale**, Ryan N. Gutenkunst, 2019. Inferring genome-wide correlations of mutation fitness effects between populations. *BioRxiv*, doi: 10.1101/703918.

Peer-reviewed articles

Aaron P. Ragsdale, Dominic Nelson, Simon Gravel, Jerome Kelleher, 2020. Lessons learned from bugs in models of human history. *American Journal of Human Genetics*, 107(4), 583-588. *BioRxiv* link.

Jeffrey R. Adrion*, Christopher B. Cole*, Noah Dukler*, Jared G. Galloway*, Ariella L. Gladstein*, Graham Gower*, Christopher C. Kyriazis*, **Aaron P. Ragsdale***, Georgia Tsambos*, (17 additional authors), Jerome Kelleher, Andrew D. Kern, 2020. A community-maintained standard library of population genetic models. *eLife*, 9, e54967.

Dominic Nelson, Jerome Kelleher, **Aaron P Ragsdale**, Gil McVean, Simon Gravel, 2020. Accounting for long-range correlations in genome-wide simulations of large cohorts. *PLoS Genetics*, 16(5), e1008619. *BioRxiv* link.

Aaron P Ragsdale and Simon Gravel, 2020. Unbiased estimation of linkage disequilibrium from unphased data. *Molecular Biology & Evolution*, 37(3), 923-932. *BioRxiv* link.

Aaron P Ragsdale and Simon Gravel, 2019. Models of archaic admixture and recent history from two-locus statistics. *PLoS Genetics*, 15(6), e1008204. (*BioRxiv* link)

Aaron P Ragsdale, Claudia Moreau, Simon Gravel, 2018. Genomic inference using diffusion models and the allele frequency spectrum. *Curr. Opinion in Genetics & Devel*, 53, 140-147. (*BioRxiv* link)

Julien Jouganous, Will Long, **Aaron P Ragsdale**, Simon Gravel, 2017. Inferring the joint demographic history of multiple populations: beyond the diffusion approximation. *Genetics*, 206(3), 1549-1567.

Aaron P Ragsdale and Ryan N Gutenkunst, 2017. Inferring demographic history using two-locus statistics. *Genetics*, 206(2), 1037-1048. (*BioRxiv* link)

Xinshuai Qi, Hong An, **Aaron P Ragsdale**, Tara E Hall, Ryan N Gutenkunst, J Chris Pires, Michael S Barker, 2017. Genomic inferences of domestication events are corroborated by written records in *Brassica rapa*. *Molecular Ecology*, 26(13), 3373-3388. (*BioRxiv* link)

Aaron P Ragsdale, Alec J Coffman, PingHsun Hsieh, Travis J Struck, Ryan N Gutenkunst, 2016. Triallelic population genomics for inferring correlated fitness effects of same site nonsynonymous mutations. *Genetics*, 203(1), 513-523. (*BioRxiv* link)

Book chapters

Brian K Mannakee, **Aaron P Ragsdale**, Mark K Transtrum, Ryan N Gutenkunst, 2016. Sloppiness and the geometry of parameter space. in *Uncertainty in Biology: a Computational Modeling Approach*, Springer, Edited by D Gomez-Cabrero and L Geris.

* indicates equal contribution

Teaching

Courses Taught

Calculus 1 (University of Arizona, Spring 2014)
College Algebra (University of Arizona, Fall 2011 and Spring 2012)

Teaching responsibilities

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, University of Arizona (Instructional supervisor, Spring 2014)

Mentoring

Michael Huang (Undergraduate, May – August 2019)
Jacob Lin (Undergraduate, May – August 2019)
Ruijian An (Undergraduate, May – August 2018)

Conferences, seminars, and workshops

Invited and accepted talks

Society for Molecular Biology and Evolution annual meeting, July 2019
Langebio, Cinvestav Irapuato (Tuesday seminar series), March 2019
U. Arizona and CIMAT Workshop on Interdisciplinary Statistics, June 2016
Society for Molecular Biology and Evolution annual meeting, July 2015

Posters

Probability Modeling in Genomics, October 2019
Probability Modeling in Genomics, November 2018
Population, Evolutionary, and Quantitative Genetics, May 2018
Biology of Genomes, May 2018
RECOMB Genetics satellite meeting, July 2017
Allied Genetics Conference, July 2016
Society for Molecular Biology and Evolution annual meeting, June 2014
Society for Mathematical Biology annual meeting, June 2013

Workshop attendance

Closing the Genomics Research Gap, Montreal, QC, June 2018
Montreal Spring School in Population Genomics and Genetic Epidemiology, June 2012

Awards and fellowships

H.E. Carter Travel Award, Society for Molecular Biology and Evolution annual meeting (July 2015)
Travel award, Society for Mathematical Biology annual meeting and conference (June 2013)
NSF/IGERT fellowship in Comparative Genomics, U. Arizona (2012 – 2013)
Travel Award, 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)

Service

Reviewer for journals

Genetics (3), Molecular Biology and Evolution (4), Molecular Ecology (1), Systematic Biology (1), Journal of Computational and Graphical Statistics (1), Mathematical Medicine and Biology (1)

Graduate and undergraduate

Society for Industrial and Applied Mathematics student chapter, U Arizona (President, 2012 – 2014)
Student representative (math dept.) to the Dean's Advisory Board, U Portland (2009 – 2010)
Elementary and middle school mentor and math tutor, St. Andrew's School, Portland, OR, USA (2009 – 2010)

Last updated: March 28, 2021