ARJUN BIDDANDA

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RESEARCH INTERESTS

Population Genomics, Statistical Genetics, Medical Genetics, Ancient DNA

EMPLOYMENT

Nov. 2021 - Computational Scientist · Genomics & Data Science · 54gene

Jan. 2021 - Nov. 2021 Postdoctoral Research Associate · Department of Statistics · University of Oxford

Advisor: Pier Palamara

EDUCATION

2015 - 2020 PhD · Human Genetics · University of Chicago

Dissertation Title: Investigating the spatio-temporal structure of human genetic diversity

Advisor: John Novembre

2011 - 2015 BS.Eng · Computer Science (Cum Laude) · Cornell University

Advisor: Alon Keinan

PUBLICATIONS

* - indicates equal contribution

Brian C Zhang, **Arjun Biddanda**, and Pier Francesco Palamara. Biobank-scale inference of ancestral recombination graphs enables genealogy-based mixed model association of complex traits. *bioRxiv*, 2021.

Arjun Biddanda, Matthias Steinrücken, and John Novembre. Properties of Two-Locus Genealogies and Linkage Disequilibrium in Temporal Samples. *Genetics*, 2022.

Arjun Biddanda, Daniel P. Rice, and John Novembre. Geographic patterns of human allele frequency variation: a variant-centric perspective. *eLife*, 2020.

Charleston W K Chiang, Joseph H Marcus, Carlo Sidore, **Arjun Biddanda**, Hussein Al-Asadi, Magdalena Zoledziewska, Maristella Pitzalis, Fabio Busonero, Andrea Maschio, Giorgio Pistis, Maristella Steri, Andrea Angius, Kirk E Lohmueller, Goncalo R Abecasis, David Schlessinger, Francesco Cucca, and John Novembre. Genomic history of the Sardinian population. *Nature Genetics*, 2018.

Peter de Barros Damgaard, Rui Martiniano, Jack Kamm, J Víctor Moreno-Mayar, ..., **Arjun Biddanda**, ..., Martin Sikora, Alan K Outram, Richard Durbin, and Eske Willerslev. The first horse herders and the impact of early Bronze Age steppe expansions into Asia. *Science*, 2018.

Yedael Y Waldman*, **Arjun Biddanda***, Natalie R Davidson, Paul Billing-Ross, Maya Dubrovsky, Christopher L Campbell, Carole Oddoux, Eitan Friedman, Gil Atzmon, Eran Halperin, Harry Ostrer, and Alon Keinan. The genetics of Bene Israel from India reveals both substantial Jewish and Indian ancestry. *PLoS One*, 11(3):e0152056, 2016.

Yedael Y Waldman, **Arjun Biddanda**, Maya Dubrovsky, Christopher L Campbell, Carole Oddoux, Eitan Friedman, Gil Atzmon, Eran Halperin, Harry Ostrer, and Alon Keinan. The genetic history of Cochin Jews from India. *Human Genetics*, pages 1–17, 2016.

Feng Gao*, Diana Chang*, **Arjun Biddanda***, Li Ma, Yingjie Guo, Zilu Zhou, and Alon Keinan. XWAS: a software toolset for genetic data analysis and association studies of the X chromosome. *Journal of Heredity*, 106(5):666–671, 2015.

PRESENTATIONS

Arjun Biddanda, Matthias Steinrücken, and John Novembre. *Properties of two-locus genealogies and linkage disequilibrium in temporally stratified samples*. Probabilistic Models in Genomics (*Poster*), 2021.

Arjun Biddanda, Daniel P Rice, and John Novembre. *Geographic patterns of human allele frequency variation: a variant-centric perspective*. UC Berkeley Population Genomics Reading Group (Invited Talk), 2021.

Arjun Biddanda, Matthias Steinrücken, and John Novembre. *Linkage Disequilibrium in Ancient DNA: Theory and Applications*. American Society of Human Genetics (*Poster*), 2019.

Arjun Biddanda, Matthias Steinrücken, and John Novembre. *Linkage Disequilibrium in Ancient DNA: Theory and Applications*. Midwest Population Genetics (*Talk*), 2019.

Arjun Biddanda and John Novembre. *Inference and visualization of the geographic distribution for variant sets.* American Society of Human Genetics (*Poster*), 2018.

HONORS / AWARDS

2020 Presidential Membership

Genetics Society of America

2019 Reviewer's Choice Abstract

American Society of Human Genetics

2017 Honorable Mention

NSF Graduate Research Fellowship

2015-2018 NIH Genetics and Regulation Training Grant

University of Chicago

TEACHING EXPERIENCE

Winter 2019 Guest Lecturer, University of Chicago

Computing Skills for Biologists

Winter 2018 Teaching Assistant, *University of Chicago*

HG 486: Fundamentals of Computational Biology

Summer 2017 Course Assistant, University of Chicago

Marine Biological Laboratory - Quantitative Approaches to Biology Bootcamp

Spring 2017 Teaching Assistant, University of Chicago

HG 469: Human Variation and Disease

2016 - 2018 Tutor, *University of Chicago*

Introduction to Statistics for Geneticists

2016 - present Instructor, Software Carpentry

2013 - 2015 Teaching Assistant, Cornell University

CS 3110: Functional Programming and Data Structures

SERVICE

2021 Genetics Peer-Review Training Program

Summer 2020 Co-Organizer

Genetics and Society Reading Group (Departmental Group)

2019-2020 Novembre - He - Stephens (NHS) Meeting Coordinator

University of Chicago

2019 - Peer Review

eLife, Molecular Biology and Evolution, Genes, Scientific Reports, Frontiers in Genetics

MENTORSHIP

2020 - 2021 Achyutha Menon (U. Chicago Undergraduate)

Project: Storage and visualization of linkage disequilibrium Sponsored by a College Summer Research Fellowship

COMPUTATIONAL SKILLS

Python, Bash, R, OCaml, C++, Java

Git, LATEX, Microsoft Office
*nix, Plink, bcftools, snakemake

SOCIETY MEMBERSHIPS

2018 - American Society of Human Genetics (ASHG)

2021 - Genetics Society of America (GSA)