

CURRICULUM VITAE

Parul Johri

School of Life Sciences
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EDUCATION

- 2018 - Present **Postdoctoral Researcher**, Arizona State University, Tempe, AZ
Advisor: Jeffrey D. Jensen
- 2012 – 2018 **PhD**, Evolution, Ecology and Behavior Program
Major: Evolution; Minor: Bioinformatics
Indiana University, Bloomington, IN
Advisor: Michael Lynch
- 2009 – 2012 **Master's** in Biology (By Research)
Tata Institute of Fundamental Research, Mumbai, India
- 2006 - 2009 **B.Sc. (Honours)** Mathematics
St. Stephen's College, Delhi University, Delhi, India

RESEARCH INTERESTS

Population genetics, Molecular evolution, Demographic inference, Background selection, Gene duplication.

PUBLICATIONS (Peer-reviewed)

- Parul Johri**[§], Brian Charlesworth, Jeffrey D. Jensen[§]. Towards an evolutionarily appropriate null model: jointly inferring demography and purifying selection. *Genetics*, 2020. 215: 173-192. (Highlighted by *Genetics*)
- Parul Johri**^{*§}, Georgi K. Marinov^{*§}, Thomas G. Doak, and Michael Lynch. Population genetics of *Paramecium* mitochondrial genomes: recombination, mutation spectrum, and efficacy of selection. *Genome Biology and Evolution*, 2019. 11(5): 1398–1416.
- Parul Johri**[§], Sascha Krennek, Georgi K. Marinov, Thomas, G. Doak, Thomas U. Berendonk, and Michael Lynch. Population genomics of *Paramecium* species. *Molecular Biology and Evolution*, 2017. 34(5): 1194-1216.
- Matthew S. Ackerman, **Parul Johri**, Ken Spitze, Sen Xu, Thomas G. Doak, Kimberly Young, and Michael Lynch. Estimating seven coefficients of pairwise relatedness using population-genomic data. *Genetics*, 2017. 206:105-118.
- Casey L. McGrath, Jean-Francois Gout, **Parul Johri**, Thomas G. Doak, and Michael Lynch. Differential retention and divergent resolution of duplicate genes following whole-genome duplication. *Genome Research*, 2014. 24(10): 1665-75.

PUBLICATIONS (Preprints/Submitted)

Parul Johri[§], Kellen Riall, Hannes Becher, Laurent Excoffier, Brian Charlesworth, Jeffrey D. Jensen[§]. The impact of purifying and background selection on the inference of population history: problems and prospects. *bioRxiv* 2020.04.28.066365; doi: <https://doi.org/10.1101/2020.04.28.066365>, 2020. (*in revision*)

Parul Johri^{*}, Brian Charlesworth^{*}, Emma K. Howell, Michael Lynch[§], & Jeffrey D. Jensen[§]. Revisiting the notion of deleterious sweeps. *bioRxiv* 2020.11.16.385666; doi: <https://doi.org/10.1101/2020.11.16.385666>, 2020. (*submitted*)

Ana Yansi Morales-Arce^{*}, **Parul Johri**^{*}, Jeffrey D. Jensen[§]. Inferring the distribution of fitness effects in influenza A virus and human cytomegalovirus. (*submitted*)

Jean-Francois Gout, **Parul Johri**, Olivier Arnaiz, Thomas G. Doak, Simran Bhullar, Arnaud Couloux, Frédéric Guérin, Sophie Malinsky, Linda Sperling, Karine Labadie, Eric Meyer, Sandra Duhaucourt, Michael Lynch. Universal trends of post-duplication evolution revealed by the genomes of 13 *Paramecium* species sharing an ancestral whole-genome duplication. *bioRxiv* 573576; doi: <https://doi.org/10.1101/573576>, 2019.

PUBLICATIONS (In preparation)

Parul Johri[§], Jean-Francois Gout, Michael Lynch. A population-genetic lens into the process of gene duplicate loss after whole-genome duplication. (*in preparation*)

*These authors contributed equally.

§ Corresponding authors.

PRESENTATIONS (INVITED TALKS)

2021- Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India.

2020- Department of Biology, University of North Carolina, Chapel Hill, NC.

2020- Center for Evolution and Medicine, Arizona State University, Tempe, AZ.

PRESENTATIONS (EXTERNAL TALKS)

2021- *Population Genetics Group*, Liverpool, England. Joint inference of demography and purifying selection.

2020- *Arizona Population Genetics Conference*, Tempe, Arizona. Effects of fixation and segregation of deleterious mutations.

2019- *Arizona Population Genetics Conference*, Tempe, Arizona. Joint estimation of demography and purifying selection.

2019 - *Evolution*, Providence, Rhode Island. Joint estimation of demography and purifying selection.

2019 - *Annual Meeting of the Society for Molecular Biology and Evolution (SMBE)*, Manchester, UK. Mechanistic basis of loss and preservation of whole-genome duplicates. (Withdrawn due to VISA complications)

2018- *Arizona Population Genetics Conference*, Tucson, Arizona. *Paramecium* population genomics: constraints on non-coding regions and whole-genome duplicates.

2017- *Evolution*, Portland, Oregon. Evolution and population-genetics of mitochondrial genomes in *Paramecium* species.

2016- *The Allied Genetics Conference (TAGC)*, Orlando, Florida. Population genomics of *Paramecium* species.

2016- *Annual Meeting of the Society for Molecular Biology and Evolution (SMBE)*, Queensland, Australia. Population genomics of *Paramecium* species.

2015- *Midwest Protozoology Meeting*, Peoria, Illinois. Genetic variation in *Paramecium*.

PRESENTATIONS (INTERNAL TALKS)

2019, 2017- *Evolution Research Symposium*, Arizona State University, Tempe, Arizona.

2015- *Brown Bag Seminar*, Indiana University, Bloomington, Indiana.

PRESENTATIONS (POSTERS)

2017- *Annual Meeting of the Society for Molecular Biology and Evolution (SMBE)*, Austin, Texas.

2015- *Annual Meeting of the Society for Molecular Biology and Evolution (SMBE)*, Vienna, Austria.

2014- *Annual Meeting of the Society for Molecular Biology and Evolution (SMBE)*, San Juan, Puerto Rico.

2013- *Annual Meeting of the Society for Molecular Biology and Evolution (SMBE)*, Chicago, Illinois.

ACADEMIC AWARDS/SCHOLARSHIPS:

2018-2020 Early Career Reviewer at *Genetics*, Genetics Society of America

2018, 2016 Young Investigator Travel Award, Society for Molecular Biology and Evolution.

Spring 2017 College of Arts and Sciences Travel Award, Indiana University.

Spring 2014 Departmental Fellowship, Indiana University.

2009-2012 Annual Departmental Fellowship, Tata Institute of Fundamental Research, India.

2008-2009 Medal for the most *Outstanding Student* in Mathematics, Department of Mathematics, St. Stephen's College, Delhi University, India.

- Summer 2009 Summer Research Fellowship, Indian Academy of Sciences, Bangalore, India. [Awarded annually nationwide to 100 students (undergraduate and graduate) in Biology.]
- Summer 2008 Summer Research Fellowship, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, India. [Awarded annually nationwide to 30 students (undergraduate and graduate) in Biology.]

REVIEWED FOR:

Genetics (4), *G3: Genes, Genomes, Genetics* (1), *Genome Biology and Evolution* (2), *Molecular Ecology* (1), *Evolution* (1), *Ecology and Evolution* (1), *Journal of Molecular Evolution* (1).

MEMBERSHIP IN SCIENTIFIC SOCIETIES:

Society for Molecular Biology and Evolution (SMBE), 2012 – Present

Genetics Society of America (GSA), 2014 – Present

Society for the Study of Evolution (SSE), 2016 – Present

UNDERGRADUATES MENTORED:

Kellen Riall, August 2019 – Present

Emma Howell, Spring 2019 – Summer 2020 [Current position: PhD student at University of Wisconsin-Madison]

TEACHING EXPERIENCE:

- Spring 2015 Head teaching assistant, **Evolution** (L318), Department of Biology, Indiana University.
- Spring 2013 Head teaching assistant, **Biology Laboratory** (L113), Department of Biology, Indiana University.
- Fall 2012 Associate teaching assistant, **Biology Laboratory** (L113), Department of Biology, Indiana University.

OTHER RESEARCH EXPERIENCES

- Junior Research Scholar 2010-2012 **Deflagellation in *Chlamydomonas reinhardtii*- the underlying signalling mechanisms.** Advisor: Prof. B. J. Rao, Tata Institute of Fundamental Research, Mumbai, India.
- Junior Research Scholar **Predicting multiple origins of replication in bird mitochondrial genomes**

- 2009 - 2010 **using monte carlo markov models.** Advisor: Prof. B. J. Rao, Tata Institute of Fundamental Research, Mumbai; Co-advisor: Dr. Neeraja Krishnan, Indian Institute of Science, Bangalore, India.
- Summer Research Fellow **Mathematical modelling of the neuronal networks in the saccadic eye**
May-July, 2008 **system.** Advisor: Dr. Aditya Murthy, National Brain Research Centre,
Gurgaon, India.
- Summer Research Fellow **Culture of human endothelial cells in microfluidic channels.** Advisor: Dr.
May-July, 2007 Kaustubh Rao, National Centre for Biological Sciences, Bangalore, India.

WORKSHOPS ATTENDED

Workshop on Evolutionary Origins of Compartmentalised Cells, National Centre for Biological Sciences, Bangalore, India, 19 Feb - 2 March, 2012.