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Education

Ph.D., Population/Evolutionary genomics, University of Rochester, USA, 2016.

Dissertation: *Evolutionary Genomics of piRNA Mediated Transposon Silencing in Drosophila*.

Committee: Drs. Daniel Garrigan (advisor), Daven Presgraves, Thomas Eickbush and Justin Blumenstiel

M.S., Biology, University of Rochester, USA, 2011.

M.Sc., Genomics, Madurai Kamaraj University, India, 2007.

Thesis: *Evolutionary Trails of Two Ancient Dravidian Populations in Southern India: Insights from the Non-recombining Y Chromosome and Human Leukocyte Antigen Diversity*

B.Sc., Biology & Biotechnology, Loyola College, University of Madras, India, 2005.

Other: Peer-review trainee at the Genetics Society of America Peer-Review Training program, 2019-Present

Research Experience

Research Fellow, Sloan Kettering Institute, 2016–till date.

Mentor: Eric C. Lai, Ph.D.

Research Assistant, Centre for DNA Fingerprinting & Diagnostics, India 2007–2009.

Grants, Honors, & Awards

Doctoral Dissertation Improvement Grant, National Science Foundation, 2012–2015

Travel Award, Department of Biology, University of Rochester, 2015.

Graduate Student Association Travel Award, University of Rochester, 2015.

Graduate Student Teaching Award, University of Rochester, 2014.

Travel Award, Cold Spring Harbor Laboratory, 2013 & 2014.

Ernst Caspari Fellowship, University of Rochester, 2009.

Summer Research Fellowship, University of Madras, 2005.

Publications

Manuscripts in prep. / Bioarxiv

Chakraborty M., Chang C., Khost E., **Vedanayagam J.**, Adrion J., Montooth K., Meiklejohn C., Larracuenta A., Emerson J.J. Genome structure evolution in the *Drosophila simulans* species complex. (will be available on Bioarxiv soon)

Peer-reviewed publications

Vedanayagam J., Askoy B.M., Chalita W., Majumdar S., Skanderup A.J., Fieldhouse R.J., Lee W., Demir E., Ciriello G., Schultz N., Marks D.S., Sander C., Lai E.C. 2019. Cancer-associated mutations in RNaseIIIa and IIIb domains of DICER1 exert similar effects on miRNA biogenesis. *Nature Comm.* 10:3682

Meiklejohn C.D., Landeen E.L., Gordon K.E., Rzatkievicz T., Kingan S.B., Geneva A.J., **Vedanayagam J.**, Muirhead C.A., Garrigan D., Stern D.L., Presgraves D.C. 2018. Gene flow mediates the role of sex chromosome meiotic drive during complex speciation. *elife* 7:e35468

Lin C., Hu F., Dubruielle R., **Vedanayagam J.**, Wen J., Smibert P., Loppin B., Lai E.C. 2018. The hpRNA/RNAi pathway is essential to resolve intragenomic conflict in the *Drosophila* male germline. *Dev. Cell* 46:316-326

Article preview: Blumenstiel J.P. and Meiklejohn C.D. RNAi Doxxes segregation distorters on the X. *Dev. Cell* 46:251-253

Kondo S*, **Vedanayagam J.***, Mohammed J., et al. 2017. New genes often acquire male-specific functions but rarely become essential in *Drosophila*. *Genes & Dev.* 31:1841–1846 *co first-authors

Article highlight: Nyberg K.G. and Carthew R.W. Out of testis: biological impacts of new genes. *Genes & Dev.* 31:1825-1826

Kan L., Grozhik A.V., **Vedanayagam J.**, Patil D.P., et al. 2017. The m6A pathway facilitates sex determination in *Drosophila*. *Nature Comm.* 8:15737

Vedanayagam J. and Garrigan D. 2015. The Effects of Natural Selection Across Molecular Pathways in *Drosophila melanogaster* *BMC Evol Biol* 15:203.

Garrigan D., Kingan S.B., Geneva A.J., **Vedanayagam J.**, and Presgraves D.C. 2014. Genome Diversity and Divergence in *Drosophila mauritiana*: Multiple Signatures of Faster X Evolution. *Genome Biol Evol* 6(9): 2444–2458.

Nandineni M.R., and **Vedanayagam J.**. 2009. Selective Enrichment of Human DNA from non-Human DNA for DNA Typing of Decomposed Skeletal Remains. *Forensic Sci Int Gene Suppl* 2(1): 520–521.

**Seminars/
Talks**

Icahn School of Medicine at Mount Sinai, January 2019.

Fly Club Meeting, Sloan-Kettering Institute, October 2018.

Department of Developmental Biology, Sloan-Kettering Institute, November 2017.

RNA Therapeutics Institute, University of Massachusetts Medical School, July 2015.

Department of Molecular Biology & Genetics, Cornell University, June 2015.

Department of Developmental Biology, Sloan-Kettering Institute, April 2015.

Seminars/Talks continued.....

New York Genome Center, January 2015.

Department of Biology, University of Rochester, January 2014.

Wellcome Trust Centre for Human Genetics, University of Oxford, April 2008.

**Conference
Presentations**

(P)–Poster / (T)–Platform

New York Area Population Genomics Workshop, NYU, January 2020 (P).

Society for Molecular Biology and Evolution Meeting, Manchester, July 2019 (T).

New York Area Population Genomics Workshop, Mount Sinai, January 2019 (T).

Regulatory and non-coding RNA meeting, CSHL, New York, May 2018 (P).

56th Annual *Drosophila* Research Conference, Chicago, March 2015 (P).

New York Area Population Genomics Workshop, New York, January 2015 (T).

Regulatory and non-coding RNA meeting, CSHL, New York, August 2014 (P).

Regional Meeting on Mobile Genetic Elements, CSHL, New York, October 2013 (P).

54th Annual *Drosophila* Research Conference, Washington D.C., April 2013 (P).

Society for Molecular Biology and Evolution Meeting, Dublin, June 2012 (T).

Teaching

Teaching Assistant, Department of Biology, University of Rochester

BIO111P, Introductory Biology Lab: *Spring: 2010, 2013, and 2014.*

BIO113P, Advanced Biology Lab: *Spring: 2011.*

Guest lecturer for BIO472: Genomic Conflict and Selfish Genetic Elements, University of Rochester, March 2014

Two lectures for the Advanced Ecology & Evolutionary Biology course taught by Prof. Thomas Eickbush.

Instructor, Rochester Scholars Program, University of Rochester, July–August, 2013

Developed and taught a course for high school students titled 'Genes and genomes: Why is DNA the secret molecule of life?'

Upward bound tutor for high school students, David T. Kearns center for Leadership and Diversity, University of Rochester, January 2012–May 2012.

Service

Journal Referee: PLoS Genetics; GSA Early-Career reviewer for Genetics; G3.

ad hoc Referee: eLife; PLoS Comp. Biology; Dev. Cell; Nat. Comm.

Grant Referee: Sigma Delta Epsilon graduate women in science fellowship.

**Research
Funding**

National Science Foundation (DEB-1209536), April 2012–May 2015

PI: Garrigan D. (co-PI: Vedanayagam J.P).

Title: Evolutionary Genomics of piRNA Mediated Transposon Silencing in Drosophila.

Professional Memberships Society for Molecular Biology and Evolution 2011–Present
 Genetics Society of America 2012–Present
 The New York Academy of Sciences 2011–Present

References Dr. Eric C. Lai
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 e-mail: laie@mskcc.org

Dr. Daniel Garrigan
 Ancestry DNA
 153 Townsend St., Ste. 800
 San Francisco, CA 94107
 e-mail: dgarriga@lummei.net

Dr. Daven Presgraves
 Dean's Professor of Arts, Sciences & Engineering
 Department of Biology
 University of Rochester
 Rochester, NY 14627
 e-mail: daven.presgraves@rochester.edu

Dr. Justin Blumenstiel
 Associate Professor
 Department of Ecology & Evolutionary Biology
 University of Kansas
 Lawrence, KS 66045
 e-mail: jblumens@ku.edu

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