

CV

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Current/previous Position

2020-present	Associate Professor & Ramanujan Fellow Ahmedabad University, Ahmedabad 380009, Gujarat, India
2017- 2020	Assistant Professor Ahmedabad University, Ahmedabad 380009, Gujarat, India
2012 – 2017	Research Associate University of Pennsylvania, Philadelphia, USA
2008- 2012	Postdoc University of Nevada, Las Vegas, USA
2007-2008	Visiting Scholar, Institute of Evolution, Haifa University, Haifa, Israel

Education

2007	Ph.D. Bioscience Maharshi Dayanand University, Rohtak Prof. Ravi Parkash, advisor (retired)
2000	M.Sc. Zoology 1 st Division Mohan Lal Sukhadia University, Udaipur
1998	B.Sc. Biology 1 st Division Govt. Dungar College, Bikaner

Publications

Google Scholar Citations: 685; 'h' index: 15; i10 index: 19

*Corresponding author

1. Bhati H, ***Rajpurohit S**. 2021. Quantification of wing and body tergite pigmentation in *Drosophila*, In *Experiments with Drosophila for Biology Courses*, Ed. S C Lakhota and H A Ranganath (Publisher Indian Academy of Sciences), accepted.
2. ***Rajpurohit S**, Vrkoslav V, Hanus R, Bhati H, Gibbs AG, Cvacka J, Schmidt P. 2020. Post-eclosion temperature effects on insect cuticular hydrocarbons profiles. *Ecology and Evolution*. <https://doi.org/10.1002/eee3.7050>.
3. Vasquez-Procopio J, **Rajpurohit S**, Missirlis F. 2020. Cuticle darkening correlates with increased body copper content in *Drosophila melanogaster*, *Biometals*, <https://doi.org/10.1007/s10534-020-00245-1>.
4. Rudman S, Greenblum S, Hughes R C, **Rajpurohit S**, Kiratli O, Lowder DB, Lemmon SG, Petrov D, Schmidt PS. 2019. Microbiome composition shapes rapid genomic adaptation of *Drosophila melanogaster*. *Proceedings of the National Academy of Sciences U.S.A.* 116: 20025-20032.
5. ***Rajpurohit S** and Schmidt PS. 2019. Latitudinal pigmentation variation contradicts ultraviolet radiation exposure: a case study in tropical Indian *Drosophila melanogaster*. *Frontiers in Physiology* 10:84. doi: 10.3389/fphys.2019.00084.

6. Durmaz E, **Rajpurohit S**, Betancourt N, Fabian DK, Kapun M, Schmidt PS, Flatt T. 2019. A clinal polymorphism in the insulin signaling transcription factor *foxo* contribute to life-history adaptation in *Drosophila*. *Evolution*, <https://doi.org/10.1111/evo.13759>.
7. Machado H, Bergland AO, Taylor R, Tilk S, Behrman E, Dyer K, Fabian D, Flatt T, Gonzalez J, Karasov T, Kozeretska I, Lazzaro B, Merritt T, Pool J, O'Brien K, **Rajpurohit S**, Roy P, Schaeffer S, Serga S, Schmidt P, Petrov D. 2019. Broad geographic sampling reveals predictable and pervasive seasonal adaptation in *Drosophila*. *Elife* (in revision). <https://www.biorxiv.org/content/early/2018/06/03/337543>.
8. Betancourt N, **Rajpurohit S**, Durmaz E, Fabian D, Kapun M, Flatt T, Schmidt P. 2019. Allelic polymorphism at *foxo* contributes to local adaptation in *Drosophila melanogaster*. *Molecular Ecology* (in revision) 71565. <https://www.biorxiv.org/content/early/2018/11/16/471565?>.
9. ***Rajpurohit S**, Gefen S, Bergland AO, Petrov D, Gibbs AG, Schmidt PS. 2018. Spatiotemporal dynamics and genome-wide association analysis of desiccation tolerance in *Drosophila melanogaster*. *Molecular Ecology* 27: 3525-3540.
10. ***Rajpurohit S**, Zhao X, and Schmidt PS. 2017. A resource on latitudinal and altitudinal clines of ecologically relevant phenotypes of the Indian *Drosophila* populations. *Scientific Data – Nature* 4:170066 DOI: 10.1038/sdata.2017.66.
11. Etges WJ, de Oliveira CC, **Rajpurohit S**, and Gibbs AG. 2016. Effects of temperature on transcriptome and cuticular hydrocarbon expression in ecologically differentiated populations of desert *Drosophila*. *Ecology & Evolution* 7:619-637.
12. **Rajpurohit S**, Hanus R, Vrkošlav V, Behrman EL, Bergland A, Dmitri P, Cvacka J, and Schmidt PS. 2016. Adaptive dynamics of cuticular hydrocarbon profiles in *Drosophila*. *Journal of Evolutionary Biology* 30:66-80.
13. ***Rajpurohit S**, Richardson R, Dean J, Vazquez R, Wong G and Schmidt PS. 2016. Pigmentation and trade-off through the lens of artificial selection. *Biology Letters*, DOI: 10.1098/rsbl.2016.0625.
14. ***Rajpurohit S**, Peterson LM, Orr A, Marlon AJ, and Gibbs AG. 2016. An experimental test of the relationship between melanism and desiccation survival in insects. *PLoS One* 11(9):e0163414.
15. **Rajpurohit S**, and Schmidt PS. 2016. Measuring thermal behaviour in smaller insects: a case study in *Drosophila melanogaster* demonstrate effects of sex, geographic origin, and rearing temperature on adult behaviour. *Fly* 10:149-161.
16. Etges WJ, Oliveira de CC, **Rajpurohit S**, and Gibbs AG. 2016. Preadult life-history variation determines adult transcriptome expression. *Molecular Ecology* 23:741-763.
17. Etges W, Trotter MV, de Oliveira CC, **Rajpurohit S**, Gibbs AG, and Tuljapurkar S. 2015. Deciphering life history transcriptomics in different environments. *Molecular Ecology* 24:151-179.
18. **Rajpurohit S**, de Oliveira CC, Etges WJ and Gibbs AG. 2013. Functional genomic and phenotypic responses to desiccation in natural populations of desert drosophilid. *Molecular Ecology* 22:2698-2715.
19. ***Rajpurohit S**, Nedved O and Gibbs AG. 2013. Meta-analysis of geographical clines in desiccation tolerance of Indian drosophilids. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 164:391-398.
20. ***Rajpurohit S**, and Nedved O. 2013. Clinal variation in fitness related traits in tropical drosophilids of the Indian subcontinent. *Journal of Thermal Biology* 38:345-354.
21. ***Rajpurohit S**, and Gibbs AG. 2012. Selection of body tergite pigmentation and correlated responses in trident: a case study in *Drosophila melanogaster*. *Biological Journal of the Linnean Society* 106:287-294.
22. ***Rajpurohit S**, and Marlon AJ. 2011. Pigmentation scoring method for *Drosophila*. *Drosophila Information Service* 94:134-139.
23. Gibbs AG, and **Rajpurohit S**. 2010. Cuticular Lipids and Water Balance. In *Insect Hydrocarbons-Biology, Biochemistry, and Chemical Biology*, G. J. Blomquist, ed. (Cambridge, UK: Cambridge University Publisher), pp. 100-119.
24. Parkash R, ***Rajpurohit S**, and Ramniwas S. 2009. Impact of darker, intermediate and lighter phenotypes of body melanisation on desiccation resistance in *Drosophila melanogaster*. *Journal of Insect Science* 9:1-10. First two authors equally contributed.

25. Parkash R, **Rajpurohit S**, and Ramniwas S. 2008. Changes in body melanization and desiccation resistance in highland vs. lowland populations of *D. melanogaster*. *Journal of Insect Physiology* 54:1050-1056.
26. ***Rajpurohit S**, Parkash R, and Ramniwas S. 2008. Pigmentation, ovariole number and fecundity variations in lowland and highland populations of *Drosophila melanogaster*. *Insect Science* 15:553-561.
27. ***Rajpurohit S**, Parkash R, and Ramniwas S. 2008. Climatic changes and shifting species boundaries of drosophilids in the western Himalaya. *Acta Entomologica Sinica* 51:328-335.
28. ***Rajpurohit S**, Parkash R, and Ramniwas S. 2008. Climate change, boundary increase and elongation of a pre-existing cline: a case study in *Drosophila ananassae*. *Entomological Research* 38:268-275.
29. ***Rajpurohit S**, Parkash R, and Ramniwas S. 2008. Body melanization and its adaptive role in thermoregulation and tolerance against desiccating conditions in drosophilids. *Entomological Research* 38:49-60.
30. Parkash R, Ramniwas S, **Rajpurohit S**, and Sharma V. 2007. Variations in body melanization impact desiccation resistance in *Drosophila immigrans* from western Himalaya. *Journal of Zoology* 276:219-227.
31. ***Rajpurohit S**, Parkash R, Ramniwas S, Nedved O, and Singh S. 2007. Parallel trend in pigmentation and desiccation tolerance: altitudinal and latitudinal effects in *Drosophila melanogaster*. *Drosophila Information Service* 90:70-79.
32. Pregent SR, and **Rajpurohit S**. 2007. Genome, Evolution, *Drosophila* and Beyond. *Fly* 1:297-302. (Meeting Report)
33. Parkash R, Tyagi PK, Sharma I, and **Rajpurohit S**. 2005. Adaptations to environmental stress in altitudinal populations of two *Drosophila* species. *Physiological Entomology* 30:353-361.

Research Support

- SERB-Core Research Grant, Government of India; 2018; RS 22,50000.00
- Ramanujan Fellowship, SERB-DST, Government of India; 2018; RS 7,60,000 per annum
- Seed Grant, University Research Board, Ahmedabad University, Ahmedabad; 2018; RS 25,00,000.00
- UPENN Peachey Environmental Biology Term Fund; 2015; Amount: \$1950.00
- Indo-Israel Cultural Exchange Program Award; 2007-2008; Amount: \$5600.00

Awards/Fellowships

- EMBO Short-term Fellowship, University of Exeter, Exeter, UK (2020)
- The American Physiological Society Research Recognition Travel Award - Westminster, USA (2010).
- Visiting Scholar grant under Indo-Israel Cultural Exchange Program funded through Israel Government to visit the Institute of Evolution, The University of Haifa, ISRAEL (2007-2008).
- Riken Kobe Institute Center for Development Biology travel grant - Awaji Island, JAPAN (2007). Association for the study of animal behavior (ASAB) travel grant - Locarno, SWITZERLAND (2005).
- Undergraduate **Summer Research Fellowship** from the Indian Academy of Sciences, Bangalore, INDIA (1998).

Academic Recognition

- **Scientific Journal Work:**
Editorial Board Member; Current Opinion in Insect Science (CRIS); 2020-present
Review Board Member; Journal of Evolutionary Biology; 2018-present
Subject Review Editorial Board Member; Current Science; 2018-present
Member, Associate Editorial Board (BMC Research Notes); 2010-2012.
- **Scientific Proposal Reviewing:** "ad hoc reviewer for NSF"
- **Topic Editor:** 'Melanism: macrophysiology to molecules'; journal 'Frontiers in Physiology' (Integrative

Physiology Section). With Aya Takahashii (Tokyo Metropolitan University).

- **Organizer:** *Melanism: macrophysiology to molecules*; Symposia organized with Paul Schmidt; ESEB 2015 (European Society for Evolutionary Biology 10-14 Aug 2015, Lausanne, Switzerland)
- **Reviewer:** Scientific Reports (Nature Publishing Group); Evolution; Journal of Insect Physiology; Scientific Data (Nature Publishing Group); Genetica; Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology; Behavioral Ecology; Zoological Research; Estonian Journal of Ecology; Open Access Animal Physiology; Journal of Experimental Zoology Part A: Ecological Genetics and Physiology; BMC Research Notes; Proceedings of the National Academy of Sciences, India Section B: Biological Sciences; Proceedings of Royal Society B; Journal of Evolutionary Biology; American Naturalist.
- **Grant Proposal Reviewer:** Science and Engineering Research Board (SERB)-India; Scheme for Transformational and Advanced Research in Sciences (STAR-MHRD)-India; National Fund for Scientific and Technological Development abbreviated FONDECYT-Chile; National Science Foundation (NSF)-USA.

Professional Training

- Mass-Spectrometry Based Metabolomics Workshop at C-CAMP, Bengaluru, India; 27-31 Jan 2020.
- Workshop on 'HPLC & GC/GC-MS' at Sophistiquâtes Instrumentation Centre for Applied Research and Testing (SICART), Charutar Vidya Mandal, Vallabh Vidyanagar 388120 Anand, Gujarat, India ; 28-29 August 2019.
- '5th Annual Workshop on Metabolomics' at UAB, USA; 16-21st July, 2017
- '*Environmental Genomics Course*' held at the Mount Desert Island Biological Laboratory, Maine, USA; 21-28th August 2010.
- '*Certificate in Precision Respirometry*' at the Sable Systems International, Las Vegas, Nevada, USA; November 2009.
- DST sponsored workshop on '*Methods on Behavioral Ecology*', held at the Centre for Ecological Sciences, Indian Institute of Sciences, Bangalore during January 12-24, 2004.

Professional Society Affiliations

- The Society for Integrative & Comparative Biology, USA
- The Society for the Study of Evolution, USA
- International Society for Evolution, Medicine, and Public Health, USA

Recent Talks and Outreach

1. **Water balance in insects: macrophysiology to molecules.** National Conference on "Evolution and Adaptation: Current Scenario", Institute of Science, GITAM, Visakhapatnam, Orissa, India

Date: 10-11 Dec 2020

2. **TRP channels role in thermal preference: A fly story.** Bioinformatics Centre, Birla Institute of Scientific Research, Jaipur, India

Date: 21 Jan 2020

3. **Thermal preference in *Drosophila*: it's not that simple.** ISEB2: Indo-Swiss Meeting on Evolutionary Biology. Centre for Human Genetics, Bangalore, India

Date: 12-14 Dec 2019

4. **Molecules matter: Insect cuticular hydrocarbons.** ISEB1: Celebrating Ecology and Evolution in India. First Conference of the Indian Society of Evolutionary Biologists. JNCASR, Bangalore, India

Date: 24-25 October 2019.

5. **Seasonality and eco-evolutionary dynamics.** H N B Garhwal University Campus Chauras/Birma Campus, Tehari, Uttrakhand, India.
Date: 18 September 2019.
6. **Water Balance in Insects.** H N B Garhwal University Campus Badshahithaul, Srinagar, Uttrakhand, India.
Date: 20 September 2019.
7. **Impact and risks to ecosystem.** Global Centre for Environment and Energy. Ahmedabad University, Ahmedabad, India.
Date: 23 August 2019.
8. **Natural variation, laboratory selection, and genomics of desiccation tolerance in *Drosophila*.** International Centre for Theoretical Sciences-TIFR Bangaluru (3rd Bangalore School on Population Genetics & Evolution), Bangaluru, India
<http://live.icts.res.in/videos/video/2956/>
<https://www.icts.res.in/sites/default/files/PGE2018-2018-03-15-Subhash-Rajpurohit.pdf>
Date: 15 March 2018.
9. **Understanding geographical clines: seasonality and eco-evolutionary dynamics.** IISER Pune, Maharashtra, India.
<http://www.iiserpune.ac.in/colloquia-seminars/579>
Date: 14 Feb 2017.
10. **Adaptation to spatial and temporal environmental variants in *Drosophila*.** Centre for Ecological Sciences, Indian Institute of Sciences, Bangaluru, India.
<http://ces.iisc.ernet.in/new/?q=node/449>
Date: 25 Oct 2016.

Blogs

The little Fruit-fly and big Climate Change: Short story of *Drosophila melanogaster* and the Flyfolk.
<https://ahduni.edu.in/blog-detail-v1>

Interviews/Discussions

1. **Mighty Evolution! Is Evolution a Hoax?**
<https://www.youtube.com/watch?v=CBwKY6QQurQ>
2. **What does a fruit-fly tell us about water?**
<https://timesofindia.indiatimes.com/topic/Dr-Shubhash-Rajpurohit>
https://www.facebook.com/pg/projectotenga/photos/?tab=album&album_id=2034780973469005
3. **Panel Discussion;** To mark the launch of the Global Centre for Environment and Energy at Ahmedabad University, a panel discussion was organized titled *No 'Plan B': Looking Through the Sustainability Lens*.
<https://ahduni.edu.in/events/ahmedabad-university-launches-global-centre-for-environment-and-energy>

Projects

City Nature Challenge 2018 Ahmedabad, India

April 27-29, 2018

We, humans, share Ahmedabad with a large number of organisms living in our neighbourhoods! Let's try to find out what's out there! Join us (Rajpurohit Lab @ the Division of Biological & Life Sciences, School of Arts & Sciences, Ahmedabad University, Ahmedabad) in this citizen science adventure to catalogue our city's biodiversity!

Participation is very simple. Download the iNaturalist app to your mobile phone; then, from April 27-30, 2018, use the app to take photos of plants, trees, insects, animals, fungi, moss or other organisms you see and the iNaturalist community will help you identify it.

Note: For this project, our geographical boundary is outer ring road. Anything inside the outer ring road is advised to go in this work. Please keep your mobile coordinates open.

Stay tuned to us for further updates.

The City Nature Challenge is organized by Natural History Museum of Los Angeles County and California Academy of Sciences, USA.

RESULTS...

May 1-3, 2018

<http://citynaturechallenge.org/>

In News

1. Fruit flies' microbes shape their evolution

<https://www.sciencedaily.com/releases/2019/09/190917193631.htm>

https://www.eurekalert.org/pub_releases/2019-09/uop-ffm091719.php#

Scientific Conference/Meetings Presentations

1. ISEB2: Indo-Swiss Meeting on Evolutionary Biology. Date: 12-14 Dec 2019. Centre for Human Genetics, Bangalore, India (Invited Talk: Thermal preference in *Drosophila*: It's not that simple).
2. ISEB1: Celebrating Ecology and Evolution in India. First Conference of the Indian Society of Evolutionary Biologists. Date: 24-25 October 2019. Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India (Invited Talk: Molecules matter: cuticular hydrocarbons).
3. The 3rd Bangalore School on Population Genetics & Evolution. Date: 15 March 2018. International Centre for Theoretical Sciences-TIFR Bangalore, India (Invited Talk: Natural variation, laboratory selection, and genomics of desiccation tolerance in *Drosophila*).
4. The 5th Asia Pacific *Drosophila* Research Conference APDRC and Indian *Drosophila* Research Conference. Date: 6-10 Jan 2020. Indian Institute of Science & Education, Pune, India (Poster Presentation with Homica Arya: But first, give me water!: *Drosophila* adults refrain from copulation when dehydrated).
5. The 3rd Biennial *Indian Drosophila Research Conference* (InDRC). 6-9 Dec 2017. Indian Institute of Science & Education, Bhopal, India (Poster Presentation- Rajpurohit et al.: Post-eclosion temperature effects on insect cuticular hydrocarbon profiles).
6. European Society of Evolutionary Biology. 10-14 Aug 2015. Lausanne, Switzerland (Oral Presentation- Rajpurohit et al.: Allelic variation at *TrpA1* and *trpl* regulated thermal-mediated behavior in the lab and field in *Drosophila*).
7. European Society of Evolutionary Biology. 10-14 Aug 2015. Lausanne, Switzerland (Poster Presentation- Rajpurohit et al.: Eco-evolutionary dynamics in response to seasonal adaptation in *Drosophila*).
8. *Drosophila* Research Conference. Date: March 4-8, 2015. Chicago, USA (Oral Presentation- Bergland et al.: Genome-wide test of a life-history model underlying seasonal adaptation in *Drosophila*).
9. The 5th International Symposium on the Environmental Physiology of Ectotherms and Plants (ISEPEP). Date 12-16 Aug 2013. Ontario, Canada (Poster Presentation-Nedved & Rajpurohit: Clinal variation in ecophysiological traits in drosophilids of the Indian subcontinent).
10. EVOLUTION 2013. Date June 21-25, 2013. Salt Lake City, USA. (Poster Presentation-Rajpurohit et al.: Spatial and temporal variation in drought tolerance in North American populations of *Drosophila melanogaster*).
11. EVOLUTION 2013. Date June 21-25, 2013. Salt Lake City, USA. (Poster Presentation-Etges et al.: Transcriptomics of cuticular hydrocarbon expression in a desert drosophilid: age and temperature/desiccation stress).
12. Society for Integrative and Comparative Biology SICB 2013. Date: 3-7 Jan 2013. San Francisco, USA (Oral Presentation-Gibbs et al. Testing *melanism-desiccation* hypothesis using experimental evolution).
13. EVOLUTION 2011. Date: 17-21 June 2011. Norman, Oklahoma, USA (Poster Presentation-Etges et al.: Ecological

genomics of stage and age specific responses to different host plants in populations of *Drosophila mojavensis*).

14. APS Intersociety Meeting: Global Change & Global Science: Comparative Physiology in a Changing World. Denver, Colorado, USA. Date: 4-7 Aug 2010. Westminster, Colorado, USA (Poster Presentation-Rajpurohit et al.: Transcriptome analysis of desiccation in desert adapted *Drosophila mojavensis*).

15. EVOLUTION 2010. Date: 25-29 Jun 2010. Portland, Oregon, USA (Poster Presentation-Etges et al.: Ecological genomics of host use and mating status in *Drosophila mojavensis*).

16. The Society for Integrative and Comparative Biology SICB. Date: 3-7 Jan 2010. Seattle, WA, USA (Poster Presentation-Marlon et al.: Evolution of gene expression in larval fat body of stress-selected *Drosophila*).

17. The Society for Integrative and Comparative Biology SICB. Date: 3-7 Jan 2010. Seattle, WA, USA (Poster Presentation-Gibbs et al.: Ecological genomics of host plant adaptation and stress in desert *Drosophila*).

18. *Drosophila* Research Conference. Date: 4-8 Mar 2009. Chicago, USA (Poster Presentation-Rajpurohit et al.: *Drosophilids* as indicators of changing climatic conditions).

19. Gordon Research Conference on Evolutionary and Ecological Functional Genomics. Date: 12-17 Jul 2009. New Hampshire, USA (Poster Presentation-Rajpurohit et al.: Evolution of gene expression in larval fat body of stress-selected *Drosophila*).

20. Gordon Research Conference on Evolutionary and Ecological Functional Genomics. Date: 12-17 Jul 2009. New Hampshire, USA (Poster Presentation-Oliveira et al.: Ecological genomics of host plant adaptation and stress in desert *Drosophila*).

21. International Workshop on The Evolution of Sexual Size Dimorphism. Date: 4-7 Sep 2005. Locarno, Switzerland (Poster Presentation-Rajpurohit et al.: Morphometric variations in altitudinal populations of three *Drosophila* species).

22. The 8th Japanese *Drosophila* Research Conference. Date: 2-4 Jul 2006. Osaka, Japan (Poster Presentation-Rajpurohit et al.: Adaptations to altitudinally varying colder environments: Correlated changes in melanism, desiccation tolerance and reproductive fitness traits in *Drosophila immigrans*).

Place : Ahmedabad

Last Update: 29 Dec 2020

Subhash Rajpurohit