Sushant Potdar

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Current employment

Post-doctoral associate, Cornell University, Ithaca, NY **2024- Present**
Advisor/s: Andrew G. Clark and Mariana F. Wolfner

Education

University of Arkansas, Biology. Fayetteville, AR **Ph.D. 2024**
Thesis: The causes and consequences of behavioral plasticity in anti-predatory defense and mate choice in tropical butterflies; **Advisor:** Erica L. Westerman

TERI University (Now TERI School of Advanced Studies), Environmental Science and Resource Management. New Delhi, India **M.Sc. 2016**
Thesis: Activity time budget of Indian cabbage white (*Pieris canidia*) across an elevational gradient in Himachal Pradesh, India; **Advisors**: Dr. Krushnamegh Kunte and Dr. Sudipta Chatterjee

St. Joseph's College, Bangalore University (Now St. Joseph's University), Chemistry, Environmental Science, Zoology. Bangalore, India **B.Sc. 2014**
Thesis: History of water management in Bangalore; **Advisor**: Dr. B. S. Prabhakar

Publications

Potdar, S., Steven, J, C., Westerman, E, L (2025) The role of epigenetics and non-genetic inheritance in plant-pollinator interactions: A perspective. *Integrative and Comparative Biology*. https://doi.org/10.1093/icb/icaf109

Sprayberry, J, D, H., Ashman, T-L., Crall, J., Hranitz, J., Jankauski, M., Lihoreau, M., **Potdar, S**., Rafferty, N, E., Rittschof, C, C., Smith, M, A-Y., Valdes, I., Westerman, E, L (2025) Plant-pollinator interactions in the Anthropocene: why we need a systems approach. *Integrative and Comparative Biology*. https://doi.org/10.1093/icb/icaf062

Gharpure, G., Chanam, J., Lamsal, D., Ranganathan, Y., **Potdar, S**., Rai, S., Saikia, A., Rai, A., Lepcha, D., Subba, D., Lepcha, D.T., Talukdar, H., Vedamurthy, J., Rai, M., Bhutia, O., Rai, S., Chettri, S., Sankaran, M., Olsson, S.B (2025) Consistency in floral volatiles impacts plant-pollinator interactions in the face of environmental change in the Eastern Himalayas.
BioRxiv: https://www.biorxiv.org/content/10.1101/2025.02.26.640254v1

Potdar, S., Dinakar, M., Westerman, E, L (2024) Behavioural changes in aposematic *Heliconius melpomene* butterflies in response to their predatory bird calls. *Behavioural Processes (*220). https://doi.org/10.1016/j.beproc.2024.105071

Potdar, S., Westerman, E, L (2021) Digest: Recurrence of sexually dimorphic neurological structures in neotropical butterflies. *Evolution* 75-12: 3221-23. https://doi.org/10.1111/evo.14401

Zhang, Y., Teng, D., Lu, W., Liu, M., Zeng, H., Cao, L., Southcott, L., **Potdar, S.**, Westerman, E., Zhu, A, J., Zhang, W (2021) A widely diverged locus involved in locomotor adaptation in *Heliconius* butterflies. *Science Advances* (7): eabh2340 DOI: 10.1126/sciadv.abh2340

Seshadri, K,S., Krishna, M,B., Balakrishna, S., Kumar, S,M., Prabhakar,B,S., Nitin, R., Kishan, S,B., Vinay, K,S., Gautham, G,S., Narayan, V., **Potdar, S.**, Daga, P., Kumar, P,T (2013) Ruining the ecology of Hesaraghatta lake- The role of bird photographers. *Conservation India*. http://www.conservationindia.org/wp-content/files_mf/small_Hesaraghatta-Photographers.pdf

Potdar, S., Kasmaii, K., Powell, C., Westerman, E, L (*in prep*) The neurogenomics of differential mate preference learning in *Heliconius melpomene* butterflies.

Potdar, S., Westerman, E, L (*in prep*) The effect of male pre-mating experience and female phenotype on spermatophore proteomics in *Bicyclus anynana* butterflies.

Grants and Awards

Research Grants:

IDeA Proteomics 2-week internship and free sample analyses ($5100) **2023**
The Ron Leuschner Memorial Fund, The Lepidopterists' Society ($500) **2021**
Grants-in-Aid of Research (GIAR), Society for Integrative and Comparative Biology (SICB) ($1000) **2020**

Conference Travel Grants:

Doctoral Student Travel Grant, University of Arkansas ($1100) **2023**
Graduate Professional Student Congress (GPSC) travel grant ($750) **2023**
NSF Edge 2022 travel grant ($1194) **2022**
Doctoral Student Travel Grant, University of Arkansas ($1100) **2022**

Honors:

James and Carol Hendren Fellowship, University of Arkansas ($3500) **2023**
Arkansas Entomological Society Meeting Best Student Speaker ($80) **2019**
Student Conference on Conservation Science Best Student Talk ($84) **2017**

Contributed presentations

Invited talks:

Potdar, S., Madison Jennings, My Ly, Dmitry Kutcherov, Neelendra Joshi, Erica L. Westerman., Circadian rhythm of flower traits facilitate nocturnal pollination in apple *Malus domestica*. Society for Integrative and Comparative Biology (SICB) conference, Atlanta, GA, USA **2025**

Potdar, S., So, you want to get the most out of a Masters in Environmental Science and Sustainability, How? St. Joseph's University, Bangalore, India **2024**

Potdar, S., Causes and consequences of behavioral plasticity in tropical butterflies.
Cornell University, Ithaca NY, USA **2024**

Potdar, S., Causes and consequences of mate preference learning in tropical butterflies.
University of Minnesota, Twin Cities MN, USA **2023**

Talks:

Potdar, S., Westerman, E. L. Social plasticity changes male ejaculate composition in the butterfly *Bicyclus anynana*.
Animal Behavior Society Meeting, Baltimore MD, USA **2025**

Potdar, S., Westerman, E. L. Proteomic consequences of male mate preference learning and female phenotype in the butterfly *Bicyclus anynana*.
Lepidopterists' Society Meeting, Ithaca NY, USA **2024**

Potdar, S., Kasmaii, K., Powell, C., Westerman, E. L. Neurogenomic causes and proteomic consequences of male mate preference learning in two butterflies.
Great Lakes Annual Meeting of Evolutionary Genomics (GLAM-EvoGen), Syracuse NY, USA **2024**

Potdar, S., Westerman, E.L. The neurogenomics associated with propensity to learn mate preferences in *Heliconius* butterflies.
Animal Behavior Society Annual Meeting, Portland OR, USA **2023**

Potdar, S., Westerman, E.L. Anti-predatory behavior of toxic butterflies in response to its predatory bird call.
Animal Behavior Society Annual Meeting, San Jośe, Costa Rica **2022**

Potdar,S., Westerman, E. L. Behavioral response of unpalatable *Heliconius* butterflies to their predatory bird calls.
Lepidopterists' Society Meeting, Virtual **2021**

Potdar,S., Westerman, E. L. Toxic, unpalatable and aposematic butterflies respond to specialist predatory bird calls.
Society for Integrative and Comparative Biology (SICB) Meeting, Virtual **2021**

Potdar,S., Westerman, E. L. Behavioral changes in unpalatable butterflies in response to predatory bird calls.
Animal Behavior Society Annual Meeting, Virtual **2020**

Potdar,S., Westerman, E. L. Behavioral changes in unpalatable butterflies in response to predatory bird calls.
Benthic Ecology Meeting, Virtual **2020**

Potdar, S., Sengupta, A., Chatterjee, S. Activity time budget of Indian cabbage white (*Pieris canidia*) across an elevational gradient in Himachal Pradesh, India.
Arkansas Entomological Society, Fort Smith AR, USA **2019**

Chanam, J., **Potdar, S**., Rao, S,R., Sreeman, S., Sankaran, M. Effect of warming on insect-pollinated plants, using *Coriandrum sativum* and *Cuminum cyminum* as model systems.
Student Conference on Conservation Science (SCCS), Bangalore, India **2017**

Posters:
Potdar, S., Sengupta, A., Chatterjee, S. Activity time budget of Indian cabbage white (*Pieris canidia*) across an elevational gradient in Himachal Pradesh, India.
Young Ecologists Talk and Interact (YETI) conference, Vadodara, India **2018**

Teaching

University of Arkansas, Fayetteville AR
Teaching assistant: Principles of Zoology **Fall 2020, Fall 2021, Fall 2022, Fall 2023**
Led ~30 person lab divided into two sections. Taught classification, internal and external anatomy, and ecological and evolutionary advances in the animal kingdom.
Teaching assistant: General Genetics Laboratory **Spring 2023**
Led ~48 person lab divided into two sections. Taught basics of genetics and conducted experiments using baker's yeast and fruit flies.
Teaching Assistant: Principles of Biology **Fall 2018, Spring 2019, Fall 2019**
Led ~45 person lab divided into two sections. Taught basics of biology comprising of topics in ecology, evolutionary biology, animal behavior, taxonomy and phylogenetics, molecular biology and scientific writing. Graded weekly laboratory reports and exams.

Mt. Carmel College, Bangalore India
Guest lecture: Biodiversity Conservation and Management **May 2017 and Feb 2018**
Designed and delivered 6 lectures for 600 students on documenting diversity, biodiversity hot spots, values of biodiversity, threats to biodiversity, conservation and management of biodiversity in India.

Relevant Employment

Graduate Research Assistant **Spring 2024**
Department of Biological Sciences, University of Arkansas
Research Project: Investigating the pollinator diversity and abundance in solar farms of Central USA

Graduate Research Assistant **Spring 2020, Spring 2021, Spring 2022**
Department of Biological Sciences, University of Arkansas
Research Project: Illuminating the importance of non-bee pollinators and pollinator-plant specific interactions in Arkansas fruit production

Project Assistant **December 2016-June 2018**
Biodiversity, Ecosystem and Ecology Research (BEER) Laboratory, National Centre for Biological Sciences (NCBS), Bangalore, India.
Research Project: Effect of climate warming on insect-pollinated plants.
Research Advisors: Dr. Joyshree Chanam and Dr. Mahesh Sankaran

Additional Education and Workshops

VCF Files for Population Genomics: Scaling to millions of samples **August 2023**
Organized by NCBI and NIAID

Introduction to Inclusive Mentoring **July 2023**
Animal Behavior Society Conference, Portland OR, USA
Organized by Dr. Damian Elias, Dr. Ximena Bernal, and Dr. Cassandra Nunez

IDeA Proteomics Workshop **May 2023**
IDeA National Resource for Quantitative Proteomics, UAMS, Little Rock, AR
Director: Dr. Dennis Province

From genes to behavior: Functional genetic tools in diverse organisms Workshop **July 2022**
Animal Behavior Society Conference, San Jose, Costa Rica
Organized by Dr. Zoe Donaldson

Graduate Student Professional Development in Animal Behavior Workshop **May 2021**
Organized by: Dr. Paula A. Trillo, Dr. Alycia Lackey, Dr. Caitlin Wells, Dr. Beth Reinke, Dr. Delia Shelton, and Dr. Elizabeth Hobson

Chemical Ecology **March 2018-May 2018**
National Centre for Biological Sciences, Bangalore, India
Director: Dr. Radhika Venkatesan

Advanced Statistics Workshop for Ecologists **Dec 2018-Jan 2018**
Centre for Ecological Sciences, Indian Institute of Science, Bangalore, India
Directors: Dr. Vishwesha Guttal and Dr. Kavita Isvaran

Stack Emission Monitoring for Industrial Sector Workshop **June 2014**
Environmental Training Institute, Bangalore, India

Mapping Essentials **March 2013**
Gubbi Labs, Tumkur and St. Joseph's College, Bangalore, India
Directors: Dr. H.S. Sudhira and Dr. K.V. Gururaja

Skills

Molecular Biology and Genetics: RNA extraction, cDNA library preparation, protein quantification using BCA assay, quantitative and qualitative proteomics, Gel-electrophoresis, DNA sequencing, gene cloning and design, general fixation, immunostaining, immunofluorescence, western blot.

Physiology and Morphology: Dissection of butterfly eyes, antennae, and brains for light microscopy. Dissection of butterfly reproductive tracts for spermatophore, butterfly wing reflectance measurements using spectrophotometer, measurement of spermatophore area using ImageJ. Dissection of *Drosophila melanogaster* brain and ventral nerve cord (VNC), male and female reproductive tracts for light microscopy.

Animal Behavior: Focal and scan sampling of avian and lepidopteran behaviors. Scan sampling of insect pollinators, mate choice assays, mating assays, learning assays, *Drosophila* Activity Monitor (DAM) assay for *Drosophila* activity-sleeping behaviors, Capillary Feeder (CAFE) assays for *Drosophila* feeding behavior, *Drosophila* courtship assays, *Drosophila* mating plug ejection assays.

Field ecology: Butterfly and bird identification, population and diversity sampling using line and point transects for lepidoptera and birds. Diversity and abundance of plants using quadrant method sampling. Collection of floral and plant volatiles using solid phase micro extraction (SPME), head space sampling using silicon tubes with Polydimethylsiloxane (PDMS) and hexane extraction method. Collection of floral nectar using capillary extraction. Soil sampling using corer method. Wildlife and landscape photography.

Analytical Skills: Estimation of nitrogen mineralization in soil using microplate technique, total carbon and nitrogen estimation in plant and soil samples using LECO CN analyzer. Water sample analyses like estimation of BOD, COD and DO.

Computational skills: Bioinformatics using bash, R, and python (beginner) languages, Data analyses using R, map making using QGIS and Arc GIS

Service and Outreach

Animal Behavior Society Ally **2025-Present**

Vice President, BioGrad, University of Arkansas **2022-2024**
Planned, organized, and co-ordinated Biology Department invited seminar speakers for Fall 2022-Spring 2024, and helped plan and organize various social activities like hikes, grad student lunches, game nights, 3-minute thesis competition, involving biology graduate students.

Committee member of Season's Nature Club **2011-2014**
A club run by Department of Environmental Science at St. Joseph's College, Bangalore.
Organized guest talks, workshops, movie screenings, field visits and intra-college nature festivals. Awarded for the outstanding service towards the club.

Outreach

Mentored a 1st year graduate students in the Peer Mentorship Program (PMP) initiated by the University of Arkansas Biological Student Graduate Association (BioGrad) **2022-2023**

Participated at the Botanical gardens of the Ozarks Earth Days and Butterfly Camp events, teaching elementary and middle school students on butterfly and caterpillar ecology and behavior. **2019-2024**

Participated in STEAM summer camp in teaching butterfly biology to African-American children at the University of Arkansas **May 2023**

Judged the Behavioral and Social Science category in the Junior High division of the Northwest Arkansas Regional Science and Engineering Fair **March 2023**

Participated in the U of A Entomology Department's Insect Fest to teach school children about butterfly wing patterns, their ecological benefits and mimicry **October 2022**

Participated in Science camp at Leverett Elementary School and taught elementary school children on how to use and see organisms under a microscope **Spring 2019**

Co-organized a "Towards Alternatives for Development" workshop to discuss the alternatives to urban development and sustainability with Dr. Aseem Shrivastava and Dr. Ashish Kothari, authors of the book, "Churning the Earth- The Making of Global India" **November 2015**

Volunteered for “Neralu (meaning=shade) The Bangalore Tree Festival” which conducted urban tree identification and their importance, documentaries on trees in Bangalore, educational outreach for children. I participated in organizing the tree photography gallery at the festival **February 2014**

Volunteered in spreading awareness for the Earth Hour conducted by WWF, India **March 2013**

Volunteer at “META- The Josephite Festival of Literature” in which I was the official photographer covering the event **February 2013**

Part of a team performing biodiversity surveys and the villager’s dependency on forests at the Javalagiri Reserve Forest, Tamil Nadu, India **May 2012, May 2013**

Volunteered at the Jayamangali Blackbuck Reserve for the Blackbuck census jointly organized by the Wildlife Aware Nature Club and the Karnataka Forest Department **February 2012**

Professional Affiliations (Past and present)

Animal Behavior Society (ABS)
Society for the Study of Evolution (SSE)
The Society for Integrative and Comparative Biology (SICB)
The Lepidopterists’ Society