Bishwarup Paul, Ph.D.

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Work Experience

2021 – ····	🔖 **Research Associate,** Department of Biological Sciences, IISER Kolkata.
2019 – 2020	🔖 **Postdoctoral Research Fellow,** Department of Biology, IISER Tirupati.

Education

2013 – 2019	🔖 **Ph.D., IISER Kolkata** in Behavioural Ecology. Thesis title: *Facets of Brood Theft in a Tropical Ant.*
2011 – 2013	🔖 **M.S., IISER Kolkata** in Biological Sciences. Thesis title: *Impact of Stress on Nest Relocation in Ants.*
2007 – 2010	🔖 **B.Sc., Ramakrishna Mission Vidyamandira, University of Calcutta** in Microbiology (Honours).

Publications

1. Mukherjee, I., **Paul**, **B.**, & Annagiri, S. (In Review). Does information of target nest impact relocation dynamics in an indian ant?

2. **Paul**, **B.**, & Annagiri, S. (In Review). Achieving a balance between brood rescue and nest relocation on facing an emergency.

3. **Paul**, **B.**, & Annagiri, S. (2019). Caught red-handed: Behaviour of brood thieves in an indian ant. *Journal of Experimental Biology*, *222*(2).

4. **Paul**, **B.**, & Annagiri, S. (2018). Tricks of the trade: Mechanism of brood theft in an ant. *PloS one*, *13*(2), e0192144.

5. Annagiri, S., Kolay, S., **Paul**, **B.**, & Sona, C. (2017). Network approach to understanding the organization of and the consequence of targeted leader removal on an end-oriented task. *Current zoology*, *63*(3), 269–277.

6. **Paul**, **B.**, Paul, M., & Annagiri, S. (2016). Opportunistic brood theft in the context of colony relocation in an indian queenless ant. *Scientific reports*, *6*(1), 1–10.

Research Experience

Postdoctoral Research
Advisor: Prof. Sumana Annagiri, Department of Biological Sciences, IISER Kolkata.
Investigating the role of memory for navigation in the context of nest relocation in a primitively eusocial ant *Diacamma indicum*. Studying the formation of working and long-term memory, as well as interrupting consolidation of memory to cause reduction in navigational efficiency in order to study task performance and group dynamics.

2019 – 2020 **Postdoctoral Research**
Advisor: Dr. Nandini Rajamani, Department of Biology, IISER Tirupati.
Investigating the impact of urbanization on the behaviour and personality of Indian palm squirrels. Predicting the current distribution and forecasting the future distribution of several squirrel species. Meta-analysis for predicting the life history traits important for adapting to urbanization.

2013 – 2019 **Doctoral Research**
Advisor: Prof. Sumana Annagiri, Department of Biological Sciences, IISER Kolkata.
Investigation of the behaviour of intraspecific brood theft in the Indian queenless ant. Detailed study of the mechanism of theft and defence against theft. Individual-level assessment of behavioural modification. Investigation of the formation of memory and its importance for brood theft.

2013 **Masters' Dissertation (Semester II)**
Advisor: Prof. Sumana Annagiri, Department of Biological Sciences, IISER Kolkata.
Investigation of the robustness of the process of nest relocation in a primitively eusocial ant. Comparison of relocation dynamics under increasing levels of physical stress applied to colonies.

2012 – 2013 **Masters' Dissertation (Semester I)**
Advisor: Dr. Sankar Maiti, Department of Biological Sciences, IISER Kolkata.
Identification of the actin-binding region of the ACD domain of the protein VgrG-1 from *Vibrio cholerae* responsible for actin cross linking activity of the protein inside human cells.

2009 – 2010 **Bachelors' Group Project**
Advisor: Santanu Maitra, Department of Microbiology, Ramakrishna Mission Vidyamandira.
Investigation and quantification of resistance to nickel toxicity in the soil microorganisms collected from the wastelands of Kolkata. Identification of the microorganisms and developing pure cultures for further genetic and chemical analysis.

Conferences and Workshops

International Conferences

2020 **Animal Behaviour Live: Annual Online Conference**
Virtual Poster: Paul, B. & Annagiri, S. Investigating break-ins: Intraspecific brood theft in a tropical ant.

2020 57th **Annual Conference of the Animal Behaviour Society (Virtual).**
Talk: Paul, B. & Annagiri, S. Investigating break-ins: Intraspecific brood theft in a tropical ant.

2018 9th **European conference on Behavioural Biology (ECBB),** Liverpool, United Kingdom.
Poster: Paul, B. & Annagiri, S. Behaviour of brood thieves in an Indian ant.

Conferences and Workshops (continued)

2017   ■ **International Conference in Zoological Sciences and Ants (**11th **ANeT),** Punjabi University, India.
Talk: Paul, B. & Annagiri, S. Mechanism of brood theft in an Indian ant.

National Conferences

2020   ■ **CitSci India 2020**
Virtual Poster: : Paul, B., Palassery, S.A., D'Souza, S., Udayraj, S. & Rajamani, N. Modelling palm squirrel distributions with citizen science, social media and traditional data sources.

2019   ■ **Understanding Behaviour,** IISER Kolkata.
Speed Talk-cum-Poster: Paul, B. & Annagiri, S. Achieving balance between two tasks at hand: Rescue vs relocation in an ant system.

2018   ■ **Frontiers in Modern Biology (FIMB),** IISER Kolkata.
Poster: Paul, B. & Annagiri, S. Behaviour of brood thieves in an Indian ant.

2017   ■ **Young Ecologists Talk and Interact (YETI),** Tezpur University.
Poster: Paul, B. & Annagiri, S. Intraspecific brood theft in an Indian queenless ant.

2016   ■ **India – Behaviour, Ecology and Evolution (I-BEE),** Corbett National Park.
Talk: Paul, B. & Annagiri, S. Intraspecific brood theft in an Indian queenless ant.

2015   ■ **Frontiers in Modern Biology (FIMB),** IISER Kolkata.
Poster: Paul, B., Paul, M. & Annagiri, S. Robbing thy neighbour: A study in an Indian queenless ant.

2015   ■ **National Conference on Ethology and Evolution (NCEE),** (39th Annual Meeting of the Ethological Society of India), IISER Mohali,.
Poster: Paul, B., Paul, M. & Annagiri, S. Robbing thy neighbour: A study in an Indian queenless ant.

2013   ■ **Frontiers in Modern Biology (FIMB),** IISER Kolkata.
Poster: Paul, B., Paul, M. & Annagiri, S. Stealing the young: A case study in the Indian queenless ant.

Workshops

2020   ■ **Application of Geoinformatics in Ecological Studies,** IIRS, ISRO.

2017   ■ 1st **DST-SERB School on Chemical Ecology**, NCBS.

2016   ■ **Speciation and the Web of Life**, IISER Thiruvananthapuram.

2014   ■ **SERB School in Neuroscience,** 8th **Edition (Brain Circuits)**, IISER Pune.

Teaching Experience

2020   ■ **Co-instructor: Behavioural Ecology** with Dr. Nandini Rajamani, IISER Tirupati.

2018   ■ **Teaching Assistant: Organismal Biology and Evolution** by Prof. Sumana Annagiri, IISER Kolkata.

2016   ■ **Teaching Assistant: Animal Behaviour (Lab)** by Prof. Sumana Annagiri, IISER Kolkata.

2016   ■ **Teaching Assistant: Ecology & Behaviour (Lab)** by Prof. Sumana Annagiri and Dr. Anindita Bhadra, IISER Kolkata.

2015   ■ **Teaching Assistant: Organismal Biology and Evolution** by Prof. Sumana Annagiri, IISER Kolkata.

2014   ■ **Teaching Assistant: Organismal Biology and Evolution** by Prof. Sumana Annagiri, IISER Kolkata.

Miscellaneous Experience

Awards and Achievements

2019 – 2020	🔖	**Postdoctoral Research Fellowship**, Department of Biology, IISER Tirupati.
2018	🔖	**International Travel Grant**, IISER Kolkata.
2017	🔖	**Best Oral Presentation**, International conference for Zoological Sciences and Ants (11th ANeT), Punjabi University, India.
2012	🔖	**Eligibility for Lectureship**, Joint CSIR-UGC Test for Junior Research Fellowship and Eligibility for Lectureship (NET).
2011 – 2019	🔖	**Post-Bachelors Integrated Ph.D. (PBIP) Fellowship**, Department of Biological Sciences, IISER Kolkata.
2007 – 2010	🔖	**INSPIRE-SHE scholarship for Higher studies in Basic and Natural Sciences**, Department of Science and Technology (DST), India.

Participation in Academic Events

2021	🔖	**Moderator for a session** of the workshop *SciComm for Scientists*, IISER Kolkata.
2019	🔖	**Co-conducted the workshop "Basics of working with R"** in the conference *Understanding Behaviour*, IISER Kolkata.
2019	🔖	**Member of the organizing committee** of the conference *Understanding Behaviour*, IISER Kolkata.
2017	🔖	**Student volunteer** for organizing the workshop *Ambassadors of Evolution*, European Society for Evolutionary Biology (ESEB) Outreach Initiative, IISER Kolkata.

Peer Review for Journals

2020	🔖	**Insectes Sociaux**.

Memberships

2020 – 2021	🔖	**Animal Behaviour Society, USA**. Annual membership.
2015	🔖	**Ethological Society of India**. Lifetime membership.

Skills

Languages	🔖	Fluent reading, writing and speaking in English, Hindi and Bengali.
Operating Systems	🔖	Microsoft Windows, GNU/Linux (Debian, Arch and derivatives).
Coding	🔖	R, Python, GitHub.
Data Analysis	🔖	R, statistiXL.
Document Writing	🔖	Microsoft Office/Libreoffice, LaTeX, Markdown.
Web Design	🔖	HTML, CSS.
Graphic Art/Design	🔖	Adobe Photoshop, Adobe Illustrator, GIMP, Inkscape, Krita, experienced in using Wacom Graphic Tablets.
Video Editing	🔖	Kdenlive, Openshot.