

DR. NABYENDU RAKSHIT

M.Sc, Ph.D. (Visva-Bharati University)

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Date of Birth: 12th April, 1990

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Current Position

State Aided College Teacher I (SACT I) at Department of Zoology, Gushkara Mahavidyalaya (Affiliated to The University of Burdwan), Gushkara, Purba Bardhaman-713128, West Bengal, India.

Research Area & Interests

- ✚ Development of **Food Web Model** and exploring Ecosystem Trophic Structure
- ✚ Evaluation of **Ecosystem Health** and its Sustainable Management
- ✚ Application of Artificial Neural Networks (**ANN**) and Self Organizing Maps (**SOM**)
- ✚ Vector borne **plant disease dynamics** and management

Doctoral thesis title: - MODELLING TEMPORAL VARIATIONS IN FOOD WEB INTERACTIONS OF HOOGLHY ESTUARY, INDIA

Supervisor: - **Prof. Santanu Ray**

Affiliation: - Systems Ecology & Ecological Modelling Laboratory, Department of Zoology, Visva-Bharati University

Year: - **2020 (August 4)**

Research Experience

- **Jan 2017 – Dec 2019:** - UGC-NET Senior Research Fellow
- **Jan 2015 – Dec 2016:** - UGC-NET Junior Research Fellow
- **Dec 2013 – Dec 2014:** - UGC Non-NET Fellow

Academic Credentials

ACADEMIC QUALIFICATIONS:

Year	Examination	Board/University	Marks	Institute
2020	Ph.D. (in Zoology)	Visva-Bharati University	NA	Sikha-Bhavana (Institute of Science), Visva-Bharati
2012	M.Sc (in Zoology)	Visva-Bharati University	72.17%	Sikha-Bhavana (Institute of Science), Visva-Bharati
2010	B. Sc (Zoology Honours)	University of Burdwan	67.625%	Vivekananda Mahavidyalaya, Burdwan
2007	Higher Secondary Examination (XII)	West Bengal Council of Higher Secondary Education (W.B.C.H.S.E.)	65.4%	Burdwan Municipal High School, Burdwan-713101
2005	Secondary Examination (X)	West Bengal Board of Secondary Education (W.B.B.S.E.)	82.5%	Burdwan Municipal High School, Burdwan-713101

PROFESSIONAL RECOGNITION/AWARD/FELLOWSHIP RECEIVED: -

Name of Award/Fellowship	Awarding Agency	Year
CSIR- JRF (Junior Research Fellow)	CSIR-UGC	Dec 2014
UGC-JRF (Junior Research Fellow)	CSIR-UGC	June 2014
International Travel Fellowship	Department of Science and Technology (DST), Government of India	2018
International Travel Fellowship	Department of Biotechnology (DBT), Government of India	2016

International Travel Grant	FAIRSEA- European Regional Development Fund	2019
Graduate Aptitude Test in Engineering (GATE)	Department of Higher Education, MHRD, Government of India	2011 & 2012
National Eligibility Test Lectureship (NET-LS)	CSIR-UGC	Dec, 2011 & June, Dec 2012
Teacher Eligibility Test (TET)	West Bengal School Service Commission	2011 & 2015

Teaching Experience

Teaching experience as a **State Aided College Teacher I (SACT I)**, earlier designated as **Guest Lecturer** at the Department of Zoology, Guskara Mahavidyalaya, Burdwan, affiliated to the University of Burdwan (from 23 Aug 2014 till now).

Reviewer in Journal

- **Marine Pollution Bulletin** since 2020 (Elsevier)
- **Regional Studies in Marine Science** since 2017 (Elsevier)
- **Indian Journal of Fisheries** since 2020 (Indian Council of Agricultural Research)
- **Indian Journal of Science and Technology** since 2020 (Indian Society for Education and Environment)
- **Ecology and Evolutionary Biology** since 2020 (Science Publishing Group)
- Special Achievement: Outstanding Reviewer in the journal – **Regional Studies in Marine Science**, April 2018.

Publications

ARTICLES IN JOURNALS

1. **Rakshit, N.**, Basir, F. Al., Banerjee, A., Ray, S. (2019) Dynamics of plant mosaic disease propagation and the usefulness of roguing as an alternative biological control. *Ecological Complexity*, 38, 15-23.
2. **Rakshit, N.**, Banerjee, A., Mukherjee, J., Chakrabarty, M., Borrett, S. R., & Ray, S. (2017). Comparative study of food webs from two different time periods of Hooghly Matla estuarine system, India through network analysis. *Ecological Modelling*, 356, 25-37.
3. Sinha, S., Banerjee, A., **Rakshit, N.**, Akkur, R.V., Bhadury, P., Ray, S. (2021) Importance of benthic-pelagic coupling in food-web interactions of Kakinada Bay, India. *Ecological Informatics*, 61, 101208

4. Banerjee, A., Chakrabarty, M., **Rakshit, N.**, Bhowmick, A.R., & Ray, S. (2018). Environmental factors as indicators of dissolved oxygen concentration and zooplankton abundance: Deep learning versus traditional regression approach. *Ecological Indicators*, 100, 99-117.
5. Banerjee, A., Chakrabarty, M., **Rakshit, N.**, Mukherjee, J., & Ray, S. (2017). Indicators and assessment of ecosystem health of Bakreswar reservoir, India: An approach through network analysis. *Ecological Indicators*, 80, 163-173.
6. Banerjee, A., Banerjee, M., Mukherjee, J., **Rakshit, N.**, & Ray, S. (2016). Trophic relationships and ecosystem functioning of Bakreswar Reservoir, India. *Ecological Informatics*, 36, 50-60.
7. Mukherjee, J., Karan, S., Chakrabarty, M., Banerjee, A., **Rakshit, N.**, & Ray, S. (2018). An approach towards quantification of ecosystem trophic status and health through ecological network analysis applied in Hooghly-Matla estuarine system, India. *Ecological Indicators*, 100, 55-68.
8. Chakrabarty, M., Banerjee, A., Mukherjee, J., **Rakshit, N.**, & Ray, S. (2016). Spatial pattern analysis of zooplankton community of Bakreswar reservoir, India. *Energy, Ecology and Environment*, 1-9.

BOOK CHAPTERS

1. **Rakshit N.**, Banerjee A., Sinha S., Ray S. (2020) Recent Trends of Ecosystem Health and Biodiversity Status of Pelagic-Benthic Coupled System in Indian Estuaries with Special Emphasis on Hooghly Estuary, India. In: Roy P., Cao X., Li XZ., Das P., Deo S. (eds) *Mathematical Analysis and Applications in Modeling*. ICMAAM 2018. Springer Proceedings in Mathematics & Statistics, vol 302. Springer, Singapore ISBN 978-981-15-0422-8.
2. Banerjee, A., **Rakshit, N.**, and Ray, S. 2018 “Structural Dynamic Modelling”. In: Reference Module in Earth Systems and Environmental Sciences, From Encyclopedia of Ecology, Second Edition. Elsevier. (DOI: 10.1016/B978-0-12-409548-9.11202-3).
3. Sinha S., Banerjee A., **Rakshit N.**, Ray S. (2020) Modelling Studies Focusing on Microphytobenthos and Its Role in Benthic-Pelagic Coupling. In: Roy P., Cao X., Li XZ., Das P., Deo S. (eds) *Mathematical Analysis and Applications in Modeling*. ICMAAM 2018. Springer Proceedings in Mathematics & Statistics, vol 302. Springer, Singapore ISBN 978-981-15-0422-8.

ABSTRACT

1. **Rakshit, N.**, and Ray, S. “Assessment of ecosystem health through network analysis of pelagic-benthic coupled system in Hooghly estuary, India” in proceedings of 5th India Biodiversity Meet 2018, ISI Kolkata (ISBN 978-93- 5300-935-9)

Poster/Oral Presentations

Oral Presentation

1. “National Seminar on Advancement of Biology in the 21st Century” (NSAB-2020) organized by Department of Zoology, Visva-Bharati University in collaboration with The Zoological Society, Kolkata during 28-29 Feb, 2020.

2. “**International Conference on 7th India Biodiversity Meet-2019**” (IBM-2019) organized by Agriculture and Ecological Unit, Indian Statistical Institute, Kolkata during 19-21 November, 2019.
3. “**International Society for Ecological Modelling Global Conference 2016**” (ISEM-2016) organized by Towson University, Baltimore, MD, USA during 8-12 May, 2016

Poster Presentation

1. “**10th International Conference on Ecological Informatics**” (ICEI-2018) organized by Friedrich Schiller University Jena, Germany during 24-28 September, 2018.
2. “**International Conference on India Biodiversity Meet-2015**” (IBM-2015) organized by Agriculture and Ecological Unit, Indian Statistical Institute, Kolkata during 16-18 November, 2015.
3. “**International Conference on Environmental Biology and Ecological Modelling (ICEBEM)**”, organized by Visva-Bharati University, Santiniketan, India from February 24 to 26, 2014.
4. “**International Conference on India Biodiversity Meet-2014**” (IBM-2014) organized by Agriculture and Ecological Unit, Indian Statistical Institute, Kolkata during 21-23 November, 2014.
5. “**DBT-BUILDER Sponsored National Symposium on Environmental Impact on Biodiversity and Plant Development**” organized by Department of Biological Sciences, Presidency University during 19-20 February, 2015.

Seminar/Workshop/Symposium Attended

1. Santa Fe Institute's Massive Open Online Course, ‘**Introduction to Agent-Based Modeling**’ organized by Complexity Explorer, an education project of the Santa Fe Institute, Santa Fe, Mexico 87501, USA from 19th April, 2021 to 10th July, 2021.
2. Star College Scheme DBT Sponsored Value Added Course entitled, ‘**Python in Biology: An Introductory Programming Course for Complete Beginners**’ organized by Department of Zoology, Jhargram Raj College, Jhargram, West Bengal, India, 721507 from 19th September, 2020 to 11th October, 2020 (twice a week, total 16 hours of engagement).
3. Workshop on “**Application of 'R' in Research & Development**” organized by A. K. Dasgupta Centre for Planning and Development, Visva-Bharati during 14-23 September, 2019.
4. Workshop on “**Understanding SPSS & its Application in Research**” organized by A. K. Dasgupta Centre for Planning and Development, Visva-Bharati during 17-23 July, 2019.
5. Workshop on “**First advance course on quantitative methods for ecosystem approach to fisheries applications**” organized by FAIRSEA- European Regional Development Fund and Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - **OGS at Venice, Italy** during 1-6 July, 2019.

6. Workshop on "**Species Distribution Modelling with MaxEnt and R (2nd chapter)**" organized by Agriculture and Ecological Unit, Indian Statistical Institute, Kolkata during 3-9 December, 2018.
7. International Workshop on "**Land-Ocean-Atmosphere Interaction, Greenhouse Gases and Coastal Processes**" at the Centre for Climate and Environmental Studies, Indian Institute of Science Education and Research Kolkata (IISER Kolkata), West Bengal during 24 July-5 August 2018.
8. "National Conference on **Frontier Areas of Research and Applications Using Electron Microscopy**", organized by Visva-Bharati University, Santiniketan, India during March 16, 2018.
9. "**International Training Course on "Fishery Stock Assessment and Ecosystem Modelling"**" organized by International Training Centre for Operational Oceanography, ESSO-INCOIS, Hyderabad during 16-22 September, 2015.
10. "Workshop on **Basic Statistical Methods and R-programming**" organized by Agriculture and Ecological Unit, Indian Statistical Institute, Kolkata during 25-29 May, 2015.
11. "One Day State Level Workshop on **Statistical Methods for Students of Biological and Social Sciences**" (Sponsored by UGC) organized by Department of Statistics, Vivekananda Mahavidyalaya, Burdwan on 7th February, 2008.

Webinar Attended

1. 'My Journey from the 93D puff to hsr-omega IncRNAs' delivered by Prof. S. C. Lakhota, BHU Distinguished Professor, Banaras Hindu University, Varanasi, India and Organized by Multi-institute alumni of Zoology; Mentored by the Translational Outcomes Research Group, Department of Zoology, University of Calcutta on 23 August, 2020.
2. "**Two Days State Level Webinar on Covid-19: Molecular aspects and its Possible managements**" organized by Dept. of Zoology & Botany supported by IQAC, Kalna College during 7-8 August, 2020.
3. "**Getting your article published in Biofilm (session 1)**" organized by Researcher Academy on Campus, Elsevier on Thursday 02 July, 2020.
4. "**Getting your article published in Biofilm (session 2)**" organized by Researcher Academy on Campus, Elsevier on Thursday 02 July, 2020.

Member of the Organizing Committee

1. Joint Convener of the "**Awareness Programme on Plight of Asian and African Elephants**" on the occasion of World Elephant Day organized by IQAC and Department of Zoology, Gushkara Mahavidyalaya in collaboration with Durgapur Wildlife Information & Nature Guide Society (WINGS) on 12th August, 2020.
2. Organizing Committee Member of the "**International Lecture Series on Nutrition 2021**" organized by IQAC, Department of Nutrition, Gushkara Mahavidyalaya from 1 July to 14 July, 2021.

3. Organizing Committee Member of the International Webinar on "**International Joint Venture on the eve of World Nature Conservation Day**" organized by IQAC, Department of Zoology and Botany, Gushkara Mahavidyalaya in collaboration with Friends of Environment on 28th July, 2020.

Skills & Activities

<i>Skills</i>	Ecology and Evolution, Ecological Modeling, Static Modelling
<i>Languages</i>	Bengali, English, Hindi
<i>Scientific Memberships</i>	The International Society for Ecological Modelling

Computer Proficiency

- Conversant with Windows Operating System and various versions of it.
- Proficient in Microsoft Word, Excel, PowerPoint and other tools of Microsoft Office Suite.
- Proficient in Programming software like Visual Basic
- Experience in working with STELLA (Dynamic Modelling), ECOPATH (static modeling), NetLogo, R (individual-based modeling) software.

Signature