

Lakshmi Narayan Guin, M.Sc., B.Ed., Ph.D. (Applied Mathematics)

CONTACT

INFORMATION

Department of Mathematics
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DESIGNATION

Professor of Mathematics

RESEARCH INTERESTS

Mathematical Ecology and Nonlinear Dynamics (**Major Area**)
Real-World Dynamical Systems and Simulations, Population Dynamics,
Differential Equations and its Applications in Ecology, Stochastic Stability
Analysis, Chaos and Synchronization in Related Areas (**Specific Interests**)

EDUCATION

- B.Sc. (Hons.) in Mathematics Siksha-Bhavana, Visva-Bharati
- M.Sc. in Mathematics Siksha-Bhavana, Visva-Bharati
- B.Ed. Katwa College, The University of Burdwan
- Ph.D. in Applied Mathematics Siksha-Bhavana, Visva-Bharati
- Ph.D. Thesis Title: [Turing instabilities and spatial pattern formation on some predator-prey models](#)

Home Page: <https://sites.google.com/site/lakshmiguin/>

TEACHING EXPERIENCE (STARTING WITH THE MOST RECENT)

Sl. No.	Institute/ University	Designation	Duration	Length of service YYMM	Whether PG/UG	Permanent/ Contract/ Temporary/ Consolidated
1	Mankar College, The University of Burdwan, Purba Bardhaman, West Bengal, India	Assistant Professor	18.04.2007 - 10.11.2010	03 Years 07 Months	UG	Permanent (Recommended by College Service Commission, West Bengal, India)
2	Visva-Bharati (A Central University), India	Assistant Professor, Associate Professor and Professor	11.11.2010 – 17.04.2021, 18.04.2021 – 17.04.2024 and 18.04.2024-Till date	15 Years 2 Months	UG and PG	Permanent

RESEARCH EXPERIENCE

- Research Scholar (**26.09.2010-30.12.2014**), Department of Mathematics, Visva-Bharati (A Central University), Santiniketan-731 235, West Bengal, India.
- Research Project

Project	Name of the funding Agency	Duration	Remarks
Minor Research Project (Title: The study of the stability and spatial patterns through diffusion-driven instability in a predator-prey model)	University Grants Commission, New Delhi-110002, India	Two years w.e.f. 01.07.2012 (Ref. No.: 41-1435/2012(SR) dated 17.05.2012)	Completed

AWARD / RECOGNITION

<https://topresearcherslist.com/Home/Profile?AuthFull=Guin,%20Lakshmi%20Narayan&FirstYear=2012>

Top 2% scientists worldwide / Stanford University / Subject: Mathematics / Research Field: Numerical & Computational Mathematics

https://scholargps.com/top-scholars?specialty=Spatiotemporal+pattern&ranking_duration=LIFETIME&p=2

(2025 - Top 0.5% of all scholars worldwide / Rank 27 / Topic: Spatiotemporal Pattern / ScholarGPS-POWERING SCHOLARLY ANALYTICS)

ScholarGPS is a California-based company that applies artificial intelligence, data mining, machine learning, and other data science techniques to its massive database of over 200 million publications and 3 billion citations to rank over 30 million scholars and 120,000 institutions worldwide. For more information about individual scholars, specific institutions, subject matter experts, details of our ranking methodologies and more, visit ScholarGPS.com (<https://scholargps.com/disciplines/240/information-sciences>).

https://scholargps.com/top-scholars?specialty=Spatiotemporal+pattern&ranking_duration=LIFETIME&p=2

(2024 - Top 0.5% of all scholars worldwide / Rank 23 / Topic: Spatiotemporal Pattern / ScholarGPS-POWERING SCHOLARLY ANALYTICS)

https://scholargps.com/top-scholars?specialty=Spatiotemporal+pattern&ranking_duration=LIFETIME&year=2023&p=2

(2023 - Top 0.5% of all scholars worldwide / Rank 36 / Topic: Spatiotemporal Pattern / ScholarGPS-POWERING SCHOLARLY ANALYTICS)

https://scholargps.com/search.php?type=profile&year=2022&expert_search=true&p=2&ranking_duration=LIFETIME&expertise=Spatiotemporal+pattern&ref=fadf9fbf7409b9497cb2#33

(2022 - Top 0.5% of all scholars worldwide / Rank 33 / Topic: Spatiotemporal Pattern / ScholarGPS-POWERING SCHOLARLY ANALYTICS)

National Scholarship, Ministry of Human Resource Development (MHRD), Department of Education, Government of India, New Delhi [Letter No.: F.1-1/97/NS-1], Year: 1997-1999

RESEARCH GUIDE FOR STUDENTS

- (1) **Benukar Mondal** (Ph.D. Thesis Title: Dynamical complexity in some nonlinear mathematical models of ecological systems; Award Date: 24/04/2018; Registration No. : VB- 248 of 2006-07)

- (2) **Debasmita Mukherjee** (Ph.D. Thesis Title: Studies on the Formation and Evolution of Atherosclerosis Through Mathematical Models; Award Date: 28/08/2020; Registration No.: VB - 2328 of 2016 - 2017)
- (3) **Krishnendu Sarkar** (Ph.D. Thesis Title: Dynamical behaviour of some models of interacting populations; Award Date: 18/02/2022; Registration No.: VB-2342 of 2016-17, Dated 28.11.2016)
- (4) **Gourav Mandal** (Ph.D. Thesis Title: Nonlinear dynamical system of some interacting species having ecological implications; Award Date: 26/02/2026; Registration No.: VB-0261 of 2018-19, Dated 27.12.2020)
- (5) **Sukanya Das** (Ph.D. Thesis Title: Mathematical models and their analyses on the dynamics of some biological phenomena; Registration No.: VB-3031 of 2021-22, Dated 20.11.2021)
- (6) **Swagata Dutta** (Ph.D. Thesis Title: Dynamic response of some mathematical models having various ecological implications; Registration No.: VB-3032 of 2021-22, Dated 20.11.2021)
- (7) **Deepabali Datta** (Ph.D. Thesis Title: Comprehensive analysis of stability and instability in ecological models with alternative food source dynamics; Registration No.: VB-9013 of 2023-24, Dated 23.12.2023)

PUBLICATIONS

- (1) **Lakshmi Narayan Guin** and Prashanta Kumar Mandal; Spatiotemporal dynamics of reaction-diffusion models of interacting populations, **Applied Mathematical Modelling (AMM)**, Elsevier, Vol. 38, No. 17-18, pp. 4417-4427, 2014, <http://dx.doi.org/10.1016/j.apm.2014.02.022>.
- (2) **Lakshmi Narayan Guin**; Existence of spatial patterns in a predator-prey model with self- and cross-diffusion, **Applied Mathematics and Computation (AMC)**, Elsevier, Vol. 226, pp. 320-335, 2014, <http://dx.doi.org/10.1016/j.amc.2013.10.005>.
- (3) **Lakshmi Narayan Guin** and Prashanta Kumar Mandal; Spatial pattern in a diffusive predator-prey model with sigmoid ratio-dependent functional response, **International Journal of Biomathematics (IJB)**, World Scientific, Vol. 7, No. 5, pp. 1450047 (1-26), 2014, DOI: 10.1142/S1793524514500478.
- (4) **Lakshmi Narayan Guin** and Prashanta Kumar Mandal; Effect of prey refuge on spatiotemporal dynamics of reaction-diffusion system, **Computers and Mathematics with Applications (CAMWA)**, Elsevier, Vol. 68, No. 10, pp. 1325-1340, 2014, <http://dx.doi.org/10.1016/j.camwa.2014.08.025>.
- (5) **Lakshmi Narayan Guin**; Impact of prey refuge on spatial pattern formation in a reaction-diffusion predator-prey model, **Proceedings of Applied Nonlinear Dynamics and Chaos (ANDC)**, Elsevier, 2014, ISBN: 9789351072508.
- (6) **Lakshmi Narayan Guin**, Mainul Haque and Prashanta Kumar Mandal; The spatial patterns through diffusion-driven instability in a predator-prey model, **Applied Mathematical Modelling (AMM)**, Elsevier, Vol. 36, No. 5, pp. 1825-1841, 2014, doi:10.1016/j.apm.2011.05.055.
- (7) **Lakshmi Narayan Guin**, Prashanta Kumar Mandal and Santabrata Chakravarty; Existence of spatial patterns in reaction-diffusion systems incorporating a prey refuge, **Nonlinear Analysis: Modelling and**

Control (NAMC), LANA, Vol. 20, No. 4, pp. 509-527 (ISSN 1392-5113), 2015, <http://dx.doi.org/10.15388/NA.2015.4.4>.

(8) **Lakshmi Narayan Guin**; Spatial patterns through Turing instability in a reaction-diffusion predator-prey model, **Mathematics and Computers in Simulation (MATCOM)**, Elsevier, Vol. 109, pp. 174-185, 2015, <http://dx.doi.org/10.1016/j.matcom.2014.10.002>.

(9) **Lakshmi Narayan Guin**, Benurkar Mondal and Santabrata Chakravarty; Existence of spatiotemporal patterns in the reaction-diffusion predator-prey model incorporating prey refuge, **International Journal of Biomathematics (IJB)**, World Scientific, Vol. 9, No. 6, pp. 1650085 (1-25), 2016, DOI: 10.1142/S1793524516500856.

(10) **Lakshmi Narayan Guin**, Benurkar Mondal and Santabrata Chakravarty; Stationary patterns induced by self- and cross-diffusion in a Beddington-DeAngelis predator-prey model, **International Journal of Dynamics and Control (IJDY)**, Springer, Vol. 5, No. 4, pp. 1051–1062, 2017, DOI: 10.1007/s40435-016-0281-7.

(11) **Lakshmi Narayan Guin** and Sattwika Acharya; Dynamic behaviour of a reaction-diffusion predator-prey model with both refuge and harvesting, **Nonlinear Dynamics (NODY)**, Springer, Vol. 88, No. 2, pp. 1501-1533, 2017, DOI: 10.1007/s11071-016-3326-8.

(12) **Lakshmi Narayan Guin** and Hunki Baek; Comparative study between prey-dependent and ratio-dependent predator-prey models relating to patterning phenomenon, **Mathematics and Computers in Simulation (MATCOM)**, Elsevier, Vol. 146, pp. 100-117, 2018, <https://doi.org/10.1016/j.matcom.2017.10.015>.

(13) **Lakshmi Narayan Guin**, Benurkar Mondal and Santabrata Chakravarty; Spatiotemporal patterns of a pursuit-evasion generalist predator-prey model with prey harvesting, **Journal of Applied Nonlinear Dynamics (JAND)**, L & H Scientific Publishing, LLC, Vol. 7, No. 2, pp. 165-177, 2018, DOI: 10.5890/JAND.2018.06.005.

(14) Muniyagounder Sambath, Krishnan Balachandran and **Lakshmi Narayan Guin**; Spatiotemporal patterns in a predator-prey model with cross-diffusion effect, **International Journal of Bifurcation and Chaos (IJBC)**, World Scientific, Vol. 28, No. 2, pp. 1830004 (12 pages), 2018, DOI: 10.1142/S0218127418300045.

(15) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Dynamical Response of Atherosclerotic Plaque Through Mathematical Model, **Biophysical Reviews and Letters (BRL)**, World Scientific, Vol. 14, No. 04, pp. 217 (26 pages), 2019, DOI: 10.1142/S1793048019500036.

(16) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; A reaction-diffusion mathematical model on mild atherosclerosis, **Modeling Earth Systems and Environment (MESE)**, Springer, Vol. 05, pp. 1853-1865, 2019, DOI: 10.1007/s40808-019-00643-6.

(17) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Dynamical Behaviour of a Mathematical Model of Early Atherosclerosis, **International Journal of Modeling, Simulation, and Scientific Computing (IJMSSC)**, World Scientific, Vol. 11, No. 01, 2020, pp. 2050006 (23 pages), DOI: 10.1142/S1793962320500063.

(18) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Stability Analysis of Mathematical Modeling of Atherosclerotic Plaque Formation, **Journal of Applied Nonlinear Dynamics (JAND)**, L & H Scientific Publishing, LLC, Vol. 9, No. 3, pp. 361-389, 2020, DOI: 10.5890/JAND.2020.09.003.

- (19) **Lakshmi Narayan Guin**, Esita Das and Muniyagounder Sambath; Pattern formation scenario via Turing instability in interacting reaction-diffusion systems with both refuge and nonlinear harvesting, **Journal of Applied Nonlinear Dynamics (JAND)**, L & H Scientific Publishing, LLC, Vol. 9, No. 1, pp. 1-21, 2020, DOI: 10.5890/JAND.2020.03.001.
- (20) **Lakshmi Narayan Guin**; The effects of unequal diffusion coefficients on spatiotemporal pattern formation in prey harvested reaction-diffusion systems, 2020, **International Conference on Mathematical Analysis and Application in Modelling (ICMAAM 2018)**, Springer Proceedings, pp. 279-292, ISBN: 9789811504211, DOI: 10.1007/978-981-15-0422-8_24.
- (21) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Studies on Atherosclerotic Plaque Formation: A Mathematical Approach, 2020, **International Conference on Mathematical Analysis and Application in Modelling (ICMAAM 2018)**, Springer Proceedings, pp. 307-318, ISBN: 9789811504211, DOI: 10.1007/978-981-15-0422-8_26.
- (22) Renji Han, **Lakshmi Narayan Guin** and Binxiang Dai; Cross-diffusion-driven pattern formation and selection in a modified Leslie-Gower predator-prey model with fear effect, **Journal of Biological Systems (JBS)**, World Scientific, Vol. 28, No. 1, pp. 1-38, 2020, <https://doi.org/10.1142/S0218339020500023>.
- (23) **Lakshmi Narayan Guin**, Reeta Murmu, Hunki Baek and Kyoung-Hwan Kim; Dynamical analysis of a Beddington-DeAngelis interacting species system with harvesting, **Mathematical Problems in Engineering (MPE)**, Hindawi, Vol. 2020, Article ID 7596394, 22 pages, 2020, <https://doi.org/10.1155/2020/7596394>.
- (24) **Lakshmi Narayan Guin**, Sudipta Pal, Santabrata Chakravarty and Salih Djilali; Pattern dynamics of a reaction-diffusion predator-prey system with both refuge and harvesting, **International Journal of Biomathematics (IJB)**, World Scientific, Vol. 14, No. 1, pp. 2050084 (29 pages), 2021, ISSN 1793-5245 (print) & 1793-7159 (online), DOI: 10.1142/S1793524520500849.
- (25) Krishnendu Sarkar, Nijamuddin Ali and **Lakshmi Narayan Guin**; Dynamical complexity in a tritrophic food chain model with prey harvesting, **Discontinuity, Nonlinearity, and Complexity (DNC)**, L & H Scientific Publishing, LLC, Vol. 10, No. 4, pp. 705-722, 2021, ISSN 2164-6376 (print) & 2164-6414 (online), DOI: 10.5890/DNC.2021.12.010.
- (26) **Lakshmi Narayan Guin**, Debdeep Roy and Salih Djilali; Dynamic analysis of a three-species food chain system with intra-specific competition, **Journal of Environmental Accounting and Management (JEAM)**, L & H Scientific Publishing, LLC, Vol. 9, No. 2, pp. 127-143, 2021, ISSN 2325-6192 (print) & 2325-6206 (online), DOI:10.5890/JEAM.2021.06.003.
- (27) Krishnendu Sarkar, Nijamuddin Ali and **Lakshmi Narayan Guin**; Fear effect in a tri-trophic food chain model with Holling type IV functional response, **Journal of Environmental Accounting and Management (JEAM)**, L & H Scientific Publishing, LLC, Vol. 9, No. 3, pp. 235-253, 2021, ISSN 2325-6192 (print) & 2325-6206 (online), DOI: 10.5890/JEAM.2021.09.004.
- (28) **Lakshmi Narayan Guin**, Ayantika Mapa and Santabrata Chakravarty; Effect of fear on interacting species dynamics with nonlinear predator harvesting, **Journal of Environmental Accounting and Management (JEAM)**, L & H Scientific Publishing, LLC, Vol. 9, No. 4, pp. 403-427, 2021, ISSN 2325-6192 (print) & 2325-6206 (online), DOI:10.5890/JEAM.2021.12.006.
- (29) Soufiane Bentout, Behzad Ghanbari, Salih Djilali and **Lakshmi Narayan Guin**; Impact of predation in the spread of an infectious disease with time fractional derivative and social behavior, **International Journal of Modeling, Simulation, and Scientific Computing (IJMSSC)**, World Scientific, Vol. 12, No. 04, pp. 2150023, 2021, ISSN 1793-9623 (print) & 1793-9615 (online), DOI: 10.1142/S1793962321500239.

- (30) Renji Han, **Lakshmi Narayan Guin** and Binxiang Dai; Consequences of refuge and diffusion in a spatiotemporal predator-prey model, **Nonlinear Analysis: Real World Applications (NONRWA)**, Elsevier, Vol. 60, pp. 103311, 2021, ISSN: 1468-1218, <https://doi.org/10.1016/j.nonrwa.2021.103311>.
- (31) Salih Djilali, Carlo Cattani and **Lakshmi Narayan Guin**; Delayed Predator-Prey model with prey social behavior, **The European Physical Journal Plus (EPJP)**, Springer, Vol. 136, No. 940, pp. 1-20, 2021, ISSN 2190-5444 (online), <https://doi.org/10.1140/epjp/s13360-021-01940-9>.
- (32) **Lakshmi Narayan Guin**, Salih Djilali and Santabrata Chakravarty; Cross-diffusion-driven instability in an interacting species model with prey refuge, **Chaos, Solitons & Fractals (CSF)**, Elsevier, Vol. 153, No. 1, pp. 111501, 2021, ISSN 0960-0779 (print) & 1873-2887 (online), <https://doi.org/10.1016/j.chaos.2021.111501>.
- (33) Renji Han, **Lakshmi Narayan Guin** and Sattwika Acharya; Complex dynamics in a reaction-cross-diffusion model with refuge depending on predator-prey encounters, **The European Physical Journal Plus (EPJP)**, Springer, Vol. 137, No. 134, pp. 1-27, 2022, ISSN 2190-5444 (online), <https://doi.org/10.1140/epjp/s13360-022-02358-7>.
- (34) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Bifurcation Analysis of a Reaction-Diffusion Mathematical Model of Mild Atherosclerosis, **Discontinuity, Nonlinearity, and Complexity (DNC)**, L & H Scientific Publishing, LLC, Vol. 11, No. 1, pp. 57-72, 2022, ISSN 2164-6376 (print) & 2164-6414 (online), DOI: 10.5890/DNC.2022.03.005.
- (35) **Lakshmi Narayan Guin**, Sarmistha Pal and Muniyagounder Sambath; On the dynamics of a harvested tri-trophic food chain model with alternative food source, **Journal of Applied Nonlinear Dynamics (JAND)**, L & H Scientific Publishing, LLC, Vol. 11, No. 4, pp. 847-863, 2022, ISSN 2164-6457 (print) & 2164-6473 (online), DOI: 10.5890/JAND.2022.12.006.
- (36) **Lakshmi Narayan Guin**, Samiran Ghosh and Santabrata Chakravarty; Mathematical modelling of intraguild predation and its dynamics of resource harvesting, **International Journal of Nonlinear Analysis and Applications (IJNAA)**, A publication of Semnan University, Vol. 13, No. 2, pp. 837-861, 2022, ISSN 2008-6822 (online), <http://dx.doi.org/10.22075/ijnaa.2022.26067.3215>.
- (37) Renji Han, Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Dynamical response of a reaction-diffusion predator-prey system with cooperative hunting and prey refuge, **Journal of Statistical Mechanics: Theory and Experiment (JSTAT)** / Online ISSN: 1742-5468; International School for Advanced Studies (SISSA) and IOP Publishing (IOP), Vol. 2022, No. 10, pp. 103502, 2022, doi: 10.1088/1742-5468/ac946d.
- (38) **Lakshmi Narayan Guin**, Gourav Mandal, Madhumita Mondal and Santabrata Chakravarty; A chaotic tri-trophic food chain model supplemented by Allee effect, **International Journal of Dynamics and Control (IJDY)**, Springer, Vol. 11, pp. 528-554, 2023, ISSN 2195-2698 (online) & 2195-268X (print), doi: <https://doi.org/10.1007/s40435-022-01017-0>.
- (39) Gourav Mandal, Nijamuddin Ali, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Impact of fear on a tri-trophic food chain model with supplementary food source, **International Journal of Dynamics and Control (IJDY)**, Springer, Vol. 11, pp. 2127-2160, 2023, ISSN 2195-2698 (online) & 2195-268X (print), <https://doi.org/10.1007/s40435-022-01104-2>.
- (40) **Lakshmi Narayan Guin**, Sriparna Nandi and Santabrata Chakravarty; Effect of prey refuge in a three species food chain model with Beddington-DeAngelis functional response, **Journal of Environmental Accounting and Management (JEAM)**, L & H Scientific Publishing, LLC, Vol. 11, No. 2, pp. 139-160, 2023, ISSN 2325-6192 (print) & 2325-6206 (online), DOI: 10.5890/JEAM.2023.06.002.

- (41) **Lakshmi Narayan Guin**, Deepabali Datta and Santabrata Chakravarty; Dynamic response of Allee effect and refuge on the interacting species model system, **Journal of Environmental Accounting and Management (JEAM)**, L & H Scientific Publishing, LLC, Vol. 11, No. 2, pp. 193-224, 2023, ISSN 2325-6192 (print) & 2325-6206 (online), DOI: 10.5890/JEAM.2023.06.006.
- (42) **Lakshmi Narayan Guin**, Pallav Jyoti Pal, Jawaher Alzahrani, Nijamuddin Ali, Krishnendu Sarkar, Salih Djilali, Anwar Zeb, Ilyas Khan and Sayed M Eldin; Influence of Allee effect on the spatiotemporal behavior of a diffusive predator-prey model with Crowley-Martin type response function, **Scientific Reports (Sci Rep)**, **Nature Portfolio**, Vol. 13, Article No. 4710, pp. 1-19, 2023 ISSN 2045-2322, doi:10.1038/s41598-023-28419-0.
- (43) **Lakshmi Narayan Guin**, Gourav Mandal, Mrinmay Pakhira and Santabrata Chakravarty; Chaotic response of a Monod-Haldane food-web model system, **International Journal of Dynamics and Control (IJDY)**, **Springer**, Vol. 11, pp. 2644-2679, 2023, ISSN 2195-2698 (online) & 2195-268X (print), <https://doi.org/10.1007/s40435-023-01179-5>.
- (44) Gourav Mandal, Sukanya Das, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Dynamic response of a system of interactive species influenced by fear and Allee consequences, **The European Physical Journal Plus (EPJP)**, **Springer**, Vol. 138, No. 7, pp. 1-36, Article Number 661, 2023, ISSN 2190-5444 (online), doi:10.1140/epjp/s13360-023-04246-0.
- (45) **Lakshmi Narayan Guin**, Sukanya Das, Gourav Mandal, Swagata Dutta and Santabrata Chakravarty; Isolating patterns in a reaction-diffusion system with Smith population growth, **The European Physical Journal Plus (EPJP)**, **Springer**, Vol. 138, No. 9, Article Number 829, 2023, ISSN 2190-5444 (online), doi: 10.1140/epjp/s13360-023-04466-4.
- (46) Yuhong Huo, Gourav Mandal, **Lakshmi Narayan Guin**, Santabrata Chakravarty and Renji Han; Allee effect-driven complexity in a spatiotemporal predator-prey system with fear factor, **Mathematical Biosciences and Engineering (MBE)**, **AIMS Press**, Vol. 20, No. 10, pp. 18820–18860, 2023, ISSN 1551-0018, doi: 10.3934/mbe.2023834.
- (47) Gourav Mandal, Swagata Dutta, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Spatiotemporal behaviour of a generalist predator-prey system with harvesting phenomena, **Mathematical Methods in the Applied Sciences (MMAS)**, **John Wiley & Sons Ltd.**, Vol. 47, pp. 2827–2867, 2023, ISSN 0170-4214, DOI: 10.1002/mma.9780.
- (48) **Lakshmi Narayan Guin**, Gourav Mandal, Pallab Pal and Santabrata Chakravarty; Response of prey-predator-scavenger interactions with the inclusion of prey harvesting, **Journal of Applied Nonlinear Dynamics (JAND)**, L & H Scientific Publishing, LLC, Vol. 13, No. 2, pp. 279-306, 2024, ISSN 2164-6457 (print) & 2164-6473 (online), doi: 10.5890/JAND.2024.06.008.
- (49) Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Dynamical inquest of refuge and bubbling issues in an interacting species system, **Communications in Nonlinear Science and Numerical Simulation (CNSNS)**, **Elsevier**, Vol. 129, pp. 107700, 2024, ISSN 1007-5704, doi: 10.1016/j.cnsns.2023.107700.
- (50) Gourav Mandal, **Lakshmi Narayan Guin**, Santabrata Chakravarty, Salih Djilali and Anwar Zeb; Depensation of supplementary food in a system of interacting species with refuge, **The European Physical Journal Plus (EPJP)**, **Springer**, Vol. 139, No. 19, pp. 1-24, 2024, ISSN 2190-5444 (online), <https://doi.org/10.1140/epjp/s13360-023-04793-6>.
- (51) Pallav Jyoti Pal, Gourav Mandal, **Lakshmi Narayan Guin** and Tapan Saha; Allee effect and hunting-induced bifurcation inquisition and pattern formation in a modified Leslie-Gower interacting

species system, **Chaos, Solitons & Fractals (CSF)**, Elsevier, Vol. 182, pp. 114784, 2024, ISSN 0960-0779 (print) & 1873-2887 (online), doi: 10.1016/j.chaos.2024.114784.

(52) Gourav Mandal, **Lakshmi Narayan Guin**, Santabrata Chakravarty, Alejandro Rojas-Palma and Eduardo Gonzalez-Olivares; Allee-induced bubbling phenomena in an interacting species model, **Chaos, Solitons & Fractals (CSF)**, Elsevier, Vol. 184, pp. 114949, 2024, ISSN 0960-0779 (print) & 1873-2887 (online), doi.org/10.1016/j.chaos.2024.114949.

(53) Swagata Dutta, Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Identifying Numerical Bifurcation Structures of Codimension 1 and 2 in Interacting Species System, **Mathematical Methods in the Applied Sciences (MMAS)**, John Wiley & Sons Ltd., Vol. 47, pp. 14639-14665, 2024, ISSN 0170-4214, <https://doi.org/10.1002/mma.10295>.

(54) Sukanya Das, Gourav Mandal, Swagata Dutta, **Lakshmi Narayan Guin** and Koyel Chakravarty; Analysis and Regulation of Chaos Dynamics in a Cancer Model through Chemotherapeutic Intervention and Immune System Augmentation, **International Journal of Dynamics and Control (IJDY)**, Springer, Vol. 12, pp. 3884-3907, 2024, ISSN 2195-2698 (online) & 2195-268X (print), <https://doi.org/10.1007/s40435-024-01474-9>.

(55) Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Complex Patterns in a Reaction-Diffusion System with Fear and Anti-Predator Responses, **International Journal of Bifurcation and Chaos (IJBC)**, World Scientific, Vol. 34, No. 12, pp. 2450154 (37 pages), 2024, ISSN: 0218-1274 (print); 1793-6551 (web), DOI: 10.1142/S0218127424501542.

(56) Gourav Mandal, Sukanya Das, Swagata Dutta, **Lakshmi Narayan Guin** and Santabrata Chakravarty; A Comparative Study of Allee Effects and Fear-Induced Responses: Exploring Hyperbolic and Ratio-Dependent Models, **International Journal of Applied and Computational Mathematics (IJACM)**, Springer, Vol. 10, Article No. 147, 2024, ISSN 2199-5796 (online), 2349-5103 (print), <https://doi.org/10.1007/s40819-024-01773-x>.

(57) Gourav Mandal, **Lakshmi Narayan Guin**, Santabrata Chakravarty and Renji Han; Dynamic Complexities in a Predator-Prey Model with Prey Refuge Influenced by Double Allee Effects, **Mathematics and Computers in Simulation (MATCOM)**, Elsevier, Vol. 227, pp. 527-552, 2025, ISSN 03784754, <https://doi.org/10.1016/j.matcom.2024.08.015>.

(58) Koyel Chakravarty, Sukanya Das and **Lakshmi Narayan Guin**; Sensitivity analysis of the diabetic population model with lifestyle transmission, **Journal of Applied Nonlinear Dynamics (JAND)**, L & H Scientific Publishing, LLC, Vol. 14, No. 2, pp. 355-370, 2025, ISSN 2164-6457 (print) & 2164-6473 (online), DOI:10.5890/JAND.2025.06.009.

(59) Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Cross-Diffusion-Induced Instabilities in a Cooperative Hunting Population with Allee Effect, **The European Physical Journal Plus (EPJP)**, Springer, Vol. 140, No. 96, 2025, ISSN 2190-5444 (online), <https://doi.org/10.1140/epjp/s13360-025-06017-5>.

(60) Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Modelling cross-diffusion with Beverton-Holt-like additional food dynamics, **Physica Scripta (Phys Scr)**, IOP Publishing, Vol. 100, No. 03, 035240, 2025, ISSN 1402-4896 (print); 1402-4896 (web), <https://doi.org/10.1088/1402-4896/adb654>.

(61) Sukanya Das, Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Diverse Bifurcation Structures and Multi-Stability in Interacting Species Dynamics, **International Journal of**

Biomathematics (IJB), World Scientific, 2550022 (35 pages), 2025, ISSN 1793-5245 (print); ISSN 1793-7159 (online), <https://doi.org/10.1142/S1793524525500226>.

(62) Gourav Mandal, Alejandro Rojas-Palma and Eduardo Gonzalez-Olivares, Santabrata Chakravarty, **Lakshmi Narayan Guin**; Allee-induced periodicity and bifurcations in a Gause-type model with interference phenomena, **European Physical Journal B (EPJB), Springer**, Vol. 98, No. 63, 2025, ISSN 1434-6028 (print); 1434-6036 (online), <https://doi.org/10.1140/epjb/s10051-025-00911-8>.

(63) Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Spatiotemporal complexity in interacting wild and sterile mosquito populations, **Nonlinear Dynamics (NODY), Springer**, Vol. 113, No. 21, pp. 30187-30210, 2025, ISSN 0924-090X (print); ISSN 1573-269X (online), <https://doi.org/10.1007/s11071-025-11615-0>.

(64) Gourav Mandal, **Lakshmi Narayan Guin**, Santabrata Chakravarty and Renji Han; Resilience in a Modified Leslie-Gower Model with Dual Allee Effects and Cooperative Hunting, **Mathematical Biosciences (MBS), Elsevier**, Vol. 390, pp. 109563, 2025, ISSN 0025-5564 (print); ISSN 1879-3134 (online), <https://doi.org/10.1016/j.mbs.2025.109563>.

(65) Swagata Dutta, Gourav Mandal, Sukanya Das, Susmita Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Bubbling phenomena in a tri-trophic food chain model amidst odour disruption, **ZAMM-Journal of Applied Mathematics and Mechanics, John Wiley & Sons Ltd.**, 2025, ISSN 0044-2267 (print) and 1521-4001 (online), <https://doi.org/10.1002/zamm.70297>.

(66) Deepabali Datta, Gourav Mandal, Sukanya Das, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Fear-induced carry-over effects in population dynamics with supplementary food, Accepted manuscript in **Journal of Environmental Accounting and Management (JEAM), L & H Scientific Publishing, LLC**, Vol. xx, No. x, pp. xxx-xxx, 24.11.2025, ISSN 2325-6192 (print) & 2325-6206 (online).

(67) Deepabali Datta, Sukanya Das, Gourav Mandal, Suprava Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Modelling the Influence of Additional Food in a Tri-Trophic Food Chain, **Modeling Earth Systems and Environment (MESE), Springer**, Vol. 12, No. 91, 2026, ISSN 2363-6203 (print) & 2363-6211 (online), <https://doi.org/10.1007/s40808-026-02720-z>.

(68) Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Spatiotemporal resilience in a three-species food web model with Allee effect, **International Journal of Biomathematics (IJB), World Scientific**, Vol. xx, pp. xx-xx, 2026, ISSN 1793-5245 (print); ISSN 1793-7159 (online), <https://doi.org/xxxx>.

(69) Swagata Dutta, Gourav Mandal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Ecological pattern formation in a reaction-diffusion system with hydra and bubbling phenomena, **International Journal of Modelling and Simulation (IJMS), Taylor & Francis**, Vol. xx, pp. xx-xx, 2026, ISSN 0228-6203 (print) & 1925-7082 (online), <https://doi.org/xxxx>.

CONFERENCE / SEMINAR PARTICIPATION

- (1) Participated in the UGC Sponsored Seminar on Human Rights, August 13-14, 2007, organized by Durgapur Government College, Durgapur-713214, West Bengal, India.
- (2) Participated in the Two-day National level Seminar on Development in Mathematics Education: Special Emphasis on Foundations of Geometry and Software-based Mathematics, February 09-10, 2008, organized by The Centre for Mathematics Education (with the help of the Department of Mathematics), Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.
- (3) Participated in the National Seminar on Generalizations and Approximations in Mathematics, March 28-29, 2008 organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.
- (4) Participated in the Second UGC Sponsored National Conference on Uncertainty: A Mathematical Approach (UAMA-2008), September 23-24, 2008, organized by Department of Mathematics, Maharajadhiraj Uday Chand Women's College, Burdwan, West Bengal, India.
- (5) Participated in the National Seminar on Advances in Nonlinear Systems (ANLS-2009), February 21-23, 2009, organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.
- (6) Participated in the Third National Conference on Uncertainty: A Mathematical Approach (UAMA-2009), February 27, 2009, organized by Department of Mathematics, Maharajadhiraj Uday Chand Women's College, Burdwan and Sponsored by Department of Science & Technology (DST), West Bengal, India.
- (7) Participated in the National Seminar on Mathematics Phobia: its genesis and remedies (MPGR 2010), February 13-15, 2010 organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.
- (8) Participated in one day district level seminar on "Socio-economy and cultural heritage of Birbhum" on 02.05.2010, organized by Burdwan University Golden Jubilee Celebration Committee, Suri Vidyasagar College, West Bengal, India.
- (9) Participated in the National seminar on Mathematics & Applications (NSMA-2011), February 24-25, 2011, organized by Department of Mathematics, The University of Burdwan, Burdwan-713104, West Bengal, India and presented a paper entitled "The spatial patterns through diffusion-driven instability in a predator-prey model".
- (10) Participated in the National seminar on "Science and Nature: Tagore's Vision and its Relevance" organized by Siksha-Bhavana, Visva-Bharati during 12-13 March, 2011, Santiniketan-731235, West Bengal, India.
- (11) Participated in the National Seminar on Analysis of Nonlinear Systems (ANS-2011), March 26-27, 2011, organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.
- (12) Participated in the 13th Refresher Course in Mathematical Sciences (Period: 30.11.2011-20.12.2011), UGC Academic Staff College, The University of Burdwan, Burdwan-713104, West Bengal, India.

(13) Participated in the National Seminar and presented a paper entitled “Spatiotemporal dynamics of a ratio-dependent predator-prey model” on Mathematics and Applications (NSMA-2012, Period: March 28-29, 2012), organized by Department of Mathematics, The University of Burdwan, Burdwan-713104, West Bengal, India.

(14) Participated acted as a committee member in the National Seminar on Non-linear aspects of analysis and Algebra (NAAA-2012) March 24-25, 2012 organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(15) Participated in the National Seminar and presented a paper entitled “Spatial pattern in a diffusive predator-prey model with sigmoid ratio-dependent functional response” on Advances in Mathematics and Applications (AMA-2013) March 6-7, 2013, organized by Department of Mathematics, The University of Burdwan, Burdwan-713104, West Bengal, India.

(16) Participated and acted as a Treasurer in the National Seminar on Mathematics for Nonlinear Systems, March 17-18, 2013 organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(17) Participated and Completed the UGC supported 89th Orientation Programme held at UGC Academic Staff College, The University of Burdwan University during 06 February, 2013 to 05 March, 2013.

(18) Participated and acted as a committee member in the two-day National Seminar on “Mathematics and its Applications” held on the occasion of Golden Jubilee Celebration during 30-31 March, 2013.

(19) Participated in the 3rd International Conference on Frontiers of Mathematics & Applications (ICFMA-2014) and presented a paper entitled “Existence of spatial patterns in reaction-diffusion systems incorporating a prey refuge” on January 29-31, 2014), organized by Department of Mathematics, The University of Burdwan, Burdwan-713104, West Bengal, India.

(20) Organized a National Workshop as Convener entitled “Mathematics Teaching under Semester System at Undergraduate Level: Perspectives & Strategies” on March 1-2, 2014 organized by Centre for Mathematics Education, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(21) Participated and acted as a Treasurer in the National Workshop on “Mathematics Teaching under Semester System at Undergraduate Level: Perspectives & Strategies” during March 1-2, 2014 organized by Centre for Mathematics Education, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(22) Participated in the National Seminar on Mathematics and its Applications (NSMA 2014) and presented a paper entitled “Spatial patterns through Turing instability in a reaction-diffusion predator-prey model” on March 4-5, 2014), organized by Department of Mathematics, University of Kalyani, Nadia, West Bengal, India.

(23) Participated in the Workshop and Symposium on Applied Nonlinear Dynamics and Chaos (ANDC-2014) and presented a paper entitled “Impact of prey refuge on spatial pattern formation in a reaction-diffusion predator-prey model” on 30th May, 2014, jointly organized

by Government College of Engineering & Textile Technology, Berhampore, Murshidabad, West Bengal, India and Dumkal institute of Engineering & Technology, Basantapur, Murshidabad, West Bengal, India.

(24) Participated in the 2nd Refresher Course in Mathematical Modeling & its Application in Science (Period: 09.09.2014-29.09.2014), UGC Academic Staff College, The University of Burdwan, Burdwan-713104, West Bengal, India.

(25) Participated in the International Conference on Revisiting Ancient Mathematics & Mathematical Sciences (ICRAMMS-2015) and presented a paper entitled “Spatiotemporal dynamics of a predator-prey interaction incorporating prey refuge” on February 18-20, 2015), organized by Department of Mathematics, The University of Burdwan, Burdwan-713104, West Bengal, India.

(26) Participated in the 1st International Conference on Mathematics and Its Applications (ICMA 2015) and presented a paper entitled “Spatiotemporal patterns in a reaction-diffusion predator-prey model” on December 23, 2015, organized by Mathematics Discipline, Science Engineering and Technology School, Khulna University, Khulna-9208, Bangladesh.

(27) Participated in the National Seminar on Recent Developments in Mathematics and its Applications (NSRDMA-2016) and presented a paper entitled “On the role of prey refuge in a diffusive Beddington-DeAngelis predator-prey model” on January 21-22, 2016), organized by Department of Mathematics, University of Kalyani, Nadia, West Bengal, India.

(28) Participated in the International Conference on Recent Trends in Mathematical Sciences and Applications (ICRTMSA-2016) and presented a paper entitled “Stationary patterns of a Turing reaction-diffusion predator-prey model” on February 09-11, 2016), organized by Department of Mathematics, The University of Burdwan, Burdwan-713104, West Bengal, India.

(29) Participated and Chaired a session in the National Conference on Computational Mathematics and Nonlinear Dynamics (CMND-2016), February 19-21, 2016 organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(30) Acted as a Coordinator in Mathematics, Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India for the Remedial Coaching for Undergraduate students (Semester – II, IV, VI) belonging to SC/ST/OBC (Non-Creamy Layer), Minority and General Candidates (if vacancy available), 2016 (Ref. No.: VB/SCT/Remedial Dated 29.02.2016).

(31) Participated in the International Conference on Mathematical Analysis and Applications in Modeling (ICMAAM 2018) and presented a paper entitled “The effects of unequal diffusion coefficients on spatiotemporal pattern formation in reaction-diffusion predator-prey models” on January 09-12, 2018), organized by Department of Mathematics, Jadavpur University in association with Indian Statistical Institute, Kolkata & Biomathematical Society of India.

(32) Participated in the International Conference on Mathematics and its Applications (ICMA-2018) and presented a paper entitled “Spatiotemporal patterns in a predator-prey

model with cross-diffusion” on February 15-17, 2018), organized by Department of Mathematics, The University of Burdwan, Burdwan-713104, West Bengal, India.

(33) Participated in the National Seminar on VISVA-BHARATI MEET ON ALGEBRA AND ITS APPLICATIONS - 2018, March 24-25, 2018, organized by Department of Mathematics, Siksha Bhavana, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(34) Participated in the Short Term Course / Workshop on CBCS (Period: 29.01.2019-04.02.2019), UGC Academic Staff College, The University of Burdwan, Burdwan-713104, West Bengal, India.

(35) Participated in the Short Term Course on Health and Stress: Problem and Remedies (Period: 18.02.2020-24.02.2020), UGC Academic Staff College, The University of Burdwan, Burdwan-713104, West Bengal, India.

(36) Participated in the National level webinar on Explosive Tritrophic Food Chain models with Interference: A comparative study, July 6, 2020, organized by Department of Mathematics, ICFAI UNIVERSITY TRIPURA, Kamalghat, Mohanpur, Agartala-799210, Tripura, India.

(37) Participated in the National level webinar on recent advancement of Mathematics, August 10, 2020, organized by Department of Mathematics with Internal Quality Assurance Cell, Vivekananda Mahavidyalaya, Purba Bardhaman, Sripally-713103, West Bengal, India.

(38) Participated in One day subcontinent level webinar on recent advances of Applied Mathematics, August 31, 2020, organized by Department of Mathematics, Vivekananda Mahavidyalaya, Purba Bardhaman, Sripally-713103, West Bengal, India.

(39) Participated in a Two day International Workshop on Geometry of Continued Fractions: Ramanujan and his successors, September 14-15, 2020, organized by Srinivasa Ramanujan Department of Mathematics and Centre for Vedic Mathematical Studies, Central University of Himachal Pradesh, Dharamshala, Kangra-176215, Himachal Pradesh, India.

(40) Participated in the National level webinar on Distributed Algorithm for Optimal Dispersion on Ring in Presence of Byzantine Faults, October 7, 2020, organized by Department of Mathematics, ICFAI UNIVERSITY TRIPURA, Kamalghat, Mohanpur, Agartala-799210, Tripura, India.

(41) Participated in One-week Online Faculty Development Programme on Recent trends in PDEs: Theory & Computations, November 2-6, 2020, organized by Department of Mathematics, School of Sciences, NATIONAL INSTITUTE OF TECHNOLOGY ANDHRA PRADESH (An autonomous Institute under the aegis of Ministry of Education, GoI) Tadepalligudem, West Godavari (Dt.), Andhra Pradesh - 534101, India.

(42) Participated in a Two day International E-Conference on Recent Advances in Biomathematics (Theme: Biomathematics to Combat the Threats of Mysterious Pathogen), December 18-19, 2020, organized by Bangladesh Society for Mathematical Biology (BSMB), Bangladesh.

(43) Participated in five days Online Faculty Development Programme on Mathematical Biology and Biostatistics, July 26-30, 2021, organized by Amity Institute of Applied Sciences (Department of Mathematics and Department of Statistics), Amity University Kolkata, India.

(44) Participated and chaired a session in the online National Conference on "Recent Trends in Mathematical Modelling and its Applications (NCRTMMA-2021)", August 23-27, 2021 organized by Department of Mathematics, ICFAI University, Tripura.

(45) Participated and delivered a lecture as a resource person (**Topic: Foundation of Mathematical Modelling in Ecology**) in the online National Conference on "Recent Trends in Mathematical Modelling and its Applications (NCRTMMA-2021)", August 23-27, 2021 organized by Department of Mathematics, ICFAI University, Tripura.

(46) Participated in a Four-day online Lecture Series on Nonlinear Dynamics and Applications, sponsored by SERB, February 13-16, 2023, organized by the Department of Mathematics, Indian Institute of Technology (IIT) Indore, India.

(47) Participated in the International Seminar on Mathematical Modeling and Turing's Pattern Formation, September 11-15, 2023, organized by the Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology (VIT), Vellore, India.

(48) Participated in the DST-SERB & CSIR sponsored International Conference on MATHEMATICAL MODELLING, SIMULATION AND NONLINEAR DYNAMICS-2024 (ICMMSND-2024) and presented a paper entitled "**Dynamical complexity in a modified Leslie-Gower interacting species system with both Allee and hunting phenomena**" on February 15-16, 2024), organized by Department of Mathematics, Bharathiar University, Coimbatore-46, Tamil Nadu, India.

(49) Participated in One-day Workshop on Artificial Intelligence and High Performance Computing with Applications in Health Care, February 22, 2025, Jointly Organized by NSM Nodal Centre for Training in AI and HPC, IIT Kharagpur and Department of Computer and System Sciences, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(50) Participated in the DST-SERB & CSIR sponsored International Conference on MATHEMATICAL MODELLING, SIMULATION AND NONLINEAR DYNAMICS-2024 (ICMMSND-2024) and presented a paper entitled "**Dynamical complexity in a modified Leslie-Gower interacting species system with both Allee and hunting phenomena**" on February 15-16, 2024), organized by Department of Mathematics, Bharathiar University, Coimbatore-46, Tamil Nadu, India.

(51) Participated in One-day Workshop on Artificial Intelligence and High Performance Computing with Applications in Health Care, February 22, 2025, Jointly Organized by NSM Nodal Centre for Training in AI and HPC, IIT Kharagpur and Department of Computer and System Sciences, Visva-Bharati, Santiniketan-731235, West Bengal, India.

(52) Completed Rashtriya Karmayogi Large Scale Jan Seva Program "**Karmayogi**" provided by the Capacity Building Commission with Knowledge Partner-Illuminate Knowledge Resources, Department of Personnel & Training, Government of India on 10th September 2025.

(53) Participated in Faculty Development Programme on **Unified Approaches to Solving Differential Equations: From Classical Methods to Neural Networks (UniSDE-2025)**, December 08-19, 2025, jointly organized by Department of Mathematics & Scientific Computing, National Institute of Technology Hamirpur, India and Electronics and ICT Academy IIITDM Jabalpur, An Initiative of the Ministry of Electronics and Information Technology, Government of India.

REVIEWER OF REPUTED INTERNATIONAL JOURNALS

- (1) Mathematical Reviews, **American Mathematical Society (AMS)**, USA.
- (2) Mathematical Biosciences and Engineering (MBE), **AIMS Press**.
- (3) AIMS Mathematics, **AIMS Press**.
- (4) Royal Society Open Science, **Royal Society**.
- (5) Scientific Reports, **Nature Portfolio**.
- (6) Ecological Complexity, **Elsevier**.
- (7) Ecological Modelling (ECOMOD), **Elsevier**.
- (8) Physica A, **Elsevier**.
- (9) Physica D: Nonlinear Phenomena, **Elsevier**.
- (10) Applied Mathematics and Computation (AMC), **Elsevier**.
- (11) Communications in Nonlinear Science and Numerical Simulation (CNSNS), **Elsevier**.
- (12) Applied Mathematical Modelling (AMM), **Elsevier**.
- (13) Computers & Mathematics with Applications (CAMWA), **Elsevier**.
- (14) Journal of Theoretical Biology (JTB), **Elsevier**.
- (15) Proceedings of the National Symposium on Applied Nonlinear Dynamics and Chaos (ANDC 2014), **Elsevier**.
- (16) Mathematics and Computers in Simulation (MATCOM), **Elsevier**.
- (17) Chaos, Solitons & Fractals (CSF), **Elsevier**.
- (18) Engineering Applications of Artificial Intelligence (EAAI), **Elsevier**.
- (19) Ecological Complexity, **Elsevier**.
- (20) Ain Shams Engineering Journal, **Elsevier**
- (21) International Journal of Dynamics and Control (IJDY), **Springer**.
- (22) Nonlinear Dynamics (NODY), **Springer**.
- (23) Advances in Difference Equations (AIDE), **Springer**.
- (24) Journal of Applied Mathematics and Computing (JAMC), **Springer**.
- (25) Modeling Earth Systems and Environment (MESE), **Springer**.
- (26) The European Physical Journal Plus (EPJP), **Springer**.
- (27) Qualitative Theory of Dynamical Systems, **Springer**.
- (28) Iranian Journal of Science, **Springer**.
- (29) Acta Biotheoretica, **Springer**.

- (30) Computational and Applied Mathematics (COAM), **Springer**.
- (31) Journal of Nonlinear Mathematical Physics, **Springer**.
- (32) Iranian Journal of Science and Technology, Transactions of Electrical Engineering, **Springer**.
- (33) International Journal of Biomathematics (IJB), **World Scientific**.
- (34) International Journal of Modeling, Simulation, and Scientific Computing (IJMSSC), **World Scientific**.
- (35) International Journal of Bifurcation and Chaos (IJBC), **World Scientific**.
- (36) Modern Physics Letters B, **World Scientific**.
- (37) Mathematical Methods in the Applied Sciences (MMA), **John Wiley & Sons**.
- (38) International Journal of Computer Mathematics (IJCM), **Taylor & Francis**.
- (39) Journal of Interdisciplinary Mathematics, TARU Publications Co-published with **Taylor & Francis**.
- (40) Journal of Taibah University for Science (JTUSC), **Taylor & Francis Group**.
- (41) Journal of Biological Dynamics, **Taylor & Francis Group**.
- (42) IETE Journal of Research, **Taylor & Francis Journals**.
- (43) Nonlinear Analysis: Modelling and Control, **LANA**.
- (44) Journal of Applied Nonlinear Dynamics (**JAND**), **L & H Scientific Publishing, LLC**.
- (45) Discontinuity, Nonlinearity, and Complexity (**DNC**), **L & H Scientific Publishing, LLC**.
- (46) International Journal of Nonlinear Sciences and Numerical Simulation (**IJNSNS**), **De Gruyter**.
- (47) Zeitschrift für Naturforschung A - A Journal of Physical Sciences, **De Gruyter**.
- (48) Computational and Mathematical Methods in Medicine, **Hindwai**.
- (49) Journal of Applied Mathematics, **Hindwai**.
- (50) Complexity, **Hindwai**.
- (51) International Journal of Differential Equations, **Hindwai**.
- (52) Communications in Mathematical Biology and Neuroscience (**CMBN**), **Thomson Reuters**.
- (53) International Journal of Dynamical Systems and Differential Equations (**IJDSDE**), **Inderscience Publishers**.
- (54) Journal of Applied Analysis and Computation (**JAAC**), **Shanghai Normal University and Wilmington Scientific Publisher**.
- (55) British Journal of Mathematics & Computer Science (**JAMCS**), **Science Domain International**.
- (56) Dynamics of Continuous, Discrete and Impulsive Systems (**DCDIS**), **Watam Press, Canada**.
- (57) Journal of Taibah University for Science (JTUSC), **Taibah University Press**.
- (58) PNAS NEXUS, **Oxford University Press, Oxford, England**.

(59) PLOS ONE, **Public Library of Science, San Francisco, California.**

(60) Journal of Integrative Environmental Sciences (JIES), **Taylor & Francis.**

(61) Modelling and Simulation in Engineering (MSE), **Wiley.**

MEMBERSHIP OF LEARNED SOCIETIES

The Indian Science Congress Association, 14, Dr. Biresh Guha Street, Kolkata-700017 (Life Member from June, 2018).

NATIONAL SERVICE SCHEME (NSS), OR NCC OR ANY OTHER SIMILAR ACTIVITY

(1) Assistant NCC Officer (caretaker) at Mankar College (The University of Burdwan), Mankar-Burdwan, West Bengal under 10 Bengal BN NCC, Coy No.-4, Asansol-713304, West Bengal from 20.03.2008 to 10.11.2010.

(2) NSS Programme Officer of Siksha Bhavana, Visva-Bharati, Santiniketan 731235, West Bengal, India from November 2014 to 18.10.2019.

(3) Teacher warden at Sripally Boys' Hostel, Visva-Bharati (01.02.2022 to till date) / Ref. No.: Estab/E-I/AOTW/2021-22, Dated 28.01.2022.

(4) Faculty member of Admission Co-ordination Cell, Visva-Bharati for the academic year 2023-2024 (Ref. No.: Aca/S-16.2/1544/2022-2023, Dated 17.01.2023).

(5) Faculty member of Visva-Bharati Sports Board, Visva-Bharati for the Annual Sports Calendar 2025-2026 (Ref. No.: VBSB / Principal / 42 / 071(v) / 2025-26 Dated 15.07.2025).

M.SC. PROJECT STUDENTS

2015: Indrani Ghosh

2016: Sattwika Acharya, Surya Shekhar Biswas and Mampi Majhi

2017: Sayan Banik and Esita Das

2018: Madhab Barman, Puja Dakua, Nirapada Santra and Abdul Aziz

2019: Samiran Ghosh, Satyajit Kundu, Sk Mosaraf Ahammed, Debdeep Roy and

Reeta Murmu (Integrated Science Education and Research Centre, Siksha Bhavana, Visva-Bharati)

2020: Ayantika Mapa, Sarmistha Pal, Gourav Mandal and Sriparna Nandi

2021: Pallab Pal, Mrinmay Pakhira, Madhumita Mondal and Deepabali Datta

2022: Debabrata Mandal, Sucheta Shaw, Mohima Chowdhury, Indrajit Mandal and Arghya Kamal Ghosh

2023: Susmita Mandal, Puja Mandal, Suprava Mandal, Tanmoy Mondal and Parnika Banerjee

2024: Abhishek Sarkhel, Souvik Pal, Sujit Sarkar

2025: Rahul Bachhar, Jishnudeep Roy, Koyel Saha, Parama Das Modak

2026: Anindita Paul, Poulami Mukherjee, Malini Mukherjee, Shipra Pal, Manash Kumar Mandal

SUMMER INTERNSHIP STUDENTS

(1) 2018: Riya Ghosh (Amity University, Kolkata, Newtown-700135), Reeta Murmu (Integrated Science Education and Research Centre, Siksha Bhavana, Visva-Bharati)

(2) 2019: Nitismita Baishya (Amity University, Kolkata, Newtown-700135), Reeta Murmu (Integrated Science Education and Research Centre, Siksha Bhavana, Visva-Bharati)
(3) 2025: Anish Chandra Mandal and Pubali Patra (Department of Statistics, Siksha Bhavana, Visva-Bharati)

DECLARATION

I hereby declare that all the statements made in this application are true and complete to the best of my knowledge and belief.

Place: Santiniketan

(Lakshmi Narayan Guin)