

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

CONTACT

INFORMATION

Department of Mathematics
Siksha Bhavana, Visva-Bharati
Santiniketan-731235
West Bengal, India.

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DATE OF BIRTH

28.12.1977

DESIGNATION

Assistant Professor of Mathematics

RESEARCH INTERESTS

Mathematical Ecology and Nonlinear Dynamics (**Major Area**)
Dynamical Systems, Population Dynamics, Dynamics of Infectious Diseases,
Differential Equations and its applications in Biology, 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](#)

TEACHING EXPERIENCE

- Joined as an Assistant Professor in the Department of Mathematics, Visva-Bharati, Santiniketan, India on **11th November 2010**.
- Assistant Professor of Mathematics, Mankar College, Mankar-Burdwan, West Bengal, India, affiliated to The University of Burdwan (18.04.2007-10.11.2010).

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 Projects carried out

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	Two years w.e.f. 01.07.2012 (Ref. No.: 41-1435/2012(SR) dated 17.05.2012)	Amount Approved: Rs. 66000.00 (Completed)

- **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 (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 (Thesis Title: Dynamical behaviour of some models of interacting populations; Registration No. VB-2342 of 2016-17, Dated 28.11.2016)
- (4) Gourav Mandal (Registration No. VB-0261 of 2018-19, Dated 27.12.2020)

PUBLICATIONS

- (1) **Lakshmi Narayan Guin**, Mainul Haque and Prashanta Kumar Mandal; The spatial patterns through diffusion-driven instability in a predator-prey model, Applied Mathematical Modelling, Vol. 36, No. 5, pp. 1825-1841, Elsevier, 2012.
- (2) **Lakshmi Narayan Guin** and Prashanta Kumar Mandal; Spatiotemporal dynamics of reaction-diffusion models of interacting populations, Applied Mathematical Modelling, Vol. 38, No. 17-18, pp. 4417-4427, Elsevier, 2014.

- (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*, Vol. 7, No. 5, pp. 1450047 (1-26), World Scientific, 2014.
- (4) **Lakshmi Narayan Guin**; Existence of spatial patterns in a predator-prey model with self- and cross-diffusion, *Applied Mathematics and Computation*, Vol. 226, pp. 320-335, Elsevier, 2014.
- (5) **Lakshmi Narayan Guin** and Prashanta Kumar Mandal; Effect of prey refuge on spatiotemporal dynamics of reaction-diffusion system, *Computers and Mathematics with Applications*, Vol 68, No. 10, pp. 1325-1340, Elsevier, 2014.
- (6) **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.
- (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*, Vol 20, No. 4, pp. 509–527 (ISSN 1392-5113), LANA, 2015.
- (8) **Lakshmi Narayan Guin**; Spatial patterns through Turing instability in a reaction-diffusion predator-prey model, *Mathematics and Computers in Simulation*, Vol 109, pp. 174-185, Elsevier, 2015.
- (9) **Lakshmi Narayan Guin**, Benur Mondal and Santabrata Chakravarty; Existence of spatiotemporal patterns in the reaction-diffusion predator-prey model incorporating prey refuge, *International Journal of Biomathematics*, Vol 9, No. 6, pp. 1650085 (1-25), World Scientific, 2016.
- (10) **Lakshmi Narayan Guin**, Benur 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.
- (11) **Lakshmi Narayan Guin** and Sattwika Acharya; Dynamic behaviour of a reaction-diffusion predator-prey model with both refuge and harvesting, *Nonlinear Dynamics (NODY)*, Vol 88, No. 2, pp. 1501-1533, Springer, 2017 (Digital Object Identifier (DOI): 10.1007/s11071-016-3326-8).
- (12) **Lakshmi Narayan Guin**, Hunki Baek; Comparative study between prey-dependent and ratio-dependent predator-prey models relating to patterning phenomenon, *Mathematics and Computers in Simulation (MATCOM)*, Vol. 146, pp. 100-117, Elsevier, 2018.
- (13) **Lakshmi Narayan Guin**, Benur 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) Nijamuddin Ali, Benur Mondal, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Dynamics of species in a two preys-one predator model system with help, *International Journal of Mathematics and Computation (IJMC)*, Vol 29, No. 1, pp. 106-121, Ceser Publications, 2018.
- (15) 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)*, Vol. 28, No. 2, pp. 1830004 (12 pages), World Scientific, 2018.

- (16) Nijamuddin Ali, Krishnendu Sarkar and **Lakshmi Narayan Guin**; A predator-prey model with Crowley-Martin response for predation, *International Journal of Ecological Economics & Statistics (IJEES)*, Ceser Publications: Indexed by the Thomson Reuters Web of Science, Vol 40, No. 2, pp. 38-48, 2019.
- (17) Nijamuddin Ali, Krishnendu Sarkar and **Lakshmi Narayan Guin**; Ratio-dependent predator-prey model with Qiwu's growth for prey, *International Journal of Ecological Economics & Statistics (IJEES)*, Ceser Publications: Indexed by the Thomson Reuters Web of Science, Vol 40, No. 3, pp. 50-58, 2019.
- (18) 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.
- (19) 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, 16 September, 2019, DOI 10.1007/s40808-019-00643-6.
- (20) 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*, World Scientific, Vol 11, No. 01, 2020, pp. 2050006 (23 pages), DOI: 10.1142/S1793962320500063.
- (21) 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.
- (22) **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, January, 2020, pp. 1-21, DOI: 10.5890/JAND.2020.03.001.
- (23) **Lakshmi Narayan Guin**; The effects of unequal diffusion coefficients on spatiotemporal pattern formation in prey harvested reaction-diffusion systems, March, 2020, *International Conference on Mathematical Analysis and Application in Modelling (ICMAAM 2018)*, pp. 279-292, Springer Proceedings, ISBN: 9789811504211; Chapter DOI.: 10.1007/978-981-15-0422-8_24.
- (24) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Studies on Atherosclerotic Plaque Formation: A Mathematical Approach, March, 2020, *International Conference on Mathematical Analysis and Application in Modelling (ICMAAM 2018)*, pp. 307-318, Springer Proceedings, ISBN: 9789811504211; Chapter DOI.: 10.1007/978-981-15-0422-8_26.
- (25) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Dynamic Response of Evolved Atherosclerotic Plaque Model and its Stability, *International Journal of Ecological Economics & Statistics (IJEES)*, Ceser Publications: Indexed by the Thomson Reuters Web of Science, Vol 41, No. 1, 2020.
- (26) 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)*, Vol. 28, No. 1, pp. 1-38, World Scientific, 2020 (<https://doi.org/10.1142/S0218339020500023>).

- (27) **Lakshmi Narayan Guin**, Sk. Mosaraf Ahammed and Muniyagounder Sambath; Effect of prey refuge in a tri-trophic food chain model with Monod-Haldane type response function, *International Journal of Ecological Economics & Statistics (IJEES)*, Ceser Publications: Indexed by the Thomson Reuters Web of Science, Vol. 41, No. 4, pp. 30-44, 2020.
- (28) Krishnendu Sarkar, Nijamuddin Ali, Benukar Mondal and **Lakshmi Narayan Guin**; Qualitative analysis of an interacting species model with Beddington-DeAngelis functional response, *International Journal of Engineering and Future Technology*, 18(2), 2021; ISSN 2455-6432, Ceser Publications.
- (29) Debasmita Mukherjee, **Lakshmi Narayan Guin** and Santabrata Chakravarty; Bifurcation Analysis of a Reaction-Diffusion Mathematical Model of Mild Atherosclerosis, 2020 (Accepted manuscript in *Discontinuity, Nonlinearity, and Complexity (DNC)*, L & H Scientific Publishing, LLC).
- (30) **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.
- (31) 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.
- (32) **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>); Science Citation Index Expanded with Impact Factor 1.009.
- (33) **Lakshmi Narayan Guin**, Debdeep Roy and Salih Djilali; Dynamic analysis of a three-species food chain system with intra-specific competition, 29th September, 2020 (Accepted manuscript in *Journal of Environmental Accounting and Management (JEAM)*, L & H Scientific Publishing, LLC; Indexed by Scopus and Emerging Sources Citation Indexing (ESCI) in Web of Science).
- (34) 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, 03rd October, 2020 (Accepted manuscript in *International Journal of Modeling, Simulation, and Scientific Computing (IJMSSC)*, World Scientific).
- (35) Renji Han, **Lakshmi Narayan Guin** and Binxiang Dai; Consequences of refuge and diffusion in a spatiotemporal predator-prey model, 11th February 2021 (Accepted manuscript in *Nonlinear Analysis: Real World Applications (NONRWA)*, ISSN: 1468-1218, Elsevier).
- (36) 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 (Indexed by Scopus and Emerging Sources Citation Indexing (ESCI) in Web of Science).
- (37) **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; Indexed by Scopus and Emerging Sources Citation Indexing (ESCI) in Web of Science, Vol. 9, No. 4, pp. 403-427, 2021.

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) Acted as Teacher Escort of the Study Tour 2011-2012 of the Department of Mathematics, Visva-Bharati, to Mumbai, Goa and surrounding areas during 19-26 January, 2012.

(14) 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.

(15) 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.

(16) 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.

(17) Acted as Teacher Escort of the Study Tour 2012-2013 of the Department of Mathematics, Visva-Bharati, to Simla, Kulu, Manali (H.P.) and surrounding areas during January, 2013.

(18) 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.

(19) 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.

(20) 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.

(21) 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.

(22) 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.

- (23) 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.
- (24) 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.
- (25) 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.
- (26) 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.
- (27) 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.
- (28) 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.
- (29) 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.
- (30) 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.
- (32) 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.
- (33) 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 (Sem – 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).

(34) Acted as Editorial Advisory Board member of “International Journal of Research on Social and Natural Sciences (IJRSNS 2017)” (On Line ISSN 2455-5916), by Katwa College Journal, Katwa-713130, Burdwan, West Bengal, India.

(35) 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.

(36) 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.

(37) 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.

(38) 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.

(39) 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.

(40) 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.

(41) 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.

(42) 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.

(43) 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.

(44) 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.

(45) 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.

(46) 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.

REVIEWER OF REPUTED INTERNATIONAL JOURNALS

(1) **Mathematical Reviews**, American Mathematical Society (AMS), USA.

(2) **Ecological Complexity**, Elsevier.

(3) **Physica A**, Elsevier.

(4) **Physica D: Nonlinear Phenomena**, Elsevier.

(5) **Applied Mathematics and Computation (AMC)**, Elsevier.

(6) **Communications in Nonlinear Science and Numerical Simulation (CNSNS)**, Elsevier.

(7) **Applied Mathematical Modelling (AMM)**, Elsevier.

(8) **Computers & Mathematics with Applications (CAMWA)**, Elsevier.

(9) **Journal of Theoretical Biology (JTB)**, Elsevier.

(10) **Proceedings of the National Symposium on Applied Nonlinear Dynamics and Chaos (ANDC 2014)**, Elsevier.

(11) **Mathematics and Computers in Simulation (MATCOM)**, Elsevier.

(12) **Scientific Reports**, Springer Nature.

(13) **International Journal of Dynamics and Control (IJDY)**, Springer.

(14) **Nonlinear Dynamics (NODY)**, Springer.

(15) **Advances in Difference Equations (AIDE)**, Springer.

(16) **Journal of Applied Mathematics and Computing (JAMC)**, Springer.

(17) **Modeling Earth Systems and Environment (MESE)**, Springer.

(18) **International Journal of Biomathematics (IJB)**, World Scientific.

(19) **International Journal of Modeling, Simulation, and Scientific Computing (IJMSSC)**, World Scientific.

(20) **International Journal of Bifurcation and Chaos (IJBC)**, World Scientific.

(21) **Mathematical Methods in the Applied Sciences (MMA)**, John Wiley & Sons.

(22) **International Journal of Computer Mathematics (IJCM)**, Taylor & Francis.

(23) **Nonlinear Analysis: Modelling and Control**, LANA.

(24) **Open Journal of Ecology (OJE)**, Scientific Research Publishing.

(25) **International Journal of Engineering Science and Technology (IJEST)**, African Journals Online (AJOL).

- (26) International Journal of Research on Social and Natural Sciences (**IJRSNS**), On Line ISSN 2455-5916.
- (27) Communications in Mathematical Biology and Neuroscience (**CMBN**), **Thomson Reuters**.
- (28) International Journal of Dynamical Systems and Differential Equations (**IJDSDE**), **Inderscience Publishers**.
- (29) Journal of Applied Analysis and Computation (**JAAC**), **Shanghai Normal University and Wilmington Scientific Publisher**, Indexed in SCIE, MathSciNet and Zentralblatt Math.
- (30) British Journal of Mathematics & Computer Science (**JAMCS**), **Science Domain International**.
- (31) Journal of Applied Nonlinear Dynamics (**JAND**), **L & H Scientific Publishing, LLC**.
- (32) Discontinuity, Nonlinearity, and Complexity (**DNC**), **L & H Scientific Publishing, LLC**.
- (33) Dynamics of Continuous, Discrete and Impulsive Systems (**DCDIS**), **Watam Press, Canada**.
- (34) International Journal of Nonlinear Sciences and Numerical Simulation (**IJNSNS**), **De Gruyter**.
- (35) Zeitschrift für Naturforschung A - A Journal of Physical Sciences, **De Gruyter**.

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

Assistant NCC Officer (care-taker) 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.

Programme Officer in the NSS Unit of Siksha Bhavana, Visva-Bharati, Santiniketan 731235, West Bengal, India (21.11.2014 – 20.11.2017) and it continues up to December, 2019.