Shivaji College Faculty Details

Title	Dr.	First Name	RASHMI	Last Name	AGRAWAL	Photograph
Designation	**Assistant Professor**					
Address	**Department of Mathematics, Shivaji College, University of Delhi, Delhi - 110027**					
Office Phone No.						
Residence						
Email	rashmiagrawal@shivaji.du.ac.in					
Educational Qualifications	**Ph. D**					

Degree	University/Institute	Year
Ph.D.	**IIT (ISM) DHANBAD**	2017
PG	**IIT (ISM) DHANBAD**	2011
UG	**SSLNTMM DHANBAD, VBU HAZARIBAGH**	2009

Career Profile

- **Since Feb 2024**: Assistant Professor, **Shivaji College, University of Delhi**, Delhi
- **July 2019 to March 2023**: Assistant Professor, **IIIT Dharwad**, Karnataka
- **August 2018 to July 2019**: Ad-hoc Faculty, **NIT Andhra Pradesh**
- **May 2017 to July 2018**: Assistant Professor, **SREC (SR University), Warangal**, Telangana

Administrative Assignments

Areas of Interest/Specialisation

Mathematical Ecology, Nonlinear Dynamics

Delay Differential Equations, Stability Analysis

Subjects Taught
Linear Algebra, Calculus, Numerical Analysis, Differential Equations, Business Mathematics, Mathematical Finance, Vedic Mathematics - I, IT Skills and Data Analysis - II
Innovation Project/Research Projects (Major Grants/Research Collaboration)

Publications Profile (*Research Papers/Books*)

- Juan Liu, Ranjit Kumar Upadhyay, **Rashmi Agrawal,** Anwar Zeb, Tareq Saeed, Zahid Ahmad, "**Hopf bifurcation and global stability of a predator-prey model with alternative resource and cannibalism**" Accepted in **Fractals,** 2022 (**SCI** Index, Impact Factor **4.555**).

- D. Jana, R. K. Upadhyay, **R. Agrawal,** Rana D Parshad, Aladeen Basheer, "**Explosive tritrophic food chain models with interference: A comparative study**" Published in **Journal of The Franklin Institute**, 357 (2020) 385-413 (**SCI** Index, Impact Factor **4.246**).

- Zizhen Zhang, Ranjit Kumar Upadhyay, **Rashmi Agrawal,** Jyotiska Datta, "**The Gestation Delay: A Factor Causing Complex Dynamics in Gause-Type Competition Models**" Published in **Complexity,** 2018 (2018) 1589310, (**SCI** index, Impact Factor **2.462**).

- **R. Agrawal,** D. Jana, R. K. Upadhyay, V. Sree Hari Rao, **"Dynamic relationship between mutual interference and gestation delay of a hybrid tritrophic food chain model"** Published in **Australian and New Zealand Industrial and Applied Mathematics Journal (ANZIAM)**, 59 (2018) 370-401 (**SCI** index, Impact Factor **0.581**).

- **Rashmi Agrawal,** Debaldev Jana, Ranjit Kumar Upadhyay, Sree Hari Rao Vadrevu**, "Complex dynamics of sexually reproductive generalist predator and gestation delay in a food chain model: Double Hopf-bifurcation to Chaos"** Published in **Journal of Applied Mathematics and Computing,** 55 (2017) 513 - 547 (**SCI** index, Impact Factor **2.196**).

- R. D. Prasad, S. Bhowmick, E. Quansah, **R. Agrawal,** R. K. Upadhyay, **"Finite time blow-up in a population model with competitive interference and time delay"** Published in **International Journal of Nonlinear Science and Numerical Simulation**, 18 (2017) 435 - 450 (**SCI** index, Impact Factor **2.156**).

- Ranjit Kumar Upadhyay, **Rashmi Agrawal, "Dynamics and responses of a predator-prey system with competitive interference and time delay"** Published in **Nonlinear Dynamics,** 83 (2016) 821-837 (**SCI** index, Impact Factor **5.741**).

- Debaldev Jana, **Rashmi Agrawal,** Ranjit Kumar Upadhyay, **"Ecological dynamics of Age Selective Harvesting of Fish Population: Maximum Sustainable Yield and its Control Strategy"** Published in **Chaos, Solitons & Fractals,** 93 (2016) 111-122 (**SCI** index, Impact Factor **9.922**).

- Debaldev Jana, **Rashmi Agrawal,** Ranjit Kumar Upadhyay, **"Dynamics of generalist predator in a stochastic environment: Effect of delayed growth and prey refuge"** Published in **Applied Mathematics and Computation,** 268 (2015) 1072-1094 (**SCI** index, Impact Factor **4.397**).

- Ranjit Kumar Upadhyay, **Rashmi Agrawal, "Modeling the effect of mutual interference in a delay-induced predator-prey system"** Published in **Journal of Applied Mathematics and Computing,** 49 (2015) 13-39 (**SCI** index, Impact Factor **2.196).**

- Debaldev Jana, **Rashmi Agrawal,** Ranjit Kumar Upadhyay, **"Top-predator interference and gestation delay as determinants of the dynamics of a realistic model food chain"** Published in Journal **Chaos Solitons and Fractals,** 69 (2014) 50-63 (**SCI** index, Impact Factor **9.922).**

- D. Jana, N. Bairagi, **R. Agrawal**, R.K. Upadhyay, **"Modeling the Effect of Gestation Delay of Predator on the Stability of Bifurcating Periodic Solutions in Wetland Ecosystem"** Published in **The Journal of Ecology**, Photon 107 (2013) 175-189 (Impact Factor **5.12**).

Conference/Seminar/Faculty Development Programme/Workshop

- Participated in the conference **"Recent Advances in Mathematics and its Application RAMA-2013"** being organized during February 14-16, 2013 at ISM, Dhanbad.

- Participated in the advanced level workshop **"Nonlinear Differential Equations: Dynamics of Complex Systems"** during Sept. 23-28, 2013 at University of Calcutta.

- Poster presented paper entitled **"Top-predator interference and gestation delay as determinants of the dynamics of a realistic model food chain"** in the International Conference on Environmental Biology and Ecological Modeling (ICEBEM-2014) during Feb. 24-26, 2014 at Visva-Bharti, Santiniketan.

- Presented paper entitled **"Modeling the effect of mutual interference in a delay-induced predator-prey system"** in the International Conference on Advances in Dynamical Syastems (ICADS-2014) during March 10-13, 2014 at Central University of Rajasthan, Kishangarh, Rajasthan.

- Participated in the conference **"Indian Mathematical Society IMS-2014"** being organized during Dec 27-30, 2014 at ISM, Dhanbad.

- Presented paper entitled **"Global dynamic behavior of a predator-prey system with competitive interference and time delay"** in the conference National Seminar on Advances in Applied Mathematics & Mechanics (NSAAMM-2015) during March 12-13, 2015 at SGC Nadaun, Hamirpur, H. P.

- Presented paper entitled "**The gestation delay a factor causing complex dynamics in Gause type competition models"** in the International Conference on Mathematical Modeling & Simulation (ICMMS-2016) during August 29-31, 2016 at Institute of Science, BHU, Varanasi.

- Organized a Five days online **Faculty Development Programme on Research Methodology** sponsored by ATAL academy, Dec 07-11, 2020.

- Participated in an International Conference on "**Resurgent Bharat on the Global Canvas"** during February 25-26, 2024 organized by Shaikshik Foundation in collaboration with Shivaji College, university of Delhi.

- Participated in an **Online Faculty Induction/Orientation Programme** during February 21-March 19, 2024 organized by TLC Ramanujan College, University of Delhi, under the Ministry of Education sponsored Pandit Madan Mohan Malaviya National Mission on Teachers & Teaching scheme.