

April, 2020

Curriculum Vitae



Dr. Ravi P. Gupta, PhD

Assistant Professor,
Department of Mathematics,
Institute of Science,
Banaras Hindu University-221 005.
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Date of Birth: 20/08/1986

Gender (M/F): Male

Nationality: Indian

Research Interest:

Differential Equations, Nonlinear Dynamics, Mathematical Ecology, Pattern Formation.

Research Experience:

Research: 10 years (Including PhD).

Education:

May, 2014- Dec, 2014

NBHM Post-Doctoral Fellow,

Supervisor: Prof. Peeyush Chandra,

Department of Mathematics & Statistics,

Indian Institute of Technology Kanpur, Kanpur, India

Dec, 2007- Feb, 2014,

Ph.D. (Nonlinear Dynamics in Ecology),

Supervisor(s): Prof. Peeyush Chandra and Prof. Malay Banerjee,

Department of Mathematics & Statistics,

Indian Institute of Technology Kanpur, Kanpur, India

CPI: 8.00/10.00.

PhD Thesis Title: “Dynamical Complexity of Some Nonlinear Ecological Systems with Harvesting.”

2005-2007, Master of Science (Mathematics),

Department of Mathematics,

University of Allahabad, India

Marks: **71.25%, First Division.**

2002-2005, Bachelor of Science

Ewing Christian College Allahabad,

University of Allahabad, India

Marks: **68.00%, First Division**

2000-2002, Intermediate (12th Standard) (Science),

Shivaji Intermediate College Khukhundu, Deoria,

Uttar Pradesh Board Allahabad, India

Marks: **65.80%, First Division.**

1998-2000, High School (10th Standard) (Science),

Shivaji Intermediate College Khukhundu, Deoria,

Uttar Pradesh Board Allahabad, India

Marks: **65.00%, First Division.**

Research Project:

- UGC start-grant (BHU)-(Rs. 1 lack): **Completed.**
- UGC start-grant (UGC)-(Rs. 10 lacks): **Ongoing.**
- Early carrier award, DST-SERB-(Rs. 19 lacks): **Ongoing.**

PhD Students:

- Shivam Saxena (JRF-NET)
- Dinesh Kumar Yadav (GATE).
- Arun Kumar (SERB-Project, GATE).
- Shristi Tiwari (GATE).

Scholarships/Fellowships/Awards:

1. CSIR NET-JRF, DEC. 2008.
2. GATE Qualified in 2007 (AIR-391, 93 percentile).
3. Qualified TIFR Written Exam for PhD (Could not appear in Interview).
4. NBHM Post-doctoral fellowship in 2014.
5. Dr. DS-Kothari Post-doctoral fellowship in 2014 (Not Availed).
6. Got AIMS-South Africa Post-doctoral fellowship at Stellenbosch University (Not availed).
7. Got 2nd position in B.Sc. second year and 3rd position in third year and over all 9th position in B.Sc. at Ewing Christian College Allahabad.

8. Got a medal and certificate for oral presentation in “National Seminar on Recent Advances in Mathematics & its Application” held on February 12, 2011 at BND College, CSJM University, Kanpur.
9. Received Medals and Certificate for invited talk as a guest lectures and conducting lab sessions in a short term training program (STTP) on “Mathematical & Optimization Modelling with Simulation by Scientific Tools for Researchers, Engineers and Scientists” at “Department of Mathematics & Humanities, **SVNIT Surat**” during June 22-26, 2015.
10. Received certificate for an invited talk and conducting a MATLAB lab session in STTP on “Modelling, Computing, Simulation in Sciences and Engineering” at “Department of Mathematics, **VNIT Nagpur**” during July 06-10, 2015.
11. Received memento and certificates for invited talks in an advance level workshop on “Mathematical Modeling of Environmental, Ecological and Epidemiological Systems” at “Department of Mathematics, **BHU, Varanasi**” during August 24-29, 2016.
12. Received memento and certificates for invited talks in the workshop on “Differential Equations, bifurcation and Chaos with Numerical Simulation in MATLAB” at “Department of Mathematics, **BHU, Varanasi**” during October 27-28, 2018.

Research Publications:

1. **R. P. Gupta** and Peeyush Chandra, Bifurcation analysis of modified Leslie Gower predator-prey model with Michaelis-Menten type prey harvesting, **Journal of Mathematical Analysis and Applications, (Elsevier)**, 398, (2013), 278-295, Citations-93, **Impact Factor: 1.259**.
2. **R. P. Gupta**, Malay Banerjee and Peeyush Chandra, The dynamics of two-species allelopathic competition with optimal harvesting, **Journal of Biological Dynamics, (Taylor & Fransis)**, 6 (2), (2012), 674-694, Citations-9.

3. **R. P. Gupta**, Malay Banerjee and Peeyush Chandra, Bifurcation Analysis and Control of Leslie-Gower Predator-Prey Model with Michaelis-Menten Type Prey-Harvesting, **Differential Equations and Dynamical Systems**, (Springer), 20, (2012), 339-366, Citations-18.
4. **R. P. Gupta**, Malay Banerjee and Peeyush Chandra, Period doubling cascades of prey-predator model with nonlinear harvesting and control of over exploitation through taxation, **Communication in Nonlinear Sciences and Numerical Simulation**, (Elsevier), 19 (2014), 2382–2405, Citations-10, **Impact Factor: 2.773**.
5. **R. P. Gupta**, Peeyush Chandra and Malay Banerjee, Dynamical complexity of a prey-predator model with nonlinear predator harvesting, **Discrete and Continuous Dynamical Systems Series B (AIMS)**, 20(2), (2015), 423-443, Citations-12, **Impact Factor: 0.937**.
6. **R.P. Gupta**, Peeyush Chandra, Dynamical behavior of a modified Leslie-Gower prey-predator model with Michaelis-Menten type prey-harvesting, *Applied Analysis with Applications in Biological and Physical Sciences*, Springer, 2016 (**Book Chapter**).
7. **R.P. Gupta**, Peeyush Chandra, Dynamical behavior of a prey-predator-scavenger model with harvesting, **Communication in Nonlinear Sciences and Numerical Simulation**, (Elsevier), 49, (2017) 202–214, Citations-8, **Impact Factor: 2.773**.
8. Anuj Kumar, P. K. Srivastava, **R. P. Gupta**, Modeling and Study the Effect of Information-induced Vaccination and Limited Treatment on Infectious Diseases, *Mathematics and Computers in Simulation*, 157 (2019) 77–99, Citations-1, **Impact factor: 1.475**.

9. **R.P. Gupta** and D. K. Yadav. Nonlinear dynamical properties of a consumer-resource food-web model with harvesting, Accepted, International Journal of Bifurcation and Chaos, **Impact factor: 2.45**.

10. **R. P. Gupta**, Shivam Saxena, Stability and bifurcation analysis of a prey-predator model with Allee-effect, (In Preparation).

Membership of a Professional Body:

1. Life Member, Indian Mathematical Society (IMS).
2. Life Member, Indian Science Congress Academy (ISCA).
3. Life Member Indian Academy for Mathematical Modeling and Simulation (IAMMS).
4. Alumni I.I.T. Kanpur (Life Member).

Editorial Board Membership:

Reviewer: Physics Letters A, Acta mathematica Scientia, Comm. Pure Appl. Anal.
Applied Mathematics and Computation,
Mathematics and computer in simulation
DCDIS Series A: Mathematical Analysis,
Natural resource modeling,
Nonlinear Analysis, Real word Applications,
Applied Mathematical Modeling
Applied mathematics and computing,
Communication in Nonlinear Sciences and Numerical simulations.

Teaching Experience:

Currently I am working as assistant professor (AGP 6000/-) at **Institute of Science, Banaras Hindu University** since 08-02-2016. Before joining BHU, I worked at **VNIT Nagpur** as assistant professor (AGP 6000/-) for the period of (31-12-2014 to 05-02-2016). After completing my PhD in Feb, 2014 I worked as a post-doctoral fellow at **IIT Kanpur** for a period of May, 2014 to Dec, 2014.

Total Post PhD Experience (Teaching and Research):

5.5 Years.

The various courses I have taught at VNIT and BHU are:

PG Level Courses:

1. Nonlinear Dynamical Systems (PhD Course).
2. Abstract Algebra (MAL-523) (MSc)
3. Operation Research and Queuing Theory (MAL-532) (MSc)
4. Integral Equations (MTM-310) (MSc).

UG Level Courses:

1. Numerical Methods & Probability Theory (MAL-205)
2. Integral Transforms & Partial Differential Equations (MAL-201).
3. Linear Algebra and Application (MAL-206)
4. Mathematics-II (MAL-102).
5. Mathematical Methods (MTB-402)
6. Statics and Dynamics (MTB-202).
7. Calculus-I (MTB-101)
8. Differential Equations (MTB-203)
9. Dynamical Systems (MTB-611).

(a) IIT Kanpur

- Tutor in courses MTH 101, MTH 102, MTH 203 (Linear algebra, Real and Complex Analysis, ODE's and PDE's) at during Ph.D.

Administrative work:

(a) Institute of Science, Banaras Hindu University:

1. UG Admission committee-2016.
2. UG Counseling committee-2017.
3. PG Admission committee, counseling committee: 2016, 2017.
4. Additional superintendent UG Examination-2017-18.

(b) VNIT Nagpur:

1. Stock-verification committee- 2015.
2. Convocation Committee-2015.

Software and Programming Languages:

Matlab, Matcont, Mathematica, Maple.

Workshops/Conference/STTP Organized:

1. I was one of the organizers in IMS-2015 held at VNIT Nagpur.
2. I was one of the organizers in an advance level workshop on “Mathematical Modeling of Environmental, Ecological and Epidemiological Systems” at “**Department of Mathematics, BHU, Varanasi**” during August 24-29, 2016.

Orientation/ Refresher Courses Participated:

1. Participated full time in Orientation course at UGC-HRDC BHU during July 21 to August 17, 2018.
2. Participated full time in Refresher course at UGC-HRDC BHU during February 26 to March 18, 2019.

Workshops/Short Term Training Programs Participated:

1. Participated in “**National Workshop Cum Training Programme on Dynamical System: Analysis and Applications**” during October 22-31, 2009 at BHU Varanasi.
2. Participated in “**National Meet of Research Scholars in Mathematical Sciences-2009**” from December 19-23, 2009 at IIT, Roorkee.

3. Participated in **“Workshop on Stability & Bifurcation Analysis and Pattern Formation in Mathematical Ecology and Epidemiology”** during February 25-March 02, 2011 at IIT, Kanpur.
4. Participated in **“Indo-German Conference on PDE, Scientific Computing and Optimization”** in Applications during October 07–09, 2011 at IIT Kanpur.
5. Participated in **“Workshop on Nonlinear Dynamics in Biology”** during July 08-13, 2013 at IISC Bangalore.
6. Participated in **“Indo-Canadian workshop on mathematical modeling of infectious diseases”** during January 20-22, 2014 at Department of Mathematics “I.I.T. Roorkee, Uttarakhand”

Paper Presented in International/National/Local level Conferences:

1. Participated and presented a paper in **“International Conference on the Theory Method and Applications to Nonlinear Equations”** during December 17-21, 2012 at Texas A&M University-Kingsville, USA.
2. Participated and presented a paper in International Conference **“Models in Population Dynamics and Ecology”** during August 26-29, 2013 at University of Osnabruck, Germany.
3. Participated and presented a paper in **“International Conference on Mathematical Modeling and Numerical Simulation”** during July 01-03, 2013 at BBAU, Lucknow.
4. Participated and presented a paper in **“An International Conference on Mathematical Modeling and Computer Simulation with Applications”** during

December 31, 2013 – January 2, 2014 at Department of Mathematics and Statistics,
I.I.T. Kanpur.

5. Participated and presented a paper in “**International Conference on Recent Advances in Mathematical Biology, Analysis and Applications**” at Department of Applied Mathematics Aligarh Muslim University, India during June 04-06, 2015.
6. Participated and presented a paper in “**An International Conference on Mathematical Modeling and Simulation**” during August 29-31, 2016 at Department of Mathematics, Banaras Hindu University, Varanasi.
7. Participated and presented a paper in “**An International Conference of the Indian Mathematics consortium (TIMC)**” during Dec 14-17, 2016 at DST-SIMS, Banaras Hindu University, Varanasi.
8. Participated and presented a paper in “**6th China India Japan Korea Mathematical Biology Colloquium (CIJKMB)**” during Aug 23-26, 2017 at **IIT Kanpur**.
9. Participated and presented a paper in “**National Seminar on Recent Advances in Mathematics & its Application**” held on February 12, 2011 at BND College, CSJM University, Kanpur.
10. Participated and presented a paper in “**National Conference on Mathematical Modeling and Computer Simulation**” during March 23-25, 2012 at ITBHU, Varanasi.
11. Participated and presented a paper in “**National Workshop and Conference on Evolution Equations: Theory, Method & Applications**” during December 2-8, 2012 at IIT, Kanpur.
12. Participated and presented a paper in “**National Conference on Mathematics**” during Nov 29-Dec 01, 2013 at “**Department of Mathematics and Astronomy,**

Lucknow University”.

13. Participated and presented a paper in “**Annual Open House-2013**” on Dec 07, 2013 at Department of Mathematics and Statistics, I.I.T. Kanpur.
14. Delivered a talk and conducted a MATLAB lab session in STTP on “**Modelling, Computing, Simulation in Sciences and Engineering**” at “**Department of Mathematics, VNIT Nagpur**” during July 06-10, 2015.
15. Participated and presented a paper in “**One Day Symposium on Modeling and Computation**” on April 09, 2016 at “**Department of Mathematics, I.I.T. Patna**”.
16. Delivered an invited talk in “**ICMMC-2018**” during Dec 01-03, 2018 at “**Department of Mathematics, South Asian University, New Delhi**”.
17. Participated and presented a paper in “**ISCA-2019**” on Jan 03-07, 2019 at “**Lovely Professional University, Jalandhar**”.
18. Delivered invited lecture in National Conference on Recent Trends in Differential Equation: Theory, Modeling and Computation 2019 (NCDE-2019) “**Department of Mathematics, IIT Patna**”.