

Curriculum Vitae
Ranjit Kumar Upadhyay
June 30, 2020

Name : **Ranjit Kumar Upadhyay**

Date of Birth : 01-01-1967

Sex : Male

Nationality : Indian

Present Position : Professor

Mailing Address

Office: Department of Mathematics & Computing

Indian Institute of Technology (Indian School of Mines) Dhanbad

Dhanbad- 826 004.

Jharkhand, India

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IIT(ISM) Campus, Dhanbad - 826004

Jharkhand, India

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Home page: http://www.iitism.ac.in/index.php/faculty/faculty_detail

http://www.ismdhanbad.ac.in/cv/cv_ranjit.pdf



ACADEMIC BACKGROUND

- Ph.D. in Mathematics (2000), Indian Institute of Technology, Delhi
- M.Sc. in Mathematics (1992), Indian Institute of Technology, Kanpur
- B.Sc. Mathematics Honors (1990), Bhagalpur University

DETAILS OF EMPLOYMENT: [TEACHING EXPERIENCE: 23 YEARS]

- **31 March 2010 to Present: Professor**, Indian Institute of Technology (ISM), Dhanbad (AGP: 10500).
- **06 May 2009 – 30 March 2010: Associate Professor**, Indian School of Mines, Dhanbad (AGP: 9500).
- **31 March 2003 – 05 May 2009: Assistant Professor**, Indian School of Mines, Dhanbad.
- **31 May 2000 --30 March 2003: Senior Lecturer**, Indian School of Mines, Dhanbad.
- **25 July 1997 -- 27 May 2000: Lecturer**, SBS College of Engg. & Technology, Ferozepur, Punjab.

OTHER POSITIONS:

- **Member of Executive Board and General Council**, a highest policy decision making body of the Institute during 1 July 2008- 30 June 2009.
- **Member of M.Sc./M.Sc. Tech Examination Committee** during the period 01-09-2010- 31.08.2012.
- **Chairman of M.Sc./M.Sc. Tech Entrance Examination committee** for the period 01-12-2014- 31.11.2017.
- **Chairman GATE-JAM 2020 [05.09.2019- CONTINUE]**
- Advisor of Gender Sensitization Committee
- Member of SAARC Countries Committee for 3Yrs M.Sc./M.Sc. Tech courses in AGP and AGL admission
- Member of Academic Council and Senate
- Member of the different selection committee for faculty selection in different NITs and Universities
- Member of ACP/MACP committee of the Institute
- Chairman of different inquiry committee
- Chairman of Price Negotiation Committee for purchase of Answer script. etc. (2008)

- Faculty -in -Charge for Recruitment of faculty in IIT(ISM) Dhanbad
- Faculty -in-Charge of JRF, Department of Mathematics & Computing
- Member of selection committee of JRF
- Member of Improvement Group and Security committee
- In charge of Computer lab and Time table committee of the Department of Applied Mathematics
- Warden of Diamond Hostel
- Teacher's Advisor (Anti-ragging squad)

VISITING POSITIONS:

- **Visiting Fellow** in EOBU, Jawaharlal Nehru Center for Advances Scientific Research, Jakkur, and Bangalore (Visited to Professor Amitabh Joshi) (Summer 2002).
- **Visiting Scientist** in Biomathematics Group, **Indian Statistical Institute Kolkata** (Visited Professor Joydev Chattopadhyay) (Summer 2004).
- **Post-Doctoral Fellowship** in the program of Non-linear dynamics and chaos modeling for Ecological systems, HUST, Wuhan, P. R. China during September 2005-September 2008 (Not availed).
- **Visiting Research Fellow** under Indo-Hungarian Educational exchange programme in **Eötvös Lorand University**, Faculty of Science, Institute of Biology, Department of Plant Taxonomy and Ecology (Visited to Professor Scheuring Istvan). (Summer 2010)
- **Visiting Fellow** to **Isaac Newton Institute for Mathematical Sciences, Cambridge** to participate in the program “*Coupling Geometric PDEs with Physics for Cell Morphology, Motility and Pattern Formation*” 1st October 2015 to 15th December 2015.
- **Visiting Scientist** to Applied Mathematics Laboratory, **University of Le Havre Normandie, France** (Professor M.A. Aziz Alaoui) (Summer 2016).
- **Visiting Scientist** to Applied Mathematics Laboratory, **University of Le Havre Normandie, France** (Professor M.A. Aziz Alaoui) (Winter 2018).

RESEARCH [RESEARCH EXPERIENCE: 25 YEARS]:

CURRENT RESEARCH INTEREST:

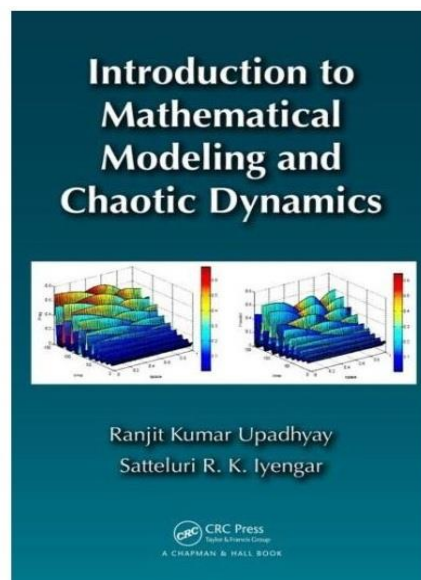
Differential Equations, Ecological and Environmental Modeling, Chaos Modeling, Mathematical Ecology, Nonlinear dynamics, Dynamical system Theory, Disease dynamics, Population dynamics, Reaction-Diffusion Modeling, Spatio-temporal pattern formations in Ecology, E-epidemic modeling and Virus dynamics, Neural modeling.

BOOKS PUBLISHED:

1. INTRODUCTION TO MATHEMATICAL MODELING AND CHAOTIC DYNAMICS

Authors: R. K. Upadhyay & S. R. K. Iyengar

Publisher: CRC Press Taylor & Francis Group (Published: July 23, 2013 by Chapman and Hall/CRC press)



*Mathematical Association of America (MAA) Review Report for this book [Reviewed by Dhruba Adhikari, on 17/12/2014]

<http://www.maa.org/publications/maa-reviews/introduction-to-mathematical-modeling-and-chaotic-dynamics>

Dhruba Adhikari,
Faculty of mathematics,
Southern Polytechnic State University,
Marietta, Georgia.

*A report about it was published in Hindustan Times paper and my interview was telecast on the Sahara Samay channel on September 22, 2013.

BOOK UNDER PUBLICATION/PREPARATION:

2. Spatial Dynamics & Pattern Formation in Biological Populations

(Applications to Ecological, Epidemiological and Neural systems)

Publisher: CRC Press Taylor & Francis Group, New York, USA

INTERNATIONAL JOURNAL VOLUME EDITING:

(i) Guest Editor for the special issue on *Nonlinear Models in Biosignaling, Biosensor and Neural Systems – Modeling, Simulations, and Applications*

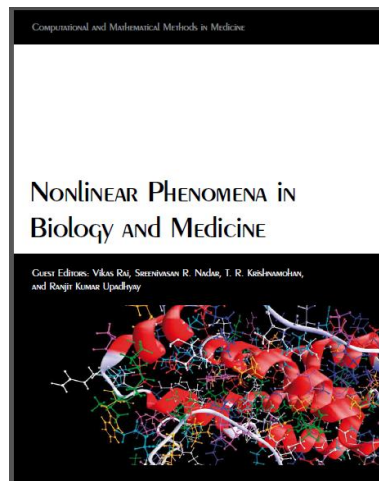
Name of the Journal: *Differential Equations and Dynamical Systems* (Springer)

Currently in Progress; To be published in December 2020.

(ii) Guest Editor for the special issue on *Nonlinear Phenomena in Biology and Medicine*

Name of the Journal: *Computational and Mathematical methods in Medicine* (2012)
(Thomson Reuters, *Impact Factor* 1.018)

Guest Editors: Vikas Rai, S.R. Nadar, T.R. Krishnamohan, **R.K. Upadhyay**



CHAPTERS PUBLISHED IN EDITED BOOKS:

1. DYNAMIC MODELS OF INFECTIOUS DISEASE: NON VECTOR BORNE DISEASES

Editors: V. Sree Hari Rao & Ravi Durvasula

Chapter Title: Modeling the spread and outbreak dynamics of Avian Influenza (H5N1) Virus and its possible control

Authors: V. Sree Hari Rao & **R. K. Upadhyay**

Publisher: Springer Science, New York 2013

2. CURRENT ISSUES OF WATER MANAGEMENT

Editor Uli Uhlig

Chapter Title: Wetlands for Water Quality Management- The Science and Technology

Authors: Vikas Rai, A. M. Sedeki, Rana D. Parshad, **R. K. Upadhyay** and S. Bhowmick

Publisher: InTech ISBN 978-953-307-413-9, 352 pages, December 2011.

3. RECENT ADVANCES IN INFORMATION TECHNOLOGY

Editors: G.P. Biswas, S. Mukhopadhyay

Chapter Title: Modeling the complex dynamics of epidemic spread under Allee Effect

Authors: Parimita Roy, **R.K. Upadhyay**

Publisher: Springer Science, New York 2014.

RESEARCH PROJECT/CONSULTANCY UNDERTAKEN:

1. Worked as **Project Assistant** in project# DEFW/MATH/8626 entitled “*Dispersion of Air pollutant and its Control by Green Belt*”, Department of Mathematics, IIT Kanpur. (May 1992-June 1993). [Prof. J. B. Shukla, S.S. Bhatnagar Awardee]

2. Worked as **Senior Research Assistant** in the research project # RP-034/90 entitled “*Development of Dynamical Statistical Model for Local Weather Prediction over Northwest India for operational use in Indian Air Force*”, CAS, IIT Delhi. (July 1993- June 1994). [Prof. U.C. Mohanty, S.S. Bhatnagar Awardee]

3. **Fast track Young Scientist Award 2001-02** Project No. SR/FTP/MS-18/2001 from **DST, New Delhi** (Rs. **3.24** Lakhs) (Status: Completed). [During 24.09.2002-31.03.2005]

Project Title: *Chaos, Synchrony & Persistence in Spatially Extended Ecological Systems.*

4. Minor Research Project from **Indian School of Mines, Dhanbad** (Rs. **40,000**) (Status: Completed).

Project Title: *Functional Role of Chaos and its Implication in Ecosystem Stability.*

5. R & D Project No. UGC (32)/2008-09/220/AM. From **UGC, New Delhi** (Rs. **7.26** Lakhs) (Status: Completed). [During 01.04.2008- 31.03.2011]

Project title: *Modeling the Dynamic Nature of Ecological Complexity: A Mathematical and Stochastic Approach.*

6. R & D Project No. UGC (19) 2007-08/193/AM from **UGC, New Delhi** (Rs. **5.62** Lakhs) with Dr. G.N. Singh (Status: Completed).

Project Title: *Search of Good Rotation Pattern- To Address the Estimation and Forecasting Problems.*

7. Consultancy Project from **State Pollution Control Board, Orissa** (Rs. **52.24** Lakhs) with CME. (Status: Completed).
Title: Preparation of Regional Environmental Management plan for Angul-Talcher Meramundali Area of Orissa.
8. R & D Project from **DST, New Delhi** (Rs. **39.90** Lakhs) with Deptt. of Applied Physics. (Status: Completed)
Project Title: High Resolution Retinal Imaging of Living Eye through Adaptive Optics. (with Dr. A.K. Nirala and Prof. P.S. Gupta)
9. R & D Project No. UGC (89)/2013-2014/337/AM. From **UGC, New Delhi** (Rs. **3, 49, 500** Rs.) (Status: Completed). [During 01.04.2013 – 31.03.2016]
Project title: Modeling the Spatiotemporal Complexity of Eco-Epidemiological System: A Dynamical System Approach.
10. R & D Project CSIR No. 25(0277)/17/EMR-II. From CSIR, New Delhi (Rs. 15,79, 667) (Status: Complete). [During 01.04.2017-31.03.2020].
Project title: Mathematical Modeling of Dynamical Diseases in the Human Brain.
11. R & D Project No. MTR/2017/000301. MATHEMATICAL RESEARCH IMPACT-CENTRIC SUPPORT (MATRICS) SCHEME funded by DST, SERB, New Delhi (Rs. 6.00 lakh) (Status: Awarded)

Project title: Dynamic Modeling of Spatial Epidemic and Eco-Epidemiological Systems-a New Healthcare Initiative

DISSERTATIONS/THESIS SUPERVISED:

1. M. Sc. (Mathematics & Computing) – **25** (Completed)
2. M. Tech. (Mathematics & Computing)-**06** (Completed)
3. M. Phil. – **09** (Completed)
4. Ph. D.– **09** (Completed) +**06** (Under progress) =**15**
5. Post-doctoral Fellow: **02**

Complete list of Post-Graduation Thesis Supervision

Serial No.	Name of the student/research Scholar	Title of thesis	Master's & Doctorate Level Thesis	Year of Completion	Co-guide (s) if any
1.	Mr. Abhay Kumar	Modelling Ecological Systems.	M.Sc (Mathematics and Computing)	2003	
2.	Mr. Raju Datta	Chaos and Crisis in Ecological systems.	M.Sc (Mathematics and Computing)	2004	
3.	Miss Archana	Modeling Epidemiological	M.Sc	2005	

	Bhatta	Systems.	(Mathematics and Computing)		
4.	Mr. Tanmay Joarder	Dynamical studies of SEIR Epidemic model.	M.Sc (Mathematics and Computing)	2005	
5.	Mr. Dipanjan Ray Chaudhuri	Dynamics and Synchronization of three and four dimensional model systems.	M.Sc (Mathematics and Computing)	2006	
6.	Mr. Debasish Paul	Modelling Terrorism: A Global Challenge	M.Sc (Mathematics and Computing)	2007	
7.	Miss Purnima Hedao	Exploring self-similar structures in Mandelbrot and Julia sets.	M.Sc (Mathematics and Computing)	2008	
8.	Miss Manorma Kumari.	New Algorithm for the study of Self-affine map: Application to Sierpinski Carpet	M.Sc (Mathematics and Computing)	2008	
9.	Miss Renuka Kumari	Nonlinear dynamics and chaos in Financial Market.	M.Sc (Mathematics and Computing)	2009	
10.	Mr. Sudarshan Dhua	Spatiotemporal dynamics of Eco-epidemiological models.	M.Sc (Mathematics and Computing)	2010	
11.	Mr. Anup Kumar Sharma	Modelling the spread of Swine flu and predicting outbreak diversity.	M.Sc (Mathematics and Computing)	2010	
12.	Miss Luck Raj Laxmi	Patterns and wave in Eco-epidemiological systems	M.Sc (Mathematics and Computing)	2011	
13.	Mr. Vikas Kumar	Patterns and wave in Ecological systems	M.Sc (Mathematics and Computing)	2011	
14.	Miss Nayana Mukherjee	Nonlinear dynamics and chaos in Electrical systems.	M.Sc (Mathematics and Computing)	2012	
15.	Miss Koyel Chakravarty	Bifurcation in three species Ecological systems	M.Sc (Mathematics and Computing)	2012	
16.	Mr. Suman Dey	Modeling the Epidemic systems	M.Sc (Mathematics and Computing)	2013	
17.	Mr. Sumit Kumar	Global stability analysis of stochastic predator-prey systems with mutual	M.Sc (Mathematics and Computing)	2014	

		interference			
18.	Miss Sushma Kumari	Global stability analysis of Ecological systems with mutual interference	M.Sc (Mathematics and Computing)	2014	
19.	Miss Ruchika Burman	Modeling the spread and outbreak of Zika virus	M.Sc (Mathematics and Computing)	2017	
20.	Miss Didriksha Das	Transmission dynamics of Zika virus in Human and mosquito population	M.Sc (Mathematics and Computing)	2017	
21.	Mr. Koashal Kumar Nagar	Modeling the spatiotemporal transmission of recent Ebola outbreak	M.Sc (Mathematics and Computing)	2018	
22.	Miss Rajiya Khatoon	Chaos in deterministic Cancer model	M.Sc. (Mathematics and Computing)	2019	
23.	Miss Anupa Panna	Chaos in deterministic Cancer model	M.Sc. (Mathematics and Computing)	2019	
24.	Mr. Asharam Sharma	Dynamics of Cancer model revisited	M.Sc. (Mathematics and Computing)	2020	
25.	Mr. Arjun Kumar	Dynamics of Cancer model revisited	M.Sc. (Mathematics and Computing)	2020	
Integrated M.Tech. (Mathematics and Computing)					
1.	Mr. N. Alwarappan	Nonlinear dynamics in Indian Stock Market	Integrated M.Sc (Mathematics and Computing)	2011	
2.	Mr. Akash Kumar	Deciphering dynamics of Epidemic spread and outbreak: spatial and non-spatial SEIR model	Integrated M.Tech (Mathematics and Computing)	2015	
3.	Mr. Gaurav	Statistical modelling for Indian Stock Market	Integrated M.Tech (Mathematics and Computing)	2016	
4.	Mr. Vijay Kumar Kesrani	Text mining in Customer feedback: Relationship and frequency Analysis	Integrated M.Tech (Mathematics and Computing)	2018	
5.	Mr. Sambuddha Nath	Large Data Automation	Integrated M.Tech (Mathematics and Computing)	2019	

6.	Mr. Nikhilesh Rochlani	Diabetic Retinopathy Detection Using Deep Learning Techniques	Integrated M.Tech (Mathematics and Computing)	2020	
M. Phil (Applied Mathematics)					
1.	Miss Nitu Kumari	Exploring the dynamical nature of ecological complexity: A dynamical system Approach	M.Phil (Applied Mathematics)	2006	
2.	Mr. Vikas Kumar	A study of three-species model food chains with predator interference.	M.Phil(Applied Mathematics)	2007	
3.	Mr. Nilesh Kumar Thakur	Modelling Ecological systems with mutual interference and time delay.	M.Phil(Applied Mathematics)	2007	
4.	Mr. Pankaj Kumar	Modelling the spatiotemporal complexity of a wetland system.	M.Phil(Applied Mathematics)	2008	
5.	Miss Anita Kumari	Spatiotemporal Patterns formation in spatial predator-prey Systems.	M.Phil(Applied Mathematics)	2009	
6.	Mr. Ashish Kumar Prasad	Modeling the long time dynamics of aquatic systems: An analytical Approach	M.Phil(Applied Mathematics)	2011	
7.	Mr. Jyotsika Dutta	Bifurcation phenomena in Dynamical systems.	M.Phil(Applied Mathematics)	2012	
8.	Miss Sarita Kumari	Complex dynamics in some model Neural systems	M.Phil(Applied Mathematics)	2013	
9.	Miss Sangeeta Kumari	Dynamic epidemic models for worms and viruses in computer network	M.Phil(Applied Mathematics)	2014	
Ph.D. (Applied Mathematics)					
1.	Dr. Nitu Kumari Associate Prof. in IIT Mandi	Modelling the dynamical complexity in diffusion driven ecological systems.	Ph.D. (Applied Mathematics)	2009 (Completed)	
2.	Dr. Nilesh Kumar Thakur Assistant Prof. in NIT Raipur	Modeling the dynamic nature of Ecological complexity in spatial aquatic systems.	Ph.D. (Applied Mathematics)	2012 (Completed)	
3.	Dr. S.N. Raw Assistant Prof. in NIT Raipur	Complex dynamics of Ecological systems: Models and Methods	Ph.D. (Applied Mathematics)	2012 (Completed)	

4.	Dr. Parimita Roy Postdoc in University of Le Havre Normandie, France	Modeling the spatiotemporal complexity of Eco-epidemiological systems	Ph.D. (Applied Mathematics)	2016 (Completed)	
5.	Dr. Rashmi Agrawal Assistant Prof. in IIT Dharwad, Karnataka.	Modeling ecological systems with mutual interference and time delay	Ph.D. (Applied Mathematics)	2017 (Completed)	
6.	Mr. Satish Kumar Tiwari Assistant Prof. in BIT Sindri.	Modeling the spatiotemporal complexity of Wetland systems	Ph.D. (Applied Mathematics)	2017 (Completed)	
7.	Mr. Argha Mondal Swartz Fellowship in University of Washington	Dynamical studies of voltage- gated Neuron models under realistic situations: Nonlinear responses and Synchronization	Ph.D. (Applied Mathematics)	Completed	
8.	Miss Renu UGC-CSIR JRF	Fuzzy Dynamical Systems: Models & Methods	Ph.D. (Applied Mathematics)	Completed	With Dr. S.P. Tiwari
9.	Mr. Jyotiska Datta Assistant Professor & Head, Central University of Orissa	Eco-Epidemiological systems with delay and Diffusion: A Modeling study	Ph.D.(Applied Mathematics)	Completed	June 2020
10.	Miss Sangeeta Kumari	Modeling the worms and viruses in computer Networks.	Ph.D. (Applied Mathematics)	(Under Progress)	
11.	Miss Swati Mishra	Modeling Ecological systems with delay and diffusion	Ph.D. (Applied Mathematics)	(Under Progress)	
12.	Miss Sarita Kumari	Modeling Ecological complexity of aquatic and Marine systems.	Ph.D. (Applied Mathematics)	(Under Progress)	
13.	Mr. Arnab Mondal	Modeling Neural dynamics with noise and time delay	Ph.D.(Applied Mathematics)	(Under Progress)	
14.	Mr. Sanjeev Kumar Sharma UGC-CSIR JRF	Spiking and bursting phenomena in Neural models and networks	Ph.D. (Applied Mathematics)	(Under Progress)	
15.	Miss Sattwika Acharya	Modeling the epidemic dynamics with delay and diffusion	Ph.D. (Applied Mathematics)	(Under Progress)	

Post- Doctoral Fellow					
1.	Dr. Rachana Bhatia		NBHM Post-Doctoral Fellow (Left)	Ph.D. from IIT Roorkee	With Prof. R.C. Mittal
2.	Dr. Ashok Kumar Pal	CSIR Project No. 25(0277)/17/EMR-II	CSIR RA	Ph.D. from IIT(ISM) Dhanbad	Dr. B.S. Kuswah

WORKSHOP ORGANISED:

Chaos and Complexity in Nonlinear phenomena in 80th Indian Mathematical Society (December 27-30, 2014).

CONFERENCE ORGANISED: A National Conference on *Modeling Analysis & Simulation (MAS-2019): Exploring the Nonlinear world of Mathematics*, During 16-18, 2019 [[Convener](#)]

MAJOR ACADEMIC HIGHLIGHTS/AWARD & HONOURS:

- Nominated as a society member of **International Society of computational Ecology, Hong Kong.**
- **Member of International Society** (i) American Mathematical Society
(ii) International Academy of Ecology and Environmental Sciences, Hong Kong.
- **Life member** of (i) Indian Mathematical Society, (ii) International Academy of Physical Sciences, (iii) Bio-mathematical Society of India.
- Guest Editor of the Journal *Differential Equations and Dynamical Systems (Springer)*, Special issue of “**Nonlinear Models in Biosignaling, Biosensor and Neural Systems – Modeling, Simulations, and Applications**”. (Issue open for submission, 2020)
- Guest Editor for the special issue on “*Nonlinear Phenomena in Biology and Medicine*” in the Journal “*Computational and Mathematical Methods in Medicine*”
- **Associate Editor**
 - (i) *Food Webs* (Elsevier Journal)
 - (ii) *Advances in Difference Equations* (Springer Journal)
 - (iii) *Differential Equations and Dynamical Systems* (Springer Journal)
- **Member of Editorial Board of**
 - (i) *Food Webs* (Elsevier Journal, USA)
 - (ii) *Differential Equations and Dynamical Systems* (Springer Journal)
 - (iii) *Journal of Nonlinear Systems and Applications (JNSA)* From France

- (iv) Computational Ecology and Software (CES) From Hong Kong.
 - (v) International Journal of Biomathematics and Systems Biology
 - (vi) Invertis Journal of Science & Technology
- Called for interview for the Director, HBTI, Kanpur on 20.10.2014
 - Attended Summer School on Advanced Real Analysis and Applications to PDE, IISC-TIFR Mathematics Programme at IISc Bangalore during May 18- June 8, 1992.
 - Talk in International conference on Mathematical Modeling of Nonlinear Systems, Deptt. of mathematics, IIT Kharagpur (December 09-11, 1999).
 - Invited Talk in Joint 9th National Conference of the Vigyan Parishad of India on Applied and Industrial Mathematics & 5th Annual Conference of Indian Society of Information Theory and Applications at NSIT, Dwarika New Delhi during 22-24, 2002.
 - **Invited talk** in an “*International conference on Nonlinear phenomena*” organized by Nonlinear studies group, Department of Mathematics, *IISC Bangalore* (January 5-10, 2004).
 - **Invited talk** in ELTE Institute of Theoretical Physics, Seminar in Statistical Physics, in Eötvös University, Budapest, Hungary (June 2, 2010) visited under Indo-Hungarian Educational exchange programme.
 - **Invited talk in International Congress of Mathematician** in Hyderabad during 19-27 August 2010.
 - **Invited talk** in Cambridge University in *Computability in Europe* 2012.
 - **Invited talk** in 101st Indian Science Congress, Jammu University (3-7 February 2014)
 - **Invited talk** in BITS Pilani, Lucknow University, Punjab Technical University & Jadavpur University.
 - **Invited talk** at Isaac Newton Institute of Mathematical Sciences, University of Cambridge, UK. (October 6, 2015)
 - **Invited talk** at Department of Applied Mathematics in University of Leicester, UK. (November, 26, 2015)

- **Invited talk** at Applied Mathematics Lab, University of Le Havre Normandie, France (24 June 2016)
- **Invited talk** at Applied Mathematics Lab, University of Le Havre Normandie, France (19 December 2018)
- **Invited Lectures in a workshop on ATMW PDE and Mechanics**, Jaypee University of Information Technology, Solan during June 3-15, 2013 organized jointly by Bombay and TIFR Mumbai.
- **Participated in Global Innovation Initiative: UK-US-India** joint research proposal submitted by University of Sussex, UK.
- **Chaired Technical sessions & Judges of many Award committees** in many International and National Conferences.
- Qualified GATE- Examination for Junior research fellowship held in March 1993.
- **Fast track Young Scientists Research Award 2001-02**, *Department of Science & Technology Delhi, Government of India.*
- **Reviewer for the many reputed International journals** like Journal of Mathematical Biology, Mathematical Biosciences, American Naturalist, International Journal of Bifurcation and Chaos, Physica A, Physica D, Journal of Theoretical Biology, Nonlinear Analysis: Real world Applications, Nonlinear Analysis: Modeling and Control, Applied Mathematical Modelling, Nonlinear Dynamics, Applied Mathematics and Computations, Journal of Biological Dynamics, Epidemiology, Chaos Solitons & Fractals, Nonlinear Dynamics, Advances in Difference Equations, Journal of Biological Dynamics, Differential Equations and Dynamical systems, Mathematics and Computer in Simulations, IISc Journals
- My research report on “***Modeling the Spread of Bird flu and predicting outbreak diversity***” was published in Hindustan Times, Ranchi Edition on 19 January 2008 with the title “*Prediction made easier: ISM teacher*” and my interview was telecast on the local T.V Channel in January 2008.

FOREIGN COLLABORATION:

Complete list of publications with foreign collaborators:

S.N	Names of Foreign Collaborators	Complete Address	Details about publications
1.	Dheeraj Bhardwaj* R.K. Upadhyay	*Department of Mathematics, Eastern Illinois University, Charleston, IL61920, USA.	Group Theoretic Method for Converging Shock Wave Problem. Applied Mathematics Letters Vol. 12, 1999; 1276-1286.
2.	Vikas Rai Madhur Anand* R.K. Upadhyay	*Department of Biology, Laurentian University, Ramsey Lake Road, Sudbury, Ontario, Canada P3E 2C6. & Department of Environmental Biology, University of Guelph, Guelph, Ontario, Canada N1G 2W1.	Trophic structure and dynamical complexity in simple ecological model. Ecological Complexity Vol. 4, 2007; 212-222.
3.	R. K. Upadhyay R.K. Najj* Nitu Kumari	*Department of Mathematics, College of Science, University of Baghdad, Iraq.	Dynamical Complexity in some ecological models: effect of toxin production by phytoplankton. Nonlinear Analysis: Modelling and Control Vol. 12 (1), 2007; 123-138.
4.	R. K. Upadhyay V. Sree Hari Rao*	*Department of Mathematics & Statistics, University of Missouri, Rolla, MO, 65409-0020, USA.	Short-term Recurrent Chaos and Role of Toxin Producing Phytoplankton (TPP) on Chaotic Dynamics in Aquatic Systems. Chaos Solitons and Fractals Vol. 39, 2009; 1550-1564.
5.	R.K. Upadhyay R.K. Najj*	*Department of Mathematics, College of Science, University of Baghdad, Iraq.	Dynamics of a three species food chain model with Crowley-Martin type functional response. Chaos Solitons and Fractals Vol. 42(3), 2009; 1337-1346.
6.	R.K. Najj* R. K. Upadhyay Vikas Rai	*Department of Mathematics, College of Science, University of Baghdad, Iraq.	Dynamical consequences of predator interference in a tri-trophic population model. Nonlinear Analysis: real world Applications Vol. 11(2), 2010; 809-818.

7.	Xiang-Jun Wu* Jie Li** R.K. Upadhyay	*Computing Center, Henan University, Kaifeng, Henan, P.R. China. **School of Computer and Information Engineering, Henan University, Kaifeng, Henan, P.R. China.	Chaos control and Synchronization of a three-species food chain model via Holling functional response. International Journal of Computer Mathematics. Vol. 87(1), 2010;199-214
8.	R. K. Upadhyay, Weiming Wang* N.K. Thakur	*School of Mathematical Sciences, Fudan University, Shanghai, 200433 P.R. China & School of Mathematics and Information Science, Wenzhou University, Wenzhou, Zhejiang, 325035 P.R.China.	Spatiotemporal dynamics in a spatial plankton system Mathematical Modeling of Natural Phenomena Vol. 5(5), 2010; 101-121
9.	Rana D. Parshad* R. K. Upadhyay	*Department of Mathematics & Computer Science, Clarkson University, Postdam, NY 13676, USA.	1. Investigation of long time dynamics of a diffusive three species aquatic model Dynamics of Parial Differential Equations Vol. 7(3), 2010; 217-244.
10.	R. K. Upadhyay Malay Banerjee, Rana D. Parshad* S.N. Raw	*Department of Mathematics & Computer Science, Clarkson University, Postdam, NY 13676, USA.	Deterministic chaos versus stochastic oscillation in a prey-predator-top predator model. Mathematical Modelling and Analysis Vol. 16(3), 2011; 343-364
11.	Vikas Rai* , A. M. Sedeki* , Rana D. Parshad** , R. K. Upadhyay Suman Bhowmick	*Deptt. of Mathematics, Faculty of Science, Jazan University, Jazan, KSA; **Applied Mathematics and Computational Science, King Abdullah University of Science and Technology, Thuwal 23955 – 6900, KSA	Wetlands for Water Quality Management – The Science and Technology Current issues of water Management. InTech, Edited by Uli Uhlig, 2011;163-176.
12.	R. K. Upadhyay V.Volpert* N. K. Thakur	*Directeur de Recherches CNRS, Institut Camille Jordan UMR 5208 Université Claude Bernard Lyon 1, 43 Bd du 11 novembre 1918 69622 Villeurbanne, cedex France.	Propagation of Turing patterns in a plankton model Journal of Biological Dynamics Vol. 6(2), 2012; 524-538

13.	Weiming Wang* Z. Guo* R.K. Upadhyay Y. Lin*	*College of Mathematics and Information Science, Wenzhou University, Wenzhou, Zhejiang 325035, China	Pattern formation in a cross-diffusive Holling –Tanner Model Discrete Dynamics in Nature and Society Vol. 2012, 828219; 1-12.
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