

Ram Singh

CONTACT INFORMATION

Faculty of Applied Mathematics
BGSB University
Rajouri, India.

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EDUCATION

- Ph.D.(Mathematics)-Dr. B.R.Ambedkar University, Agra, India.
- M.Sc.(First Division)- Department of Mathematics, University of Jammu, Jammu.
- B.Sc (First Division)-University of Jammu, Jammu

TECHNICAL SKILLS RESEARCH INTEREST

- *Technical Softwares:* MATLAB, R Software.
- **Mathematical Biology**
Dynamical Systems, Evolutionary Dynamics, Mathematical Epidemiology
Population Dynamics, Theoretical Ecology.

FOREIGN VISITS

- *Visited as Visiting Scientist at ICTP under Federation Scheme, Trieste Italy*

SELECTED PUBLICATIONS

1. **Ram Singh, Attiq Ul Rehamn, Mehedi Masud, Hesham A. Alhumyani, Shubham Mahajan, Amit A. Panit, Praveen Agrawal:** *Fractional order modeling and analysis of dynamics of stem cell differentiation in complex network*, AIMS Mathematics, Vol. 7(4), 2022, pp. 5175-5198 Doi.org/10.3934/math.2022289
2. **Naveen Sharma, Ram Singh, Jagdev Singh and Oscar Castillo:** *Modeling assumptions, optimal control strategies and mitigation through vaccination to Zika virus*, Chaos, Solitons Fractals, 150 September 2021, 111137, DOI.org/10.1016/j.chaos.2021.111137, 2021.(I.F. 5.9)
3. **Attiq-Ul Rehman, Ram Singh, Thabet Abdeljawad, Eric Okyere, Liliana Guran:** *Modeling, analysis and numerical solution to malaria fractional model with temporary immunity and relapse*, Vol. 390, Advances in Difference Equations, 2021.(I.F. 2.8).
4. **Attiq ul Rehman, Ram Singh and Praveen Agarwal:** *Modeling, analysis and prediction of new variants of covid-19 and dengue co-infection on complex network*, Chaos, Solitons Fractals, 150 September 2021, 111008, DOI.org/10.1016/j.chaos.2021.111008, 2021,(I.F. 5.9).
5. **Praveen Agarwal and Ram Singh:** *Modelling of transmission dynamics of Nipah virus (Niv): a fractional order approach*, Physica A: Statistical Mechanics and its Applications, 124243. DOI: 10.1016/j.physa.2020.124243., 2020,(I.F. 3.2)
6. **Praveen Agarwal, Ram Singh and Attiq-ul Rehman:** *Numerical solution of hybrid mathematical model of dengue transmission with relapse and memory via Adams–Bashforth–Moulton predictor-corrector scheme*, Chaos, Solitons Fractals, 143, DOI.org/10.1016/j.chaos.2020.110564, 2020,(I.F. 5.9).
7. **Naveen Sharma, Ram Singh Rachana Pathak :** *Modeling of media impact with stability analysis and optimal solution of SEIRS epidemic model*, Journal of Interdisciplinary Mathematics, 22:7, 1123-1156, DOI: 10.1080/09720502.2019.170683. Taylor Francis
8. **Ram Singh, Shoket Ali, Madhu Jain and Ather Aziz Raina :** *Mathematical model for malaria with mosquito-dependent coefficient for human population with exposed class* Journal of the National Science Foundation of Sri Lanka, 47(2). DOI:10.4038/JNSFSR.V47I2.9160, (I.F.0.5)
9. **Ram Singh, Naveen Sharma and Aditi Ghosh :** *Modeling Assumptions, Mathematical Analysis and Mitigation Through Intervention: An Application to Ebola Type Infectious Disease*, Letters in Bio-Mathematics, Vol.6, pp-1-19.
10. **M. Jain, G. C. Sharma and Ram Singh :** *Mathematical Modeling of Blood Flow in a Stenosed Artery under MHD effect through Porous Medium*, International journal of Engineering Transaction B: Applications, Vol. 23, No. 3 4, December (2010), pp. 243-251. Iran, Scopus, ESCI
11. **M. Jain, G. C. Sharma and Ram Singh :** *A Diffusion-Reaction Model for Mass Transportation in Brain Tissues*, Jnanabha, 0304-9892, Vol. 38, pp. 78-84.

SELECTED
PROCEEDING
PUBLICATIONS

1. **Ram Singh et. al.:** *Mathematical analysis of transmission dynamics of tuberculosis with recurrence based on treatment, IEEE Digital library explore DOI: 10.1109/ICEEOT.2016.7755248.*
2. **Ram Singh and G. C. Sharma:** *Stability Analysis of SIR Model with Vertical Transmission”, Proceeding of International Conference on Advances in Modeling, Optimization and Computing, IIT Roorkee, ISBN: 81-86224-71-2, Dec., 5-7, (2011), pp. 291-300.*

CONFERENCE
SEMINARS

1. Presented a paper co-authored a paper titled “Modeling and analysis of dengue infection with fractional differential operators: Non-Markovian process with vaccination Two Day’s International Conference on “Recent Development in Engineering and Technology” held from 26-02-2021 to 27-02-2021 at Anand International College of Engineering, Jaipur.
2. Presented paper entitled “ A HYBRID MATHEMATICAL MODEL FOR DYNAMICS OF T-CELLS AND CYTOKINES IN DENGUE FEVER” 3rd International Conference on Mathematical Modeling, Applied Analysis and Computation-2020 (ICMMAAC-2020) organized by Department of Mathematics, JECRC University, Jaipur, India on 7-9 August, 2020
3. Participated in National Conference on “Recent Advanced in Computer Sciences IT” held on 24-25 April, 2018 at BGBS University, Rajouri (JK).
4. Participated in National Conference on Mathematical Sciences and Scientific Computing for Industrial Development at Manipal University Jaipur (Rajasthan) on 24-26 Nov. 2017.
5. Paper entitled “Mathematical Modeling and Computational Aspect of Epidemics (Co-infection)” presented in UGC sponsored National Conference on Topology, Analysis, Algebra and Their Applications held at SMVD University, Katra on 7-8 March , 2017.
6. Paper entitled “Transmission Dynamics of Malaria Model with Mosquito-Dependent coefficients for Human Population” presented in Two Days National conference on Analysis, Wavelets Their Applications held at BGSB University Rajouri on April 23-24, 2016.
7. Paper entitled “Mathematical Analysis of Malaria and HIV Co-infection Model with Dependent Transmission Co-efficient in Human Population” presented in 3rd National Conference on Topological Algebra Analysis” at GGM Science College Jammu held on Feb. 18-19, 2016.
8. Paper presented entitled “Modeling of Transmission dynamics of HIV/AIDS among female prostitute” in National Conference on Recent Trends in Mathematical Sciences held at SMVD University on 8-9 October, 2015.
9. Paper entitled “Epidemic model of HIV/AIDS with Latent Infection based on Treatment” presented in 2nd National Conference in Mathematics on Recent Trends in Algebra Analysis” at GGM Science College Jammu held on March 25-26, 2015.
10. Paper presented titled “Controlling and Preventive strategies of HIV/AIDS-TB Co-infection-A Modeling Approach” in 1st International Conference of Indian Society (ISITA) held at Sai Institute, Pathankot Punjab on Jan. 16-19, 2015
11. Paper presented entitled “Mathematical modeling of Co-infection of epidemics” in International Conference organized by Indian Science Congress held at Jammu University, 3-7 February, 2014.
12. Paper presented in Annual National conference on Applications of Mathematics in Science Technology held at BGSRU Rajouri, 29th Sept. 2012.
13. Paper entitled “Mathematical Modeling of Malaria, TB, HIV and AIDS Co-infection” presented in the National Conference on Algebra, Analysis and its Applications held at M.A.M, College, Jammu on 18-19 August, 2012.
14. Paper entitled “Mathematical Modeling of delayed SIR model with vertical transmission of disease” in International Conference on “Advances in Modeling, Optimization and Computing, Dec., 5-7, 2011 held at Indian Institute of Technology, Roorkee (India).
15. Paper presented in Annual National Conference entitled ‘Recent Trends in Mathematics Its Applications” held at Department of Applied Mathematics BGSRU Rajouri, JK, Oct., 2011
16. Paper entitled “Mathematical Modeling of role of awareness in the control and prevention of HIV/AIDS-TB co-infection” in Annual Conference of VPI GSMAT, Mar. 24-26, 2011 held at Shobhit University, Merrut.

17. Paper entitled "Compartment Study of proliferation rate of T-Cells in HIV infection" in National Conference on New Discoveries in mathematics and its applications, Feb, 12-13, 2011, held at Govt. MAM PG College, Jammu
18. Paper entitled "Mathematical modeling of Molecular medicine to solid tumor with chemotherapy" in 20th Annual National conference of Jammu Mathematical Society on "Topological Algebraic Analysis", Feb. 26-28, 2010, held at University of Jammu, Jammu.
19. Paper entitled "Mathematical modeling of infection diseases" in 11th International Conference of International Academy of Physical Sciences, Feb. 20-22, 2010 held at University of Allahabad, India.
20. Paper entitled "Multi-compartment modeling of Cancer Cells interaction with chemotherapeutic drug" in 5th JK Science Congress, Feb. 8-10, 2010 held at University of Jammu, Jammu.
21. Paper entitled "Mathematical Modeling of plasma concentration after oral drug administration with chemical reaction" in National Symposium on Recent Developments in Applicable mathematics Information Technology organized by Vijanan Parishad of Indian, Dec. 4-6, 2009, JayPee IET, Guna (M.P).
22. Paper presented entitled Mathematical modeling of MHD flow through stenosed artery in porous medium " in National Symposium On Modern Trends In Differential Geometry And Mathematical Modeling in Bio-Sciences, Dec. 24-25, 2008, Lucknow University, Lucknow.
23. Paper entitled "Mathematical modeling of Diabetes Mellitus" in Seventy-Eight Annual Session and Symposium on Novel Approaches for Bio-medical Research, Sponsored by NASI, Nov. 21-23, 2008, Punjab University, Chandigarh
24. Paper entitled "Mathematical modeling of TB, HIV/AIDS co-infection" in UGC-SAP (DRS-I) programme, Bharat Ganita Parishad, Dec. 22-23, 2008 Lucknow University, Lucknow.
25. Paper entitled Quantification of T-lymphocytes cells in HIV-1 infection by using Deuterated Glucose" in 12th Annual Conference of Vijnana Parishad of India and National Symposium on Applications of Special Functions, Dec. 25-27, 2007, JNV University, Jodhpur.

ORIENTATION REFRESHER

1. *Attended Refresher course in Mathematical Sciences organized by Academic Staff College, Jammu University, 2015.*
2. *Attended Refresher course on Information Technology (IT) organized by Academic Staff College, Kurukshetra University, 2013*
3. *Attended General Orientation Course at Academic Staff College, Jammu University.*

WORKSHOPS FDPs

1. *Participated one-week AICTE ATAL Academy FDP on "Recent Developments in Mathematical Sciences Engineering" organized by Department of Mathematics, MDU Rohtek, December 22-26, 2021*
2. *International one-week Workshop on System Modeling and Artificial intelligence (SMAI-2021), organized by Department of Mathematics Statistics, Manipal University Jaipur, July 26- 30, 2021*
3. *Participated International Two week in the online HSM Hausdorff School on 'The Circle Method: Entering its Second Century' w.e.f. May 10 - 14 and May 17-21 (2 weeks) 2021 at, Hausdorff Centre for Mathematics, Bonn University Germany.*
4. *Participated one week in "International School-conference in Algorithms, Combinatorics, and Complexity" held online on Zoom on May 24-28, 2021 at Institute of Mathematics 27 Fontanka, St. Petersburg 191023, Russia*
5. *Participated in online School on 'Diffusive Systems: Pattern Formation, Bifurcations, and Biological Applications w.e.f. 12th to 15th April 2021 within our institute, Hausdorff Centre for Mathematics, Bonn University Germany*
6. *One week FDP on Statistical Learning-Based Internet of Things (IoTs) at organized by Rajsthan Technical University Kota and Anand Engineering College Jaipur 10-14 March, 2021*

	7. Participated one Week workshop in Structure and Dynamics in Biology, Chemistry and Materials Science” from 16th to 20th November, 2020 organized by the Department of Chemistry, IIT Roorkee.
	8. Participated one-week workshop on outcome based education and Accreditation organized by IILM College of Engineering Technology 25-29 May, 2020
	9. Participated in one week STC on “MATLAB and LABVIEW with its Hardware Interface through ICT” conducted by ERE dept. BGSBU (Jointly with NITTTR) on Jan.29-Feb. 02, 2018.
	10. Participated in Two-week workshop on “C-Programming” held at Department of Mathematical Sciences, BGSBU Rajouri on April 01-09, 2016
	11. Participated in Two Week National Workshop on “Information Literacy Plagiarism” held at BGSB University on Dec. 1-10, 2014
	12. Participated in Two Weeks National workshop on “Mathematical Modeling and Applications” held at S. S. Memorial College, Dinanagar, Punjab on June 07-21, 2014
	13. Participated in Two Week Workshop on “Stability and Bifurcation Analysis and Pattern Formation in Mathematical Ecology and Epidemiology, Feb. 25- Mar. 2, 2011 held at Indian Institute of Technology, Kanpur (India).
SYMPOSIUM ORGANISED	1. Organized a seminar entitled “Mathematical Modeling Its Application” in 27th International Conference of Forum for Interdisciplinary Mathematics (FIM) I Conjunction with IARS on Interdisciplinary Mathematics, Statistics and Computational Techniques in Dept. of Statistics, Jammu University on 02-04, Nov.2018.
INVITED TALKS/LECTURE:	1. Delivered invited talk on “Progression of epidemiology from ordinary differential equations to fractional-order differential equations”, in XVI Seminario Internacional De Biomatemática at Peru on 17-22 December, 2021.
	2. Delivered extension lecture on “Applications of Differentials Equations”, GDC RS Pura Jammu on 1st April, 2021.
	3. Delivered talks on Probability and Statistics in Two week FDP on machine Learning in CS Dept BGSBU w.e.f 22 April to 5 May 2019.
	4. Delivered an Invited Talk in Refresher Course “Understanding the Nature and Society through Mathematical Modeling” in International Conference on Interdisciplinary Mathematics, Statistics and Computational Techniques in Dept. of Statistics Jammu University on 02-04, Nov. 2018,
	5. Delivered an Extension lecturer in PG Dept. of Mathematics, MAM College Jammu on “Dynamical System and Its Applications on Nov. 03, 2018.
	6. Delivered an Invited lecture in National Conference “Mathematical Sciences and Scientific Computing for Industrial Development” held at Manipal University Jaipur on 24-26 Nov, 2017.
	7. Delivered an invited lecture on “Mathematical Modeling and Computational Aspect of Epidemics” at JNU, New Delhi 2017.
	8. Delivered an Invited lecture on “Mathematical Modeling and its applications in real world problems” in International Conference on History Development of Mathematics, JECRC University, Jaipur (Rajasthan) on Nov.29-Dec.1st, 2013.
MOOCs COURSE:	1. Attended 8 weeks MOOCs course, 2019
	2. Attended 4 Weeks MOOCs Course, 2018
AWARDS:	1. Best Research Application Award at National Conference of Vijnana Parishad of Indian at Shobhit University Merrut 2011
TEACHING EXPERIENCE:	1. More than 11 years teaching UG/PG students in BGSB University
RESEARCH EXPERIENCE:	1. More than 10 years research experience
MPHILL/PHD GUIDED:	1. Shehzad Rashid (M.Phil Degree Awarded)
	2. Shokat Mehmood (M.Phil Degree Awarded)
PROFESSION BODIES LIFE MEMBERSHIP:	• Indian Science Congress Association (ISCA) • Indian Mathematical Society (IMS) • Ramanujan Mathematical Society (RMS) • Life Member of Vijnana Parishad of India (VPI) • Life Member of Jammu Mathematical Society (JMS) • Life Member of Indian Society of Bio-Mechanics (ISBM)

- REVIEWER:
- *Computer and Mathematics with Application, Elsevier, IST Transaction, Elsevier, Computational and Mathematical Biophysics, Degruyter, International Journal of Engineering, American Journal of Operation research, USA, Letters in Biomathematics, Taylor Francis.*
- PROFESSIONAL
EXPERIENCE
(MEMBER)
- *Examination Committee, SoET, BGSSBU, Rajouri*
 - *Centre superintendent SoET, BGSSBU, Rajouri*
 - *Convener of Admission Scrutiny committee, SoET, BGSSBU*
 - *Departmental Research Committee, PG Dept. of mathematics, BGSSBU*
 - *Departmental Research Committee, PG Dept. of Physics, BGSSBU*
 - *Syllabus Framing Committee UG/PG Mathematics Dept. BGSSBU, Rajouri*
 - *BoS, Electronic Communication Department, SoET, BGSSBU*
 - *BoS Computer Sciences Engineering Department, SoET, BGSSBU*
 - *Departmental Research committee, SoET, BGSSBU, Rajouri*
 - Prof. G.C.Sharma (Ex-Pro Vice Chancellor)
Dept. of Mathematics. Dr B.R.Ambedkar University, Agra
 - Prof. M jain
Dept. of Mathematics. Indian Institute of Technology Rorkee, India

Dated: 2022