CURRICULUM VITAE

Dr Govind Prasad Sahu

Designation and Affiliation: Assistant Professor (Mathematics) at Center for Basic Sciences, Pt. Ravishankar Shukla University, Raipur (C.G) - 492010

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❖ Objective:

To learn and explore new ideas, to contribute to the body of knowledge and to work as a successful and innovative academician and researcher in a well reputed organization.

❖ Educational Qualification:

S. No.	Class	Subject	Institute	Board/ University	Percentage
1.	10th	ALL	Govt H.S.S., Tendukona, (C.G.)	M.P. Board of S. E. , Bhopal	78.80%
2.	12th	PCM	Govt H.S.S., Tendukona, (C.G.)	M.P. Board of S. E. , Bhopal	79.55%
3.	B.Sc.	Mathematics, Physics, Com. Sc.	Govt Science College, Raipur (C.G.)	Pt. Ravishankar Shukla Univ., Raipur (C.G.)	69.39%
4.	M.Sc.	Mathematics	Govt Science College, Raipur (C.G.)	Pt. Ravishankar Shukla Univ., Raipur (C.G.)	82.70%
5.	M. Phil.	Maths (Mathematical Ecology)	SOMAAS, Jiwaji University Gwalior	Jiwaji Univ. , Gwalior (M.P.) India	83.50%
6.	**NET-JRF (CSIR)**	Mathematics	CSIR	CSIR	JRF
7.	**GATE**	Mathematics	IIT-R	GATE	94.13 %tile
8.	Ph.D	Mathematics	ABV – Indian Institute of Information Technology & Management, Gwalior (M.P.)	ABV – Indian Institute of Information Technology & Management, Gwalior (M.P.)	

- ➤ **Ph.D.** (March, 2014) titled "**Study of Infectious Disease Dynamics with Vaccination - Quarantine - Isolation and Media Awareness as Control Strategies**" from ABV – Indian Institute of Information Technology & Management, Gwalior (M.P.).
- ➤ **M Phil (83.50%),** in Applied Mathematics (Mathematical Ecology) with **dissertation titled "Some Mathematical Models of Spreading of Infectious Disease with Diffusion in Career Population and Incubated Class"**, Jiwaji University Gwalior (M.P); 2008 (**2nd Rank**).
- ➤ **NET-JRF (CSIR)** qualified in December, 2008 (All India Rank -10).
- ➤ **GATE-2009** qualified (94.13 Percentile, All India Rank - 155, Score- 436).

❖ **Achievements:**

➢ 1st rank in merit in M.Sc. (2004).
➢ 3rd position for best paper presentation at NMRMS, IIT-Roorkee (Dec 15-19, 2009).
➢ All India Rank: 10 in NET-JRF (CSIR): Mathematical Sc. (Dec, 2008)
➢ GATE-2009 (94.13 Percentile, All India Rank: 155, Score- 436)
➢ Junior Research Fellowship - JRF from MHRD, GoI (Jan 2009 to Dec 2010).
➢ Senior Research Fellowship - SRF from MHRD, GOI (Jan 2011 to Dec 2012)

❖ **Current Position (Designation and Affiliation):** Assistant Professor in Mathematics at Center for Basic Sciences, Pt Ravishankar Shukla University Raipur (C.G.).

❖ **Teaching Experience:** Having 7 years teaching experience at undergraduate (UG) and post-graduate (PG) level as shown in reverse chronological order:

S. No.	Designation	Period	Affiliation	Course (Level)
1.	Assistant Professor	1 year 7 month(from 12/01/2017 till date)	Center for Basic Sciences, Pt Ravishankar Shukla University, Raipur (C.G.)	Integrated M.Sc. (PG)
2.	Assistant Professor	4 years and 1 months (10/12/2012 to 11/01/2017)	Government B. P. College of Arts, Commerce & Science, Arang (C. G.)	B.Sc. (UG) M.Sc.(PG)
3.	Assistant Professor (On contract)	4 months (from 24/01/2006 to 30/04/2006)	Govt College Katghora (C.G.)	B.Sc. (UG)
4.	Assistant Professor	1 year and 3 months (from 27/09/2004 to 29/12/2005)	Disha College, Raipur (C.G.)	B.Sc.(UG), B.C.A.(UG), M.Sc. (Com. Sc.)(PG)

❖ **Areas of interest:**

➢ Infectious Disease Modelling, Mathematical Epidemiology and Ecology.
➢ Differential Equations, Dynamical System.

❖ **Research Experience:** 6 year research experience in **Infectious Disease Modelling.**
❖ **Research Summary**

Despite the major advances in the medical sciences, infectious diseases continue to cause significant morbidity and mortality in human populations worldwide, with disproportionate impact, in general, in developing countries, e.g SARS in 2003, Bird Flue in 2004/2005, Swine Flu in 2009, more recently Ebola in 2013-2014 and H1N1 in 2015 (in India).

My research is based on using dynamical systems theories and techniques to study the qualitative dynamics of an infectious disease that is controllable using pharmaceutical and non-pharmaceutical interventions. We use mathematical model to assess the impact of vaccination, antiviral and other non-pharmaceutical control strategies (quarantine, isolation etc.) and explore the optimal control strategy. Vaccination and antiviral drugs are the two most effective pharmaceutical interventions used for control of an infectious disease. We study the effect of various kinds of immunity level, viz, partial or fully protective; temporary or permanent, leaky or polarized.

Media coverage and fast information flow has great impact on psychological behavior of people. We use mathematical model to study the role of media coverage in the infectious disease dynamics.

Numerous numerical simulations are performed taking biologically relevant parametric values to illustrate the theoretical findings as well as to demonstrate the effect of different strategic parameters on level of infection.

❖ Research article published in **international journals (04):**

1. **Sahu, Govind Prasad**, & Dhar, Joydip (2015). Dynamics of an SEQIHRS epidemic model with media coverage, quarantine and isolation in a community with pre-existing immunity. *Journal of Mathematical Analysis and Application*, 421(2), 1651-1672. (SCI indexed, Impact Factor: 1.119).
2. **Sahu, Govind Prasad**, & Dhar, Joydip (2012). Analysis of an SVEIS epidemic model with partial temporary immunity and saturation incidence rate. *Applied Mathematical Modelling*, 36(3), 908–923 (SCI indexed, Impact Factor: 2.158).
3. Chaudhary, M., Dhar, Joydip, & **Sahu, Govind Prasad** (2013). Mathematical model of depletion of forestry resource : effect of synthetic based industries. *World Academy of Science, Engineering and Technology: International Journal of Biological Sciences*, (4), 798–802.
4. Dhar, Joydip, Sharma, A. K., **Sahu, Govind Prasad**, & Bhatti, H. S. (2011). Mathematical modelling and analysis of viral disease outbreak with partial immunity and incubation period. *Bio - Physics*, 37, 3691–3695.

❖ Research article presented in **international conference (04):**

1. Sahu, Govind Prasad & Dhar, J., "On the dynamics of an epidemic model with partial immunity, imperfect vaccine and media coverage" International Conference on Mathematical Sciences and Applications (ICMSA-2018) help at Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., India, during February 23-25, 2018.
2. H Singh, J Dhar, HS Bhatti, Govind Prasad Sahu, "Dynamical behavior of SIRS epidemic model with media awareness as control strategy", International Journal of Infectious Diseases 45(2016), 286.
3. Sahu, Govind Prasad, & Dhar, J., "Analysis of an SEIVS Epidemic Model with Polarized Partial Temporary and Pre-existing Immunity" in 19th Annual cum 4th International Conference of Gwalior Academy of Mathematical Sciences (GAMS) on "Advances in Mathematical Modeling to Real World Problems" held at SVNIT Surat, Gujrat, India, during October 3-6, 2014.
4. Sahu, Govind Prasad, & Dhar, J., "Hopf-Bifurcation and Stability of an Epidemic Model with Incubation Period and Delay" in 6th Annual cum 2nd International conference of Gwalior Academy of Mathematical Sciences (GAMS) at S. S. Dempo College of Commerce and Economics, Goa, Sep 2011.

❖ Research article presented in **national conferences (08):**

1. Sahu, Govind Prasad, & Dhar, J., "Network Modeling of Infectious Disease Dynamics", in the National Seminar on Applications of Graph & Network in Computational Studies, Bioinformatics & Engineering And their Technical Terminology at Jawaharlal Nehru University, New Delhi, India, during March 12-14, 2018.
2. Sahu, Govind Prasad, & Dhar, J., "Assessing the impact of awareness through media coverage on the transmission dynamics of an infectious disease", National Conference

on Advances in Mathematical Sciences at MNNIT, Allahabad, INDIA, during October 5-7, 2012.

3. Sahu, Govind Prasad, & Dhar, J., "Backward Bifurcation in an Epidemic Model with Saturation Incidence Rate and Leaky Vaccine" in the National Conference on Mathematical Modelling and Computer Simulation at Bhabha Group of Institution, Kanpur, INDIA, during July 7-9, 2011 under the auspicious of The Indian Society for Mathematical Modelling and Computer Simulation (ISMMACS).

4. Sahu, Govind Prasad, & Dhar, J., "An Epidemic Model with Nonlinear Incidence Rate and Vaccination" in National conference on Present Trends in Mathematics and its Application (PTMA-2011) on April 23, 2011 at Gwalior Engineering College, Gwalior, INDIA, under the auspicious of The Indian Society for Mathematical Modelling and Computer Simulation (ISMMACS).

5. Sahu, Govind Prasad, & Dhar, J., "Analysis of an SVEI epidemic model with vaccination and saturation incidence rate" at 2nd Workshop and Conference on Modelling Infectious Diseases organized by IMSc Chennai and IMI IISC Bangalore, INDIA, from September 20-22, 2010.

6. Sahu, Govind Prasad, & Dhar, J., "A Model of Disease Outbreak with Immunity and Delayed Incubation" at Platinum Jubilee 75th Annual Conference of Indian Mathematical Society, in the Kalasalingam University, Anand Nagar, Krishnankoil, INDIA, during December 27-30, 2009. (The Mathematics Student, Indian Mathematical Society, Vol. 78, Nos. 1-4, (2009).

7. Sahu, Govind Prasad, & Dhar, J., "A Model of Disease Outbreak with Immunity and Incubated Populations" at National conference on 'Mathematical modeling and Simulation' at ABV-IIITM, Gwalior, INDIA (January 9-11, 2009).

8. Sahu, Govind Prasad, & Dhar, J., "Analysis of an Epidemic Model with Immunity and Delay in Incubated Class" in 5 days programme on "National Meet of Research Scholars in Mathematical Sciences-2009" at Department of Mathematics, IIT Roorkee, INDIA, from December 21-24, 2009.

❖ National/International Workshop/Short Term Course/ Symposia Attended(11):

1. Attended 10 days *National Workshop cum Training Programme on:* **Dynamical System: Analysis and Applications** sponsored by DST Centre for Interdisciplinary Mathematical Sciences at Banaras Hindu University (BHU) during October 22-31, 2009.

2. Attended 5 days programme on **National Meet of Research Scholars in Mathematical Sciences-2009** at Department of Mathematics, IIT Roorkee, during December 21-24, 2009.

3. Attended 5 days MHRD/AICTE sponsored short term training programme on **Modeling & Simulation in Applied Sciences and Engineering (MSASE-09)** at ABV – Indian Institute of IT & Management, Gwalior, during December 8-12, 2009.

4. Attended 5 days programme *"Biomathematics and Computer Application"* under continuing education programme of DRDO held at DRDE, Gwalior during February 15-19, 2010.

5. Attended one day workshop on **How to get published in Internationally Refereed Journals: A Practical Guide** at ABV – Indian Institute of IT & Management, Gwalior, on March 21, 2010.

6. Attended 10 days **2nd IMSc Workshop & Conference on Modeling Infectious Diseases** sponsored by IMSc Chennai and IISc Bangalore at The Institute of Mathematical Sciences (IMSc) Chennai during September 13-22, 2010.

7. Attended 21 days **DST – SERC School on Nonlinear Dynamics** at Indian Institute of Science Education and Research (IISER) Pune, during December 4-24, 2011.

8. Attended 8 days **An International Workshop on Nonlinear Dynamics** at Bhabha Group of Institutions, Kanpur (U.P.) during February 9-16, 2012.

9. Attended 5 days DST sponsored **Advanced Level Workshop on Differential Equations in Ecology & Epidemiology** *Under the Auspices of National Program on Differential Equations: Theory, Computation and Applications (NDPE-TCA)* at IIT Roorkee during October 10-14, 2012.

10. Attended 6 days DST sponsored *National Training Programme on Soft Computing Techniques for Optimization* held at ABV – Indian Institute of Information Technology & Management, Gwalior during March 4-9, 2013.
11. Attended 4 days DBT, Newton Bhabha Fund of British Council, CESME, IISER Pune and Pt. Ravishankar Shukla University, Raipur Sponsored **The STEM Teacher Training Workshop on Research Based Pedagogical Tools** held at Pt. Ravishankar Shukla University, Raipur (C.G.) during October 6-9, 2017.

Declaration

I hereby declare that the statements made above are true to the best of my knowledge and belief.

Date: 13/07/2018
Place: Raipur, India   **[Dr Govind Prasad Sahu]**