



Dr. Vikram Singh
Assistant Professor

Contact Details:

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Academic Qualification:

M.Sc. (Physics), A.P.G.D. (Bioinformatics),
Ph.D. (Computational and Systems Biology)

Positions Held:

- At the Centre for Computational Biology and Bioinformatics, Central University of Himachal Pradesh, Dharamshala: **Assistant Professor**. (November, 2012 – till date)
- At the Department of Computer Science, Jamia Millia Islamia, New Delhi: **Guest Lecturer**. (July, 2012 – November, 2012)
- At the Department of Physics, Shivaji College, University of Delhi, New Delhi: **Assistant Professor (ad-hoc)**. (January, 2012– May 2012)
- At the Department of Biosciences, Jamia Millia Islamia, New Delhi: **Guest Lecturer**. (October, 2011 to March, 2012)

Specialisation:

- Computational Systems Biology
- Computational Genomics

Research Interest:

Systems Modelling:

- Understanding the properties of synchronization, multistability and multirhythmicity in the networks of coupled genetic oscillators.
- Exploring roles of noise at the cellular level.

Sequence Analysis:

- Finding universal spectral features of genomic DNA sequences and developing algorithms for identification of coding and non-coding genes.
- Searching evolutionary patterns in gene and genome length distributions.

Publications:

1. Spectral analysis of long noncoding RNAs **V Singh** and R Ramaswamy, International Conference on BioInformatics and Computational Biology, BICB 2011, B31 - B38.
2. Stochastic synchronization of circadian rhythms RKB Singh, **V Singh** and R Ramaswamy, Journal of Systems Science & Complexity 2010; 23: 978 - 988.
3. Synchronization of coupled repressilators via quorum sensing **V Singh**, AS Mer, R Pandey, A Nandi and R Ramaswamy, International Workshop on Physics In Biology: A Synergy (IWPBS) 2007; 117 - 125.

Research Projects Completed/Ongoing: Nil

MPhil/PhD Supervised/Supervising: PhD Supervising:
• Gagandeep Singh

Participation in Seminars/Conferences:

Oral presentations at various conferences/workshops:

- Delivered lectures at the workshop on “Applications of Bioinformatics” held at Kumaun University, Nainital, 29th August – 01st September 2007.
- Gave talks at the Dynamics Day Delhi conferences 2008, 2009.
- Gave talk at the national workshop on “Physics of DNA” held at Banaras Hindu University, Varanasi, 11th -13th August 2010.
- Gave an oral presentation in the “International Conference on BioInformatics and Computational Biology” (BICB 2011), Singapore, 28th February – 1st March 2011.
- Accepted an oral presentation at the “Genomics Complexity” (A satellite meeting of “European Conference on Complex Systems' 2012”), Brussels, 3rd - 7th September 2012. (could not attend)

Conferences attended (excluding above mentioned):

- International Conference on Bioinformatics, New Delhi, 18th - 20th December 2006.
- International Workshop on Complex Dynamics of Physiological Systems: From Heart to Brain, CDPS 2007, Presidency College, Kolkata, 11th - 15th February 2007.
- DST SERC school on Nonlinear Dynamics, Delhi University, Delhi, 7th - 25th December 2009.
- International Conference on Evolution of Complex Networks, Indian Institute of Science, Bangalore, 13th - 15th January 2010.
- Short course on “Introduction to Immunology for Physical Scientists and Engineers” by Prof. Arup Chakraborty, IIT Bombay, 25th - 27th October 2010.
- Dynamics Day Delhi at Jamia Millia Islamia, New Delhi, 10th November 2012.

Membership of Learned Societies/ Professional Bodies: -

Awards & Honours Received:

- Qualified National Eligibility Test with Junior Research Fellowship in Physics. (June, 2005)
- National Merit Scholarship, Department of Biotechnology, India. (July, 2005 to April, 2006)
- Junior and Senior Research Fellowship, University Grants Commission, India. (August, 2006 to July, 2011)
- Senior Research Fellowship (Extended), Department of Biotechnology, India. (September, 2011 to December 2011)
- Best paper award for the paper “Spectral analysis of long noncoding RNAs” in the International Conference on Bioinformatics and Computational Biology (BICB 2011), Singapore, 28th February - 1st March 2011.
- Best paper award of the year 2010 for the paper “Stochastic synchronization of circadian rhythms” at the “Annual Open Day” of School of Computational & Integrative Sciences, JNU, 25th April 2011. (Jointly with Ms. Candida Vaz)

Others: -