

MAHASHWETA BASU

CONTACT

3104E, Biomolecular Sciences Building, College Park, MD 20742
Email: mbasu@umiacs.umd.edu

EDUCATION

- 2014-present** **Postdoctoral Research Associate** in Center for Bioinformatics and Computational Biology, University of Maryland, College Park.
- 2008- 2014** **Ph.D.** from **Saha Institute of Nuclear Physics**, Kolkata, India
Thesis Title: **MicroRNA co-target networks : structure, universality and evolution.**
- 2007-2008** **Post. M. Sc.** Associateship course, Saha Institute of Nuclear Physics, Kolkata.
Project title: Kinetics of Enzyme Reaction,
- 2005-2007** **M. Sc in Physics, University of Calcutta, India**
- 2002-2005** **B. Sc in Physics, Bethune College, University of Calcutta, India**

LIST OF PUBLICATIONS

- Perturbed cellular pathways post spinal cord injury reflect the physiological trauma management approaches and regeneration attempts in a molecular level*, M. B. Sengupta, **M. Basu**, S. Ishwarari, K. K. Mukhopadhyay, K. Sardar, B. Acharyya, P. K. Mohanty and D. Mukhopadhyay, **PLOS ONE 9(10), e110885 (2014)**.
- Link-weight distribution of microRNA co-target networks exhibit universality*, **M. Basu**, N. P. Bhattacharyya, P. K. Mohanty, **EPL, 105, 28007 (2014)**.
- Universality splitting in distribution of number of miRNA co-targets*, **M. Basu**, N. P. Bhattacharyya, P. K. Mohanty, **Syst and Synt Biol 8, 21 (2014)**.
- Comparison of Modules of Wild Type and Mutant Huntingtin and TP53 Protein Interaction Networks: Implications in Biological Processes and Functions*, **M. Basu**, N. P. Bhattacharyya, P. K. Mohanty, **PLOS ONE 8(5), e64838 (2013)**.
- Absorbing phase transition in energy exchange models*, U. Basu, **M. Basu**, P. K. Mohanty, **Eur. Phys. J. B 86, 236 (2013)**.
- Fixed-Energy Sandpiles Belong Generically to Directed Percolation*, **M. Basu**, U. Basu, S. Bandyopadhyay, P. K. Mohanty and H. Hinrichsen, **Phys. Rev. Lett. 109, 015702 (2012)**.
- Modules of human micro-RNA co-target network*, **M. Basu**, N. P. Bhattacharyya, P. K. Mohanty, **J. Phys.: Conf. Ser. 297, 012002 (2011)**.

8. *A novel approach to discontinuous bond percolation transition*, U. Basu, **M. Basu**, A. Kundu, P. K. Mohanty, **Euro. Phys. Lett.** **94**, 46002 (2011).
9. *Asymmetric Simple Exclusion Process on a Cayley Tree*, **M. Basu**, P. K. Mohanty, **J. Stat. Mech.** **P10014** (2010).
10. *Two-dimensional random walk in a bounded domain*, **M. Basu**, P. K. Mohanty, **Euro. Phys. Lett.** **90**, 50005 (2010).

PRESENTATIONS

1. Presented a poster titled Differential protein interaction networks at *EMBO Practical Course on Computational biology: From genomes to cells and systems* held at **Turkey**, Sep 29 -Oct 4, 2013.
2. Presented a talk titled Differential protein interaction networks at the *Department of Physics, University of Calcutta*, **India**, July 2013.
3. Presented a poster titled Mutations alter protein interactions leading to loss and gain of biological functions at the *Kolkata International School cum conference on systems biology* organised by Bose Institute and Saha Institute of Nuclear Physics, **Kolkata, India**, 29th Dec 2012 - Jan 3rd, 2013.
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4. Presented a poster titled Human microRNA co-target network at the international conference *STATPHYS Kolkata VII* held at the Saha Institute of Nuclear Physics, **Kolkata, India**, Nov 26 - Nov 30, 2010.
5. Presented a poster titled University in microRNA co-target network at the international conference *From Physics 2 Life: a workshop and school on biological physics* held at Weizmann Institute of Science, **Israel**, May 23 -May 27, 2010.
6. Presented a poster titled Two-dimensional random walk in a bounded domain at ICTS program on Non-Equilibrium Statistical Physics held at the Indian Institute of Technology, **Kanpur, India**, Jan 30 -Feb 08, 2010.

CONFERENCES ATTENDED

1. Summer School on Integrated structural cell biology from molecules to cells and organisms, thinking out of the box held at **Les Houches, France**, July 7 – August 1 2014.
2. EMBO Practical Course on Computational biology: From genomes to cells and systems held at **Turkey**, Sep 29 -Oct, 4 2013.
3. From Physics 2 Life: a workshop and school on biological physics held at Weizmann Institute of Science, **Israel**, May 23 -May 27, 2010.
4. The 2nd IMSc Complex Systems School held at The Institute of Mathematical Sciences, **Chennai, India** in cooperation with the Santa Fe Institute, Santa Fe, USA, Jan 4 -Jan 29, 2010.
5. Quantum Phase Transition and Dynamics : Quenching, Annealing and Quantum Computation,

held at Saha Institute of Nuclear Physics, **Kolkata, India**, Feb 3 -Feb 7, 2009.

6. Systems Biology and its use held at Department of Biochemistry and Biophysics, University of Kalyani, **India**, Nov 18 - Nov 22, 2008.
7. Summer School in Biological Physics held at Harish-Chandra Research Institute, Allahabad, **India**, May 26 -June 7, 2008.
8. Recent Trends in Condensed Matter-II held at Saha Institute of Nuclear Physics, Kolkata, **India**, March 27 -March 29, 2008.

RESEARCH SKILLS

Computer Languages C, FORTRAN, AWK, Mathematica; Cytoscape, Lapack.

Databases BioGRID, miRBase, MicroCosm Targets, GeneCodis, GeneDecks, Panther.

REFERENCES

1. **Prof. Pradeep Kumar Mohanty**
Condensed Matter Physics Division
Saha Institute of Nuclear Physics
1/AF Bidhannagar, Kolkata 700064, INDIA.
Email : pk.mohanty@saha.ac.in
2. **Prof. Nitai Pada Bhattacharyya**
Crystallography and Molecular Biology Division
Saha Institute of Nuclear Physics
1/AF Bidhannagar, Kolkata 700064, INDIA.
Email : nitaipada.bhattacharya@saha.ac.in
3. **Prof. Debashis Mukhopadhyay**
Structural Genomics Division
Saha Institute of Nuclear Physics
1/AF Bidhannagar, Kolkata 700064, INDIA.
Email : debashis.mukhopadhyay@saha.ac.in