

Devesh Bhimsaria, Ph.D.

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Education:

Jan 2012 - Dec 2016	Master of Science (M.S.) and Ph.D. Department of Electrical & Computer Engineering University of Wisconsin–Madison (GPA 4.0/4.0)
Jul 2005 - May 2010	B.Tech. and M.Tech. Department of Electronics & Communication Engineering Indian Institute of Technology, Roorkee (GPA 8.83/10 with Rank1)

Work Experience:

Aug 2018 onwards	Research Scientist (Bio Informatics)– Studying DNA binding affinities of proteins and synthetic molecules for targeted drug delivery. Clients/Collaborations – St. Jude Children's Research Hospital–Memphis (Tennessee), Design Therapeutics–Carlsbad (California), University of Puerto Rico at Rio Piedras (San Juan), Indian Institute of Technology (IIT) Kharagpur, Indian Institute of Science (IISc) Bangalore, University of Wisconsin–Madison and other.
Jan 2017 - Jul 2018	Postdoctoral research with Professor Aseem Ansari, University of Wisconsin–Madison – Explored submaximal binding site preferences of transcription factors.
Jan 2012 - Dec 2016	Graduate research with Professor Parmesh Ramanathan, University of Wisconsin–Madison – Thesis: Computational methods for detailing DNA binding affinities and differences among related proteins.
Mar 2011 - Dec 2011	Research Associate, University of Wisconsin–Madison – Modeled sequence specificity of RNA binding proteins.
Jul 2010 - Mar 2011	Associate Applications Developer at Oracle India Pvt. Limited, Bangalore.
May 2009 - May 2010	M. Tech. dissertation with Professor D. K. Mehra, IIT Roorkee – Created efficient detection algorithms for V-Blast schemes in MIMO wireless communication.
Aug 2008 - Dec 2008	Research with Professor Dharmendra Singh, IIT Roorkee – Modeled for retrieval of target parameter using artificial neural networks.
May 2008 - Jul 2008	Khorana scholar in the lab of Professor Aseem Ansari, University of Wisconsin–Madison – Created specificity landscape to analyze protein–DNA binding datasets.
Jan 2007 - Aug 2007	Research with Professor Ankush Mittal, IIT Roorkee – Designed a protein classifier using Support Vector Machine (SVM).

Notable Honors and Awards:

- 2017 Harold A. Peterson Distinguished Dissertation Award for Ph.D. dissertation by Department of Electrical and Computer Engineering, University of Wisconsin–Madison

- Academic achievement award for securing 4.0/4.0 GPA in M.S. + Ph.D. program (University of Wisconsin–Madison)
- Medal for obtaining rank 1 and highest GPA in Integrated Dual Degree (B.Tech. + M.Tech.) program, ECE (IIT Roorkee)
- 2008 Khorana Scholarship

Research publications (*-equal contribution):

Published

1. Finn P.B.*, **Bhimsaria D.***, Ali A., Eguchi A., Ansari A.Z., and Dervan P.B. (2020) Single position substitution of hairpin pyrrole-imidazole polyamides imparts distinct DNA-binding profiles across the human genome. **PLoS ONE** 15(12): e0243905. (Impact factor: 3.24)
2. Liu X., Gupta S.T.P., **Bhimsaria D.**, Reed J.L., Rodríguez-Martínez J.A., Ansari A.Z., and Raman S. (2019) De novo design of programmable inducible promoters. **Nucleic Acids Research**, 47, 10452–10463. (Impact factor: 16.97)
3. Yella V.R.*, **Bhimsaria D.***, Ghoshdastidar D., Rodríguez-Martínez J.A., Ansari A.Z., and Bansal M. (2018) Flexibility and structure of flanking DNA impact transcription factor affinity for its core motif. **Nucleic Acids Research**, 46, 11883–11897. (Impact factor: 16.97)
4. **Bhimsaria D.**, Rodríguez-Martínez J.A., Pan J., Roston D., Korkmaz E.N., Cui Q., Ramanathan P., and Ansari A.Z. (2018) Specificity landscapes unmask submaximal binding site preferences of transcription factors. **Proceedings of the National Academy of Sciences of the United States of America**, 115, E10586–E10595. (Impact factor: 11.2)
5. Rodríguez-Martínez J.A.*, Reinke A.W.*, **Bhimsaria D.***, Keating A.E., and Ansari A.Z. (2017) Combinatorial bZIP dimers define complex DNA-binding specificity landscapes. **eLife** 6, e19272. (Impact factor: 8.14)
6. Eguchi A., Wleklinski M.J., Spurgat M.C., Heiderscheit E.A., Kropornicka A.S., Vu C.K., **Bhimsaria D.**, Swanson S.A., Stewart R.M., Ramanathan P., Kamp T.J., Slukvin I.I., Thomson J.A., Dutton J.R., and Ansari A.Z. (2016) Reprogramming cell fate with a genome-scale library of artificial transcription factors. **Proceedings of the National Academy of Sciences of the United States of America**, 113 (51) E8257-E8266. (Impact factor: 11.2)
7. Erwin G.S., Grieshop M.P.*, **Bhimsaria D.***, Do T.J., Rodríguez-Martínez J.A., Mehta C., Khanna K., Swanson S.A., Stewart R., Thomson J.A., Ramanathan P., and Ansari A.Z. (2016) Synthetic genome readers target clustered binding sites across diverse chromatin states. **Proceedings of the National Academy of Sciences of the United States of America**, 113 (47) E7418-E7427. (Impact factor: 11.2)
8. Erwin G.S., Grieshop M.P., **Bhimsaria D.**, Eguchi A., Rodríguez-Martínez J.A., and Ansari A.Z. (2016) Genome-wide mapping of drug-DNA interactions in cells with COSMIC (Crosslinking of Small Molecules to Isolate Chromatin). **Journal of Visualized Experiments**, (107), e53510. (Impact factor: 1.4)
9. Erwin G.S., **Bhimsaria D.**, Eguchi A., and Ansari A.Z. (2014) Mapping polyamide-DNA interactions in human cells reveals a new design strategy for effective targeting of genomic sites. **Angewandte Chemie** (International Ed. in English), 53(38), 1–6. (Impact factor: 15.37)
10. Meyer P., Cokelaer T., Chandran D., Kim K.H., Loh P.R., Tucker G., Lipson M., Berger B., Kreutz C., Raue A., Steiert B., Timmer J., Bilal E., **DREAM 6&7 Parameter Estimation consortium**, Sauro H.M., Stolovitzky G., and Saez-Rodriguez J. (2014) Network topology and parameter estimation: from experimental design methods to gene regulatory network kinetics

using a community based approach. **BioMed Central Systems Biology** 8(1), 13. (Impact factor: 2.05)

11. Campbell Z.T., **Bhimsaria D.**, Valley C.T., Rodriguez-Martinez J.A., Menichelli E., Williamson J.R., Ansari A.Z., and Wickens M. (2012) Cooperativity in RNA-Protein Interactions: Global Analysis of RNA Binding Specificity. **Cell Reports**, 1(5), 570–581. (Impact factor: 9.42)
12. Tietjen J.R., Donato L.J., **Bhimsaria D.**, and Ansari A.Z. (2011) Sequence-specificity and energy landscapes of DNA-binding molecules. *Methods in Enzymology*, 497, 3–30. (Impact factor: 2.0)
13. Carlson C.D., Warren C.L., Hauschild K.E., Ozers M.S., Qadir N., **Bhimsaria D.**, Lee Y, Cerrina F, and Ansari A.Z. (2010) Specificity landscapes of DNA binding molecules elucidate biological function. **Proceedings of the National Academy of Sciences of the United States of America**, 107(10), 4544–9. (Impact factor: 11.2)
14. Singh D., Srivastava V., Pandey B., and **Bhimsaria D.** (2009) Application of neural network with error correlation and time evolution for retrieval of soil moisture and other vegetation variables. **Progress In Electromagnetics Research**, 15(15), 245–465. (Impact factor: 1.90)

Teaching and Other Experiences:

- Teaching Assistant 2009-2010 – Electronics Lab, IIT Roorkee.
- Teaching Assistant 2009-2010 – Fundamentals of Electronics, IIT Roorkee.
- Establishing non-profit program – Sci-ROI (Science and Research opportunities in India), India.

Selected Conferences:

- Har Gobind Khorana Memorial Symposium on Genes, Genomes & Membrane Biology, National Agri-Food Biotechnology Institute, Mohali, India (Dec. 03-05, 2017)
- 19th International Conference on DNA Computing and Molecular Programming (DNA19), Arizona State University, Tempe, AZ, USA (Sept. 22-27, 2013)
- Rules of protein-DNA recognition: computational and experimental advances, Banff International Research Station (BIRS) for Mathematical Innovation and Discovery, Banff, Alberta, Canada (Jun. 16-21, 2013)
- 18th International Conference on DNA Computing and Molecular Programming (DNA18), Aarhus University, Aarhus, Denmark (Aug. 13-17, 2012)
- Poster at- "From Innovations in Nucleic Acids Research to Regulation of Biological Processes" In Honor of Professor Uttam RajBhandary, Indian Institute of Science, Bangalore, India (Dec. 17-19, 2011)

References:

Dr. Parmesh Ramanathan

Professor in Department of Electrical & Computer Engineering
University of Wisconsin–Madison, Madison, WI (USA)
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Dr. Aseem Z. Ansari

Founder/Director of the Khorana and S.N. Bose Programs
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Dr. Peter Dervan

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