

Chitvan Mittal, Ph.D

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Education

2015 **PhD in Biochemistry**, Iowa State University, USA
2009 **M.Sc in Biochemistry**, University of Delhi, India
2007 **B.Sc:** Biochemistry, Delhi University, India

Research Experience

2016 – present **Postdoctoral Research** with Dr. B. Franklin Pugh (Cornell & Penn State University)

- Designed and leading ongoing research project on fundamental mechanisms of transcription and post-transcriptional regulatory mechanisms in yeast
- Leading cross-institutional collaborations on understanding transcriptional regulation in mouse and yeast systems
- Mentored graduate rotation students and senior undergraduates in the research lab towards successful training and project completion
- Reviewed multiple grants and manuscripts of peers in the field with the PI

2009 – 2016 **Doctoral Research** with Dr. Michael Shogren-Knaak (Iowa State University)

- Developed a novel method to effectively quantitate post-translational modifications on individual nucleosomes, in an array of nucleosomal substrates. This tool overcomes limitations of previously used approaches and is highly versatile.
- Identified key determinants of chromatin structure in modulating SAGA-mediated nucleosome acetylation.

2007 – 2009 **Master's Research** with Dr. Suneel Kateriya (University of Delhi)

- Characterized the properties of the LOV domain of a novel photoreceptor from *Ostreococcus tauri*, using a variety of biochemical and biophysical approaches

Select Research Publications

1. Gallego, L. D. *, Schneider, M. *, **Mittal, C. ***, Romanauska, A., Carrillo, R. M. G., Schubert, T., Pugh, B. F. and Kohler, A. (2020) Liquid-liquid phase separation directs ubiquitination of gene body nucleosomes. *Nature*, 579, 592-597 (* - **equal contribution**)
2. **Mittal, C.**, Rossi, M. J., and Pugh, B. F. (2019) High similarity among ChEC-seq datasets. *Molecular Cell*, *under review*
3. **Mittal, C.**, Olson, S. J., and Shogren-Knaak, M. A. (2018) Distinct requirements of linker DNA and transcriptional activators in promoting SAGA-mediated nucleosome acetylation. *Journal of Biological Chemistry*, 293: 13736-13749 **PMID: 30054274**
4. Vinayachandran, V., Reja, R., Rossi, M. J., Park, B., Rieber, L., **Mittal, C.**, Mahony, S., and Pugh, B. F. (2018) Widespread and precise reprogramming of yeast protein-genome interactions in response to heat shock. *Genome Research*, 28: 1-10 **PMID: 29444801**

5. Young, I. A., **Mittal, C.**, and Shogren-Knaak, M. A. (2016) Expression and purification of histone H3 proteins containing multiple sites of lysine acetylation using nonsense suppression. *Protein Expression and Purification*, 118: 92-97 **PMID: 26481273**
6. **Mittal, C.**, Blacketer, M. J., and Shogren-Knaak, M. A. (2014) Nucleosome acetylation sequencing to study the establishment of chromatin acetylation. *Analytical Biochemistry* 457: 51-58 **PMID: 24769374**

Independent Scientific Roles

- 2018 – present Independent scientific reviewer at *Protein Expression and Purification* journal, Successfully completed 14 reviews.
- 2019 Scientific consultant at Rodan and Fields

Leadership and Organization Positions

- 2017 Chair, Penn State Postdoc Society, PSU
- 2017 National Postdoc Association,
- 2015 Member of American Association of Cancer Research
- 2012 Preparing Future Faculty Program, ISU
- 2011 Academic Chair of the Graduate Student Organization, ISU

Honors and Awards

- 2020 Featured scholar, Global Penn State, PSU
- 2019 Outstanding contribution in reviewing, *Protein Expression and Purification Journal*
- 2018 Editor's pick-top rated paper in *JBC* PMID: 30054274
- 2014 Teaching excellence award, Department of Biochemistry, ISU
- 2013 Associate Scholar of Professional Future Faculty Program, ISU
- 2011 Best Poster Presentation at the 6th STUPKA Symposium, ISU
- 2010 Postgraduate fellowship, Delhi University

Select Conferences and Poster Presentations

- 2019 Mechanisms of eukaryotic transcription, Cold Spring Harbor Meeting
- 2018 Transcription regulation by chromatin and RNA polymerase II, ASBMB meeting, Utah
- 2017 Mechanisms of eukaryotic transcription, Cold Spring Harbor Meeting
- 2015 American Association of Cancer Research, Atlanta, Georgia

Teaching Experiences

- 2012 – 2014 **Teaching Assistant**, Molecular Biophysics and Laboratory in Molecular Biophysics – course designed to teach biophysical techniques to probe the structure of biomolecules, ISU
- 2012 – 2014 **Guest recitation lectures** for Laboratory in Molecular Biophysics and Advanced Student Seminar, ISU
- 2014 **HHMI Facilitator** for The Principles of Genetics Biology, Undergraduate lab section – leading group discussions and fostering critical thinking and hypothesis testing among undergraduates, ISU

References

Dr. B. Franklin Pugh

Professor in Molecular Biology and Genetics, Cornell University

Email – fp265@cornell.edu

Dr. Shaun Mahony

Assistant Professor of Biochemistry and Molecular Biology, PSU

Email – mahony@psu.edu

Dr. Michael Shogren-Knaak

Associate Professor of Biochemistry Biophysics and Molecular Biology, ISU

Email – knaak@iastate.edu