

Premashis Manna

ASSISTANT PROFESSOR

The Ohio State University

Department of Chemistry & Biochemistry

McPherson Chemical Laboratory

140 W 18th Ave, Columbus, OH 43210, USA

✉ manna.35@osu.edu | 🏠 www.premashismanna.com

Education

University of Colorado Boulder

Boulder, USA

PH.D. CHEMISTRY

2012-2017

- Advisor: Dr. Ralph Jimenez
- Thesis: Development and Characterization of Improved Red Fluorescent Protein Variants.

Indian Institute of Technology at Kanpur

Kanpur, India

M.SC. CHEMISTRY

2010 - 2012

- Advisor: Dr. Madhav Ranganathan
- Thesis: Spatio-temporal Modeling of Calcium Fluctuation in Electrically Excitable Cells.

Ramakrishna Mission Vidyamandira (University of Calcutta)

Belur, India

B.SC. CHEMISTRY (HONS.)

2007 - 2010

Professional Experience

- 2025 - **Assistant Professor**, The Ohio State University, Columbus, OH, USA
- 2022-2024 **Senior Postdoctoral Scholar**, Department of Chemical and Biological Physics, Weizmann Institute of Science, Rehovot, Israel, Advisor: Prof. Gilad Haran
- 2018-2022 **Postdoctoral Scholar**, Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, USA, Advisor: Prof. Gabriela S. Schlau-Cohen
- 2012-2017 **Research Assistant**, Department of Chemistry & Biochemistry, University of Colorado Boulder, Advisor: Dr. Ralph Jimenez

Awards & Fellowships

- 2023 **Faculty Postdoctoral Excellence Fellowship**, Weizmann Institute of Science
- 2023 **Senior Postdoctoral Fellowship**, Weizmann Institute of Science
- 2012 **Best Master's thesis award, Class of 2012**, Indian Institute of Technology at Kanpur
- 2011 **Best poster presentation award at the Summer Undergraduate Research Grant for Excellence (SURGE)**, Indian Institute of Technology at Kanpur

Peer-reviewed Publications

12. **Premashis Manna**, Srijit Mukherjee, and Ralph Jimenez, "Disentangling photobleaching pathways in mCherry variants provide selection strategies to develop photostable fluorescent proteins", (in preparation)
11. Jiajia Guo, Xuyan Chen, **Premashis Manna**, Xingcheng Lin, Madelyn N. Scott, Wei Jia Chen, Mikaila Hoffmann, Bin Zhang, Gabriela S. Schlau-Cohen, "Single-molecule acceptor rise time (smART) FRET for nanoscale distance sensitivity", (under review). doi: <https://doi.org/10.1101/2023.03.15.532809>
10. **Premashis Manna***, Madeline Hoffmann, Thomas Davies, Matthew P. Johnson and Gabriela S. Schlau-Cohen, "Energetic driving force for LHCII clustering in plant membranes", *Science Advances*, 2023, 9, ead0807 (*joint first and corresponding author).

9. Srijit Mukherjee, **Premashis Manna**, Nancy Douglas, Prem P. Chapagain and Ralph Jimenez, “Conformational dynamics of mCherry variants: a link between sidechain motions and fluorescence brightness”, *The Journal of Physical Chemistry B*, 2023, 127 (1), 52–61.
8. Srijit Mukherjee, **Premashis Manna***, Sheng-Ting Hung, Felix Vietmeyer, Pia Friis, Amy Palmer and Ralph Jimenez, “Directed evolution of a bright variant of mCherry: Suppression of non-radiative decay by fluorescence lifetime selections”, *The Journal of Physical Chemistry B*, 2022, 126, 4659–4668 (* joint first and joint corresponding author).
7. **Premashis Manna** and Gabriela S. Schlau-Cohen (2022), “Photoprotective conformational dynamics of photosynthetic light-harvesting proteins”, *BBA – Bioenergetics*, 2022, 1863(4), 148543.
6. **Premashis Manna**, Thomas Davies, Madeline Hoffmann, Matthew P. Johnson and Gabriela S. Schlau-Cohen, “Membrane-dependent heterogeneity of LHCII characterized using single-molecule spectroscopy”, *Biophysical Journal*, 2021, 120, 3091–3102.
5. Srijit Mukherjee, Sheng-Ting Hung, Nancy Douglas, **Premashis Manna**, Connor Thomas, Annika Ekrem, Amy E. Palmer and Ralph Jimenez, “Engineering of a brighter variant of the FusionRed fluorescent protein using lifetime flow-cytometry and structure guided mutations”, *Biochemistry*, 2020, 59, 3669–3682.
4. **Premashis Manna**, Sheng-Ting Hung, Srijit Mukherjee, Pia Friis, David Simpson, Maria Lo, Amy Palmer and Ralph Jimenez, “Directed Evolution of Excited State Lifetime and Brightness in FusionRed using a Microfluidic Sorter”, *Integrative Biology*, 2018, 10, 516–526.
3. Gary C.H. Mo, Brian Ross, Fabian Hertel, **Premashis Manna**, Xinxing Yang, Eric Greenwald, Chris Booth, Ashlee M. Plummer, Brian Tenner, Zan Chen, Yuxiao Wang, Eileen J. Kennedy, Philip A. Cole, Karen G. Fleming, Amy Palmer, Ralph Jimenez, Jie Xiao, Peter Dedecker and Jin Zhang, “Genetically-Encoded Biosensors for Visualizing Live-cell Biochemical Activity at Superresolution,” *Nature Methods*, 2017, 14, 427–434.
2. Kevin M. Dean, Lloyd M. Davis, Jennifer L. Lubbeck, **Premashis Manna**, Pia Friis, Amy E. Palmer and Ralph Jimenez, “High-speed multiparameter photophysical analyses of fluorophore libraries”, *Analytical Chemistry*, 2015, 87 (10), 5026–5030.
1. **Premashis Manna** and Ralph Jimenez, “Time and Frequency-Domain Measurement of Ground-State Recovery Times in Red Fluorescent Proteins,” *The Journal of Physical Chemistry B*, 2015, 119 (15), 4944–4954.

Presentations

- 2024 **Kolkata, India**, S. N. Bose National Centre for Basic Sciences
- 2024 **Columbus, OH**, The Ohio State University
- 2023 **Kolkata, India**, Indian Association for the Cultivation of Science
- 2023 **Trivandrum, India**, Celebrating 50 Years of FCS
- 2021 **Online, India**, National Workshop on Fluorescence and Raman Spectroscopy
- 2021 **Online, India**, Physical Chemistry Physical Biology Symposium
- 2021 **Online, USA**, Annual Meeting of the Biophysical Society
- 2020 **Kumbhalgarh, India**, Spectroscopy and Dynamics of Molecular Clusters (SDMC)
- 2018 **Kolkata, India**, S. N. Bose National Centre for Basic Sciences
- 2018 **Kharagpur, India**, IIT Kharagpur
- 2018 **Mohali, India**, IISER Mohali
- 2018 **Kalyani, India**, IISER Kolkata
- 2018 **Stanford, CA**, Stanford University
- 2018 **Eugene, OR**, University of Oregon
- 2018 **Cambridge, MA**, Massachusetts Institute of Technology
- 2018 **Seattle, WA**, University of Washington
- 2018 **Seattle, WA**, University of Washington
- 2016 **Seattle, WA**, 31st Congress of the International Society for Advancement of Cytometry
- 2015 **Los Angeles, CA**, Annual Meeting of the Biophysical Society

Teaching Experience

2025 AU **CHEM 6110, Survey of Analytical Instr.**, Instructor
2013 SP **General Chemistry - II**, Teaching Assistant
2012 AU **General Chemistry - I**, Teaching Assistant

OSU
CU Boulder
CU Boulder

Mentoring Experience

2025- **Melannie Furgason**, Senior Research Associate at OSU
2025- **Heman Kumar**, Postdoc at OSU
2025 - **Isaac Kuester**, Undergrad at OSU
2025 - **Aubrey Su**, Undergrad at OSU
2025 - **Henry K. Simon**, Undergrad at OSU
2025 - **Jordan Wroblewski**, Graduate student at OSU
2025 - **Grace Yoo**, Graduate student at OSU
2025 - **Gourab Das**, Graduate student at OSU
2025 - **Shivam Chaubey**, Graduate student at OSU
2025 **Stepan Dobrianskyi**, SURE summer intern at OSU
2025 **Shriya Biswas**, Summer Intern
2022-2024 **Mahran Shehadeh**, Graduate student at Weizmann Institute of Science
2019-2024 **Madeline Hoffmann**, Graduate student at MIT
2018-2022 **Thomas Davies**, Graduate student at University of Sheffield
2016-2017 **Srijit Mukherjee**, Graduate student at CU Boulder
2016-2017 **Samantha Allen**, Graduate student at CU Boulder

Outreach & Professional Development

SERVICE AND OUTREACH

Co-started a YouTube channel, **The Molecular Kitchen**, where I explain the science behind cooking and share aspects of my research life with the goal of inspiring the next generation to pursue scientific careers and develop a scientific temperament.

PEER REVIEW

Reviewer of *Advanced Optical Materials*, *Chemical Physics Letters*, *Scientific Reports*, etc.