

Thomas J. Pucadyil

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Educational Qualifications

- 2005 Ph.D., Centre for Cellular and Molecular Biology, Hyderabad, India.
- 1999 M.Sc. (Biochemistry), First Class, Maharaja Sayajirao University of Baroda, Vadodara, India.
- 1997 B.Sc. (Biochemistry), First Class, St. Xavier's College, Gujarat University, Ahmedabad, India.

Professional Positions

- 2021-2024 Rahul Bajaj Chair Professorship, Indian Institute of Science Education and Research, Pune, India
- 2021-present, Professor, Indian Institute of Science Education and Research, Pune, India
- 2019-2022, Chair, Biology Department, Indian Institute of Science Education and Research, Pune, India
- 2016-2019, Associate Professor, Indian Institute of Science Education and Research, Pune, India
- 2010-2016, Assistant Professor, Indian Institute of Science Education and Research, Pune, India
- 2007-10, Leukemia & Lymphoma Society Postdoctoral Fellow, The Scripps Research Institute, La Jolla, U.S.A.
- 2005-10, Postdoctoral Fellow, The Scripps Research Institute, La Jolla, U.S.A.
- 2004-05, NBRC Postdoctoral Fellow, Centre for Cellular and Molecular Biology, Hyderabad, India

Awards and Honors

- 2021 Rahul Bajaj Chair Professorship
- 2021 Fellow, Indian Academy of Sciences
- 2021 Fellow, Indian National Science Academy
- 2018 Shanti Swarup Bhatnagar Prize in Biological Sciences
- 2017 International Research Scholarship, Howard Hughes Medical Institute, U.S.A.
- 2017 DBT-Wellcome Trust India Alliance Senior Fellowship
- 2017 Member, Guha Research Conferences
- 2011 Associateship, Indian Academy of Sciences, Bangalore, India
- 2011 DBT-Wellcome Trust India Alliance Intermediate Fellowship

Research Grants

- 2022-27 DBT-Wellcome Trust India Alliance Team Science Grant
- 2022-25 DST-SERB SUPRA
- 2017-22 Howard Hughes Medical Institute's International Research Scholar's Grant
- 2017-22 DBT-Wellcome Trust India Alliance Senior Fellowship (relinquished)
- 2016-19 DST SERB
- 2011-16 DBT-Wellcome Trust India Alliance Intermediate Fellowship
- 2007-10 Career Development Grant, Leukemia & Lymphoma Society, New York, U.S.A.
- 2004-05 Postdoctoral Research Fellowship, National Brain Research Centre, New Delhi, India.

Patents

1. Jose, G., Pucadyil, T.J. (2020) A Novel Bifunctional Lipid Probe for Proximity Labelling-Based Identification of Membrane-Associated Proteins (United States Patent Application 16/891373)

Research Articles

1. Khurana, H., Baratam, K., Bhattacharyya, S., Srivastava, A., **Pucadyil, T.J.** (2023) Mechanistic analysis of a novel membrane-interacting variable loop in the pleckstrin-homology domain critical for dynamin function. *Proc. Natl. Acad. Sci. USA*. DOI: [10.1073/pnas.2215250120](https://doi.org/10.1073/pnas.2215250120).
2. Roy, K. and **Pucadyil, T.J.** (2022) Is Drp1 sufficient to catalyze membrane fission? *Proc. Natl. Acad. Sci. USA*. (Letter to Editor) DOI: [10.1073/pnas.2201709119](https://doi.org/10.1073/pnas.2201709119).
3. Roy, K., **Pucadyil, T.J.*** (2022). Metal-binding propensity in the mitochondrial dynamin-related protein. *Journal of Membrane Biology* DOI: [10.1007/s00232-022-00221-5](https://doi.org/10.1007/s00232-022-00221-5).
4. Andhare D.S., Khurana H., **Pucadyil T.J.*** (2022). Protein-protein interactions on membrane surfaces analysed using pull downs with supported bilayers on silica beads. *Journal of Membrane Biology* DOI: [10.1007/s00232-022-00222-4](https://doi.org/10.1007/s00232-022-00222-4).
5. Jose G.P., **Pucadyil T.J.*** (2020). PLiMAP: Proximity-Based Labeling of Membrane-Associated Proteins. *Current Protocols in Protein Sciences* DOI: [10.1002/cpps.110](https://doi.org/10.1002/cpps.110).
6. Jose, G.P., Gopan, S., Bhattacharyya, S., **Pucadyil, T.J.*** (2020). A facile, sensitive and quantitative membrane-binding assay for proteins. *Traffic* (selected for cover) DOI: [10.1111/tra.12719](https://doi.org/10.1111/tra.12719).
7. Kamerkar, S, Roy K, Bhattacharyya S, **Pucadyil, T.J.*** (2019). A screen for membrane fission catalysts identifies the ATPase EHD1. *Biochemistry* DOI: [10.1021/acs.biochem.8b00925](https://doi.org/10.1021/acs.biochem.8b00925).
8. Kamerkar, S.C., Kraus, F., Sharpe, A., **Pucadyil, T.J.***, Ryan, M.T.* (2018). Dynamin-related protein 1 has membrane constricting and severing abilities sufficient for mitochondrial and peroxisomal fission. *Nature Communications* DOI: [10.1038/s41467-018-07543-w](https://doi.org/10.1038/s41467-018-07543-w)
9. Deo, R., Kushwah, M.S., Kamerkar, S.C., Kadam, N.Y., Dar, S., Babu, K., Srivastava, A., **Pucadyil, T.J.*** (2018). ATP-dependent membrane remodeling links EHD1 functions to endocytic recycling. *Nature Communications* DOI: [10.1038/s41467-018-07586-z](https://doi.org/10.1038/s41467-018-07586-z)
10. Singh, P.K., Kapoor, A., Lomash, R.M., Kumar, K., Kamerkar, S.C., **Pucadyil, T.J.**, Mukhopadhyay, A. (2018). Salmonella SipA mimics a cognate SNARE for host Syntaxin8 to promote fusion with early endosomes. *Journal of Cell Biology* DOI: [10.1083/jcb.201802155](https://doi.org/10.1083/jcb.201802155)
11. Andhare, D., Holkar, S.S., **Pucadyil, T.J.*** (2018). SMrT Assay for Real-Time Visualization and Analysis of Clathrin Assembly Reactions. *Methods in Molecular Biology* DOI: [10.1007/978-1-4939-8719-1_12](https://doi.org/10.1007/978-1-4939-8719-1_12).
12. Natesan, R., Sreeja, K.K., Roychoudhuri, A., Eckmann, D.M., Ayyaswamy, P.S., Baumgart, T., **Pucadyil, T.**, Patil, S.V., Weaver, V.M., Radhakrishnan, R. 2017. Excess area dependent scaling behavior of nano-sized membrane tethers. *Physical Biology* DOI: [10.1088/1478-3975/aa9905](https://doi.org/10.1088/1478-3975/aa9905).
13. Dar, S., **Pucadyil T.J.*** (2017). The pleckstrin-homology domain of dynamin is dispensable for membrane constriction and fission. *Molecular Biology of the Cell* DOI: [10.1091/mbc.E16-09-0640](https://doi.org/10.1091/mbc.E16-09-0640).
14. Dar, S., Kamerkar, S.C., **Pucadyil, T.J.*** (2017). Use of the supported membrane tube assay system for real-time analysis of membrane fission reactions. *Nature Protocols* DOI: [10.1038/nprot.2016.173](https://doi.org/10.1038/nprot.2016.173).
15. Jafurulla, M., Bandari, S., **Pucadyil, T.J.**, Chattopadhyay A. (2017). Sphingolipids modulate the function of human serotonin1A receptors: Insights from sphingolipid-deficient cells. *Biochim Biophys Acta. (Biomembranes)* DOI: [10.1016/j.bbamem.2016.10.016](https://doi.org/10.1016/j.bbamem.2016.10.016).
16. **Pucadyil T.J.***, Holkar, S.S. (2016). Comparative analysis of adaptor-mediated clathrin assembly reveals general principles for adaptor clustering. *Molecular Biology of the Cell* (selected for cover) DOI: [10.1091/mbc.E16-06-0399](https://doi.org/10.1091/mbc.E16-06-0399).
17. Dar, S., Kamerkar, S.C., **Pucadyil, T.J.*** (2015). A high-throughput platform for real-time analysis of membrane fission reactions reveals the mechanism of dynamin function. *Nature Cell Biology* DOI: [10.1038/ncb3254](https://doi.org/10.1038/ncb3254).
18. Holkar, S.S., Kamerkar, S.C., **Pucadyil, T.J.*** (2015). Spatial control of epsin-induced clathrin assembly by membrane curvature. *Journal of Biological Chemistry* (selected for cover and as a papers of the week) DOI: [10.1074/jbc.M115.653394](https://doi.org/10.1074/jbc.M115.653394).
19. Shnyrova, A.V., Bashkurov, P.V., Akimov, S.A., **Pucadyil, T.J.**, Zimmerberg, J., Schmid, S.L., Frolov, V.A. (2013). Geometric catalysis of membrane fission driven by flexible dynamin rings. *Science* DOI: [10.1126/science.1233920](https://doi.org/10.1126/science.1233920).
20. Neumann, S., **Pucadyil, T.J.**, Schmid, S.L. (2013). Analyzing membrane remodeling and fission using supported bilayers with excess membrane reservoir. *Nature Protocols* DOI: [10.1038/nprot.2012.152](https://doi.org/10.1038/nprot.2012.152).
21. Liu, Y.W., Neumann, S., Ramachandran, R., Ferguson, S.M., **Pucadyil, T.J.**, Schmid, S.L. (2011). Differential curvature sensing and generating activities of dynamin isoforms provide opportunities for tissue-specific regulation. *Proc. Natl. Acad. Sci. U.S.A.* DOI: [10.1073/pnas.1102710108](https://doi.org/10.1073/pnas.1102710108).
22. **Pucadyil, T.J.***, Schmid, S.L.* (2010). Supported bilayers with excess membrane reservoir (SUPER): A template for reconstituting membrane budding and fission. *Biophysical Journal* (Featured article) DOI: [10.1016/j.bpj.2010.04.036](https://doi.org/10.1016/j.bpj.2010.04.036).
23. Sandeep, S., **Pucadyil, T.J.**, Paila, Y., Ganguly, S., Chattopadhyay, A. (2010). Chronic cholesterol depletion using statin impairs the function and dynamics of human serotonin1A receptors. *Biochemistry* DOI: [10.1021/bi100276b](https://doi.org/10.1021/bi100276b).

24. Ramachandran, R.*, **Pucadyil, T.J.***, Liu, Y.-W., Acharya, S., Leonard, M., Lukiyanchuk, V., Schmid, S.L. (2009). Membrane insertion of the pleckstrin homology domain variable loop 1 is Critical for Dynamin-catalyzed Vesicle Scission. *Molecular Biology of the Cell* *equal contribution. (Cover page article) DOI: [10.1091/mbc.e09-08-0683](https://doi.org/10.1091/mbc.e09-08-0683).
25. Chappie, J.S., Acharya, S., Liu, Y.-W., Leonard, M., **Pucadyil, T.J.**, Schmid, S.L. (2009). An Intramolecular Signaling Element that Modulates Dynamin Function In Vitro and In Vivo. *Molecular Biology of the Cell* DOI: [10.1091/mbc.e09-04-0318](https://doi.org/10.1091/mbc.e09-04-0318).
26. **Pucadyil, T.J.**, Schmid, S.L. (2008). Real-time visualization of dynamin-catalyzed membrane fission and vesicle release. *Cell* (Cover page article) DOI: [10.1016/j.cell.2008.11.020](https://doi.org/10.1016/j.cell.2008.11.020).
27. Jafurulla, Md., **Pucadyil, T.J.**, Chattopadhyay, A. (2008). Effect of sphingomyelinase treatment on ligand binding activity of human serotonin1A receptors. *Biochim. Biophys. Acta (Biomembranes)* DOI: [10.1016/j.bbamem.2008.07.007](https://doi.org/10.1016/j.bbamem.2008.07.007).
28. Ganguly, S., **Pucadyil, T.J.**, Chattopadhyay, A. (2008). Actin Cytoskeleton Dependent Dynamics of the Human Serotonin1A Receptor Correlates with Receptor Signaling. *Biophysical Journal* DOI: [10.1529/biophysj.107.125732](https://doi.org/10.1529/biophysj.107.125732).
29. **Pucadyil, T.J.**, Mukherjee, S., Chattopadhyay, A. (2007). Organization and dynamics of cholesterol at low concentrations in membranes analyzed by fluorescence photobleaching and recovery. *Journal of Physical Chemistry B* DOI: [10.1021/jp066092h](https://doi.org/10.1021/jp066092h).
30. **Pucadyil, T.J.**, Chattopadhyay, A. (2007). Cholesterol depletion induces dynamic confinement of the G-protein coupled serotonin1A receptor in the plasma membrane of living cells. *Biochim. Biophys. Acta (Biomembranes)* DOI: [10.1016/j.bbamem.2007.01.002](https://doi.org/10.1016/j.bbamem.2007.01.002).
31. **Pucadyil, T.J.**, Chattopadhyay, A. (2007). The human serotonin1A receptor exhibits G-protein dependent cell surface dynamics. *Glycoconjugate Journal* DOI: [10.1007/s10719-006-9008-x](https://doi.org/10.1007/s10719-006-9008-x).
32. **Pucadyil, T.J.**, Chattopadhyay, A. (2006). Effect of cholesterol on lateral diffusion of fluorescent lipid probes in native hippocampal membranes. *Chemistry and Physics of Lipids* DOI: [10.1016/j.chemphyslip.2006.04.003](https://doi.org/10.1016/j.chemphyslip.2006.04.003).
33. **Pucadyil, T.J.**, Chattopadhyay, A. (2006). Confocal fluorescence recovery after photobleaching of green fluorescent protein in solution. *Journal of Fluorescence* DOI: [10.1007/s10895-005-0019-y](https://doi.org/10.1007/s10895-005-0019-y).
34. **Pucadyil, T.J.**, Jafurulla, Md., Chattopadhyay, A. (2006). Prolonged treatment with ligands affects ligand binding to the human serotonin1A receptor in Chinese Hamster Ovary cells. *Cellular and Molecular Neurobiology* DOI: [10.1007/s10571-006-9002-7](https://doi.org/10.1007/s10571-006-9002-7).
35. Chattopadhyay, A., Jafurulla, Md. and **Pucadyil, T.J.** (2006). Ligand binding and G-protein coupling of the serotonin1A receptor in cholesterol-enriched hippocampal membranes. *Bioscience Reports* DOI: [10.1007/s10540-006-9009-9](https://doi.org/10.1007/s10540-006-9009-9).
36. Mukherjee, S., Kalipatnapu, S., **Pucadyil, T.J.**, Chattopadhyay, A. (2006). Monitoring the organization and dynamics of bovine hippocampal membranes utilizing differentially localized fluorescent membrane probes. *Molecular Membrane Biology* DOI: [10.1080/09687860600803223](https://doi.org/10.1080/09687860600803223).
37. Tewary, P., Veena, K., **Pucadyil, T.J.**, Chattopadhyay, A., Madhubala, R. (2006). The sterol-binding antibiotic nystatin inhibits entry of non-opsonized Leishmania donovani into macrophages. *Biochem. Biophys. Res. Commun.* DOI: [10.1016/j.bbrc.2005.11.062](https://doi.org/10.1016/j.bbrc.2005.11.062).
38. **Pucadyil, T.J.**, Chattopadhyay, A. (2005). Cholesterol modulates the antagonist-binding function of the bovine hippocampal serotonin1A receptor. *Biochim. Biophys. Acta (Biomembranes)* DOI: [10.1016/j.bbamem.2005.06.005](https://doi.org/10.1016/j.bbamem.2005.06.005).
39. **Pucadyil, T.J.**, Shrivastava, S., Chattopadhyay, A. (2005). Membrane cholesterol oxidation inhibits ligand binding function of hippocampal serotonin1A receptors. *Biochem. Biophys. Res. Commun.* DOI: [10.1016/j.bbrc.2005.03.178](https://doi.org/10.1016/j.bbrc.2005.03.178).
40. Paila, Y.D., **Pucadyil, T.J.**, Chattopadhyay, A. (2005). The cholesterol-complexing agent digitonin modulates ligand binding of the bovine hippocampal serotonin1A receptor. *Molecular Membrane Biology* DOI: [10.1080/09687860500093453](https://doi.org/10.1080/09687860500093453).
41. **Pucadyil, T.J.**, Kalipatnapu, S., Harikumar, K.G., Rangaraj, N., Karnik, S.S., Chattopadhyay, A. (2004). G-Protein-dependent cell surface dynamics of the human serotonin1A receptor tagged to yellow fluorescent protein. *Biochemistry* DOI: [10.1021/bi0480887](https://doi.org/10.1021/bi0480887).
42. **Pucadyil, T.J.**, Chattopadhyay, A. (2004). Exploring detergent insolubility in bovine hippocampal membranes: a critical assessment of the requirement for cholesterol. *Biochim. Biophys. Acta (Biomembranes)* DOI: [10.1016/j.bbamem.2003.11.013](https://doi.org/10.1016/j.bbamem.2003.11.013).
43. **Pucadyil, T.J.**, Chattopadhyay, A. (2004). Cholesterol modulates ligand binding and G-protein coupling to serotonin1A receptors from bovine hippocampus. *Biochim. Biophys. Acta (Biomembranes)* DOI: [10.1016/j.bbamem.2004.03.010](https://doi.org/10.1016/j.bbamem.2004.03.010).
44. **Pucadyil, T.J.**, Shrivastava, S., Chattopadhyay, A. (2004). The sterol-binding antibiotic nystatin differentially modulates ligand binding of the bovine hippocampal serotonin1A receptor. *Biochem. Biophys. Res. Commun.* DOI: [10.1016/j.bbrc.2004.06.004](https://doi.org/10.1016/j.bbrc.2004.06.004).
45. **Pucadyil, T.J.**, Tewary, P., Madhubala, R., Chattopadhyay, A. (2004). Cholesterol is required for *Leishmania donovani* infection: implications in leishmaniasis. *Molecular Biochemical Parasitology* DOI: [10.1016/j.molbiopara.2003.10.002](https://doi.org/10.1016/j.molbiopara.2003.10.002).
46. Kalipatnapu, S.*, **Pucadyil, T.J.***, Harikumar, K.G., Chattopadhyay, A. (2004). Ligand binding characteristics of the human serotonin1A receptor heterologously expressed in CHO cells. *Bioscience Reports* (*equal contribution) DOI: [10.1007/s10540-004-7191-1](https://doi.org/10.1007/s10540-004-7191-1).
47. Chattopadhyay, A., Jafurulla, Md., Kalipatnapu, S., **Pucadyil, T.J.**, Harikumar, K.G. (2004). Role of cholesterol in ligand binding and G-protein coupling of serotonin1A receptors solubilized from bovine hippocampus. *Biochem. Biophys. Res. Commun.* DOI: [10.1016/j.bbrc.2004.12.102](https://doi.org/10.1016/j.bbrc.2004.12.102).
48. Mukhopadhyay, K., Prasad, T., Saini, P., **Pucadyil, T.J.**, Chattopadhyay, A., Prasad, R. (2004). Membrane sphingolipid-ergosterol interactions are important determinants of multidrug resistance in *Candida albicans*. *Antimicrobial Agents and Chemotherapy* DOI: [10.1128/AAC.48.5.1778-1787.2004](https://doi.org/10.1128/AAC.48.5.1778-1787.2004).

49. Harikumar, K.G., **John, P.T.**, Chattopadhyay, A. (2000). Role of disulfide and sulfhydryl groups in agonist and antagonist binding in serotonin1A receptors from bovine hippocampus. *Cellular and Molecular Neurobiology* DOI: [10.1023/a:1007046707845](https://doi.org/10.1023/a:1007046707845).

Review Articles

1. Krauss, F., Roy, K., **Pucadyil, T.J.***, Ryan, M.J.* (2021) Function and regulation of the divisome for mitochondrial fission. *Nature* DOI: [10.1038/s41586-021-03214-x](https://doi.org/10.1038/s41586-021-03214-x).
2. Bhattacharyya, S., **Pucadyil, T.J.*** (2020) Cellular functions and intrinsic attributes of the ATP-binding Eps15 homology domain-containing proteins. *Protein Science* (selected for cover) DOI: [10.1002/pro.3860](https://doi.org/10.1002/pro.3860).
3. Bassereau, P., Jin, R., Baumgart, T., Deserno, M., Dimova, R., Frolov, V.A., Bashkirov, P.V., Grubmüller, H., Jahn, R., Risselada, H.J., Johannes, L., Kozlov, M.M., Lipowsky, T., **Pucadyil, T.J.**, Zeno, W.F., Stachowiak, J.C., Stamou, D., Breuer, A., Lauritsen, L., Simon, C., Sykes, C., Voth, G.A., Weikl, T.R. 2018. The 2018 biomembrane curvature and remodeling roadmap. *Journal of Physics D: Applied Physics* DOI: [10.1088/1361-6463/aacb98](https://doi.org/10.1088/1361-6463/aacb98).
4. **Pucadyil, T.J.** (2018) A novel fluorescence microscopic approach to quantitatively analyse protein-induced membrane remodelling. *Journal of Bioscience* 43:431-435.
5. **Pucadyil, T.J.**, Schmid, S.L. (2009). Conserved functions of Membrane Active GTPases in Coated Vesicle Formation. *Science* DOI: [10.1126/science.1171004](https://doi.org/10.1126/science.1171004).
6. Mettlen, M., **Pucadyil, T.J.**, Ramachandran, R., Schmid, S.L. (2009). Dissecting dynamin's role in clathrin-mediated endocytosis. *Biochemical Society Transactions* DOI: [10.1042/BST0371022](https://doi.org/10.1042/BST0371022).
7. **Pucadyil, T.J.**, Chattopadhyay, A. (2007). Cholesterol - a potential therapeutic target in leishmanial infection? *Trends in Parasitology* (cover page article) DOI: [10.1016/j.pt.2006.12.003](https://doi.org/10.1016/j.pt.2006.12.003).
8. **Pucadyil, T.J.**, Chattopadhyay, A. (2006). Role of cholesterol in the function and organization of G-protein coupled receptors. *Progress in Lipid Research* DOI: [10.1016/j.plipres.2006.02.002](https://doi.org/10.1016/j.plipres.2006.02.002).
9. **Pucadyil, T.J.**, Kalipatnapu, S., Chattopadhyay, A. (2005). Membrane organization and dynamics of the G-protein coupled serotonin1A receptor monitored using fluorescence-based approaches. *Journal of Fluorescence* DOI: [10.1007/s10895-005-2988-2](https://doi.org/10.1007/s10895-005-2988-2).
10. **Pucadyil, T.J.**, Kalipatnapu, S., Chattopadhyay, A. (2005). The serotonin1A receptor: a representative member of the serotonin receptor family. *Cellular and Molecular Neurobiology* DOI: [10.1007/s10571-005-3969-3](https://doi.org/10.1007/s10571-005-3969-3).

Editorials and Opinion Pieces

1. **Pucadyil, T.J.** (2023). Membrane contacts, lipid flux, and fission Mol. Cell [doi: 10.1016/j.molcel.2023.02.030](https://doi.org/10.1016/j.molcel.2023.02.030).
2. Jain S., **Pucadyil, T.J.**, Kotak, S., Bhandari, R., Mallik, R. (2019) Impact of Young Investigators' Meetings on life sciences research in India. *Current Science* 116:357-360.

Book Chapters

3. **Pucadyil, T.J.** (2011). Dynamic remodeling of membranes catalyzed by dynamin in *Current Topics in Membranes* (ed. Chernomordik, L., Kozlov, M.) DOI: [10.1016/B978-0-12-385891-7.00002-7](https://doi.org/10.1016/B978-0-12-385891-7.00002-7).
4. Kalipatnapu, S., **Pucadyil, T.J.**, Chattopadhyay, A. (2007). Membrane organization and dynamics of the serotonin1A receptor monitored using fluorescence microscopic approaches in *Frontiers in Neurosciences*, (ed. Chattopadhyay, A.).

Invited Talks

- 2023 Indian Institute of Science, Bangalore, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2023 Indian Biophysics Society Meeting, National Centre for Biological Sciences, Bangalore: Mechanistic analysis of membrane fission and discovery of novel fission proteins
- 2023 Young Investigators Meeting, IIT-Gandhinagar: Reconstituting membrane biology and consolidating a career in science
- 2022 EMBO Conference, Bilbao, Spain, Fission for the Masses: High throughput Screens for Membrane Fission Proteins
- 2022 University of Nebraska, Department of Biochemistry and Molecular Biology, Insights into Mechanisms Regulating T-tubule Biogenesis from in vitro Reconstitution
- 2022 Biologically Speaking Webinar Series, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2022 Indian Association of Cultivation of Science, School of Biological Sciences, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2021 Complex Fluids 2021, India, Membrane Fission Insights from Reconstituting Organelle Form and Chemistry
- 2021 National Institute of Immunology, India, Protein-induced membrane remodeling: new insights from unbiased screens and in vitro reconstitution
- 2021 Regional Centre for Biotechnology Contemporary Webinar Series, India, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2021 IISER Kolkata, Department of Biological Sciences, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry

- 2021 Annual Biophysical Society Meeting, U.S.A., Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry, Chair of the Session on Bioengineering, Biosurfaces, and Biomaterials
- 2021 20th International Congress of IUPAB, Foz do Iguacu, Brazil.
- 2020 ASCB-EMBO Annual Meeting, U.S.A., Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2020 ICTP workshop on Signatures of Nonequilibrium Fluctuations in Life, Trieste, Italy.
- 2020 Spatial Organization of Biological Functions, Thematic meeting of the Biophysical Society, Bangalore, India.
- 2020 ICAL, Indian Institute of Science, Bangalore, India, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2019 M.S. University, Vadodara, India, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2019 InSTEM, Bangalore, India, Mitochondrial fission: Insights from Reconstitution of Mitochondrial Form and Chemistry
- 2019 I-BIOS, Indian Institute of Science, Bangalore, India, Membrane Fission: Insights from Reconstituting Organelle Form and Chemistry
- 2019 17th Chinese Biophysics Congress, Tianjin, China, Mitochondrial fission: Insights from Reconstitution of Mitochondrial Form and Chemistry
- 2019 Gordon Conference in Molecular Membrane Biology, New Hampshire, USA, ATP-Dependent Membrane Remodeling Links EHD1 Functions to Endocytic Recycling
- 2019 Quantitative aspects of membrane fusion and fission, Thematic meeting of the Biophysical Society, Padova, Italy, ATP-Dependent Membrane Remodeling Links EHD1 Functions to Endocytic Recycling
- 2018 Mechanobiology after 10 years – The promise of Mechanomedicine, Mechanobiology Institute, Singapore, Reconstitution of Membrane Fission
- 2018 Princeton University, U.S.A, Membrane Fission: Diverse Players, Convergent Mechanisms
- 2018 HHMI International Research Scholar's Review Meeting, Janellia Farms Research Campus, U.S.A, Membrane Fission: Diverse Players, Convergent Mechanisms
- 2018 Young Investigator's Meeting, Trivandrum, Kerala, Formation of Transport Carriers at the Endocytic Recycling Compartment
- 2018 HHMI International Research Scholar's Inaugural Meeting, Gulbenkian Institute, Lisbon, Membrane Fission: Diverse Players, Convergent Mechanisms
- 2018 Dynamics Within and Across the Confined Cellular Space - Satellite Meeting to the International Conference on Cell Biology, IISER Pune, Membrane fission by mitochondrial dynamins
- 2018 International Conference on Cell Biology, CCMB, Hyderabad, Mechanistic Insights into the Formation of Transport Carriers during Endocytic Recycling
- 2018 Frontiers in Modern Biology, IISER Kolkata, Kolkata, Mechanistic Insights into the Formation of Transport Carriers during Endocytic Recycling
- 2018 IISER-Weizmann Institute of Science Conference, IISER Pune, Pune, Formation of Transport Carriers at the Endocytic Recycling Compartment
- 2017 Guha Research Conference, Kukarakom, Kerala, Functional Diversity among Membrane Fission Catalysts
- 2017 Tata Institute of Fundamental Research, Mumbai, Department of Chemical Sciences Colloquium: Membrane Fission: Diverse Players, Convergent Mechanisms
- 2017 The India-EMBO Young Scientist Networking (YSN), CRG, Barcelona, A Screen for Membrane Fission Catalysts
- 2016 Indian Biophysical Society Annual Meeting, Bangalore, India, Membrane fission: Diverse players and mechanisms
- 2015 Cell Mechanics Meeting, Raman Research Institute, Bangalore, India, Membrane curvature controls epsin-induced clathrin assembly
- 2015 Mechanism of Dynamin-catalyzed Membrane Fission, IIT Bombay, Mumbai, India
- 2014 80th Annual Meeting of the Indian Academy of Sciences, IIT Chennai, Chennai, India, Membrane fission: Analyses using novel assay systems
- 2014 Discussion Meeting on Biological Membranes , Department of Chemical Engineering and Bioengineering Program, Indian Institute of Science, Bangalore, India, Kinetic Intermediates in Dynamin-catalyzed Membrane Fission
- 2014 Xth International Symposium on Biochemical Roles Of Eukaryotic Cell Surface Macromolecules, Kolkata, India, Reconstitution of Clathrin-coated Pits
- 2012 Indo-US Symposium on Structure, Dynamics and Mechanics of Biological Membranes, Indian Institute Of Science, Bangalore, India. Membrane Tether Dynamics Analyzed Using Force Spectroscopy
- 2012 Lipid-Protein Interactions in Membranes: Implications for Human Health and Disease, Biophysical Society Satellite Meeting, Centre For Cellular and Molecular Biology (CCMB), Hyderabad, India, Membrane Fission Catalyzed by the Dynamin Family of Proteins
- 2011 All India Cell Biology Conference and Symposium on Membrane Dynamics and Disease, National Institute of Science Education and Research (NISER), Bhubaneswar, India, A Reconstitution Approach to Understand Vesicular Transport
- 2011 Biophysics-Paschim Tata Institute of Fundamental Research (TIFR), Mumbai, India. Membrane Budding and Fission Phenomena Interrogated with Novel Supported Bilayer Systems

- 2011 IXth International Symposium on Biochemical Roles of Eukaryotic Cell Surface Macromolecules, Trivandrum, India, Dynamin-Catalyzed Dynamic Remodeling of Membranes
- 2010 Nankai University, Tianjin, China, Dynamic Remodeling of Membranes Catalyzed by Dynamin
- 2009 Centre For Cellular and Molecular Biology (CCMB), Hyderabad, India, Endocytosis: Novel Insights from A Reconstitution Approach
- 2009 National Centre For Biological Sciences (NCBS), Bangalore, India, Understanding the Mechanism and Regulation of a Minimal Membrane Fission Apparatus
- 2009 Indian Institute for Science Education and Research (IISER), Pune, India, Understanding Molecular Mechanisms of Vesicular Transport Using A Reconstitution Approach
- 2008 48th Annual Meeting of The American Society for Cell Biology (ASCB) San Francisco, U.S.A., Real-Time Visualization Establishes Dynamin as The Minimal Fission Apparatus
- 2008 Society of Fellows Fall Research Symposium, The Scripps Research Institute, La Jolla, CA, U.S.A. Real-time Visualization Establishes Dynamin as a Minimal Fission Apparatus
- 2007 51st Biophysical Society Meeting, Baltimore, U.S.A. Dynamin Induces the Generation of Local Membrane Curvature and Clustering of Phosphatidyl-4,5-inositolbisphosphate (PIP2) on Planar Supported Membranes
- 2007 Centre for Cellular and Molecular Biology, Hyderabad, India. Nucleotide-dependent Membrane Reorganization Induced by Dynamin
- 2005 Trends in Biochemical Sciences, M.S. University, Biochemistry Department, Vadodara, India. Membrane Cholesterol Modulates the Function and Organization of the Serotonin-1A Receptor

Teaching

- Advanced Biochemistry (Undergraduate course; 4 credits)
- Advanced Cell Biology (Undergraduate course; 4 credits)
- Literature review (Graduate course; 3 credits)
- Physical Biology – Concepts and Experiments (Graduate; 2 credits)

Meetings and Workshops Organized

- 2022 EMBO Workshop, Birth and Fission of Cellular Compartments, Bilbao, Spain: Meeting Organizers - Vadim Frolov, Ana Shnyrova, Thomas Pucadyil, Felix Goni.
- 2020 12th International Symposium on Cell Surface Macromolecules, IISER Pune
- 2018 Dynamics Within and Across the Confined Cellular Space - Satellite Meeting to the International Conference on Cell Biology, IISER Pune
- 2016 13th SciComm Workshop (Wellcome Trust -DBT India Alliance) on 'Manuscript Writing', Hyderabad

Society Memberships

- Indian Society for Cell Biology
- Indian Biophysical Society
- Biophysical Society (U.S.A.)
- American Society for Cell Biology (ASCB)

Professional Activities

- Editorial Board Member, Traffic
 - Guest Editor, Current Opinions in Cell Biology – Membrane Trafficking Series for 2021
 - Panel member, Wellcome Trust-DBT India Alliance Early Career Fellowship (2019-2021)
 - Reviewed grants from Wellcome Trust-DBT India Alliance, ANR France, DST India, DBT India
 - Reviewed manuscripts for Nature Cell Biology, PNAS, Nature Communications, J Cell Biology, J Cell Science, J Structural Biology, Biophysical Journal, BBA-Biomembranes, Physical Reviews X, Communications Biology, Soft Matter
- (For full listing of reviewing activities, please visit <https://publons.com/researcher/3510228/thomas-pucadyil/peer-review/>)

Graduate Students

- 2023- Raksha Bansali
- 2020- Sannidhya De
- 2019- Uma Swaminathan
- 2019- Meghadeepa Sarkar
- 2019- Keerti Singh
- 2018- Shilpa Gopan

2018- Krishnendu Roy
2018- Soumya Bhattacharyya
2018- Himani Khurana
2013-19 Devika Andhare: Numb is a membrane-active clathrin adaptor
2014-18 Sukrut Kamerkar: Mechanism of Drp1-catalyzed membrane fission
2013-18 Raunaq Deo: Mechanistic insights into formation of transport carriers during endocytic recycling
2012-17 Manish Kushwah: Mechanism of EHD1-catalyzed membrane fission
2011-16 Srishti Dar: Mechanistic analysis of dynamin-catalyzed membrane fission
2011-15 Sachin Holkar: Role of clathrin-associated sorting proteins (CLASP) in clathrin assembly on membranes

Postdoctoral Associates

2020-22 Rakhee Lohia
2019-22 Gregor Jose
2019-20 Prasanna Iyer
2019-20 Parul Sood