

## Dr Justin E. Molloy

### Professor of Biophysics

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### Visiting Scientist

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### Qualifications and Awards:

- 1983 BSc Hons, Physiology, University of York
- 1987 PhD Biophysics, University of York
- 1998 Society of Experimental Biology, President's medal
- 2000 European Biophysical Societies Association, Annual Prize for Biophysics
- 2003 Koerber Stiftung, European Science Prize

### Positions:

- 1988 - 1990 NATO post-doctoral fellowship, University of Vermont, VT, USA.
- 1991 - 1995 RA1A (SERC) Department of Biology, University of York
- 1995 - 2002 Royal Society University Research Fellowship, University of York
- 2000 - 2002 Reader in Biology, University of York.
- 2002 - 2015 Head of Division of Physical Biochemistry, MRC NIMR, London
- 2015 - 2022 Principal Research Group Leader, The Francis Crick Institute, London
- 2015 - 2022 Honorary Professor: King's College London and University College London.
- 2022 – 2024 Professor of Biophysics, Warwick Medical School (0.4 FTE).

**Recent Funding:** Astra Zeneca: Collaborative Grant, 2017-2021, £175,000, 1xPDRA; Francis Crick core funding, 1xPLRS, 0.5xPhD Student

### Publications (2019-2023)

1. Bell, N.A.W. & Molloy J.E. (2023) Single-molecule mechanics of DNA double-strand break bridging by PARP2. *Proc Natl. Acad. Sci.* **120**: e2214209120 .
2. Meli A., McCormack A., Conte I., Chen, Q., Streetley J., Rose M.L., Bierings R., Hannah M.J., Molloy J.E., Rosenthal P.B., Carter, T. (2023) Altered storage and function of von Willebrand factor in human cardiac microvascular endothelial cells isolated from recipient transplant hearts. *Int. J. Mol. Sci.* **24**:4553
3. Pires, I., Hung Y.-F., Bergmann U, Molloy J.E., Kursula I. (2022) Analysis of Plasmodium falciparum myosin B ATPase activity and structure in complex with the calmodulin-like domain of its light chain MLC-B. *J. Biol. Chem.* **298**:102634
4. Bell, N.A.W. & Molloy J.E. (2022) Efficient Golden-Gate assembly of DNA constructs for single molecule force spectroscopy and imaging. *Nucl. Acids Res.* **50**:e77-e77
5. Hellen N., Mashanov G.I., Conte I.L., le Trionnaire S., Babich V., Knipe L., Hannah M.J., Molloy J.E. & Carter T. (2022) P-selectin mobility undergoes a sol-gel transition as it diffuses from exocytosis sites into the cell membrane. *Nature Commun.* **13**:3031
6. Vahokoski J., Calder L.J., Lopez A.J., Molloy J.E., Kursula I, Rosenthal P.B. (2022) High-resolution structures of malaria parasite actomyosin and actin filaments. *PLoS Pathog* **18**(4): e1010408
7. Bell N.A.W., Haynes P.J., Brunner K., Maia de Oliveira T., Flocco M., Hoogenboom B.W. & Molloy J.E. (2021) Single-molecule measurements reveal that PARP1 condenses DNA by loop stabilization. *Science Adv* **7**:eabf3641
8. Mashanov, G.I. , Nenasheva, T.A., Mashanova, A., Lape, R., Birdsall, N.J.M., Sivilotti, L. & Molloy, J.E. (2021) Heterogeneity of cell membrane structure studied by single molecule tracking. *Faraday Discuss.* **232**:358–374.
9. Aguilar, M., Al Nahas, K., Barrera, F., ...Tamm, L.K., Vijayakumar, A. (2021) Behaviour and interactions of proteins and peptides with and within membranes; From simple models to cellular membranes. *Faraday Discuss.* **232**:375–398
10. Mashanov, G.I., Nenasheva, T.A., Mashanova, T., Maclachlan, C., Birdsall, N.J.M., and Molloy, J.E. (2020). A method for imaging single molecules at the plasma membrane of live cells within tissue slices. *J. Gen. Physiol.* **153**(1):e202012657.
11. Bell N.A.W. & Molloy J.E. (2020) Microfluidic flow-cell with passive flow-control for microscopy applications. *PLoS ONE* **15**:e0244103
12. Khan, S., Downing, K.H., and Molloy, J.E. (2019). Architectural dynamics of CaMKII-actin networks. *Biophys. J.* **116**:104-119.
13. Baker, K., Gyamfi, I.A., Mashanov, G.I., Molloy, J.E., Geeves, M.A., and Mulvihill, D.P. (2019). TORC2-GAD8 dependent myosin phosphorylation modulates regulation by calcium. *eLife* **8**:1-42.