Christopher Patrick (Paddy) Royall

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Employment

2021—	ESPCI Paris	**CNRS Director of Research**
2018-21	University of Bristol	**Professor of Chemical Physics**
2016-7	Kyoto University, Japan	Sabbatical
2015-		Reader (Associate Professor)
2009-	University of Bristol	Permanent appointment to Lecturer
2007-15		**Royal Society University Research Fellow (URF).**
2004-2006	University of Tokyo, Japan	**Japan Society for the Promotion of Science fellow**, with Prof Hajime Tanaka.
2002-2004	University of Utrecht, Netherlands	**Postdoctoral fellow**, with Prof Alfons van Blaaderen.
2001-2	UBS Warburg, London	Investment Banking**.** Marketing/development.

Education

1997-2001	University of Cambridge, (St Catharine's College)	**PhD in Physics,** with Prof Athene Donald, Polymers and Colloids Group. Graduated 12th May 2001.
1996-7	Gap Year	Long-distance sailing trip, UK to the Caribbean.
1992-6	University of Edinburgh	**BSc in Physics,** 1st class hons, graduated 10th July 1996

Publications. 139 publications, h-index 45. 8000 citations (Google Scholar). *Highlights:*

Royall CP, Charbonneau P, Dijkstra M, Russo J, Smallenburg F, Speck T and Valeriani C. "Colloidal Hard Spheres: Triumphs, Challenges and Mysteries" *Rev. Mod. Phys.* **96** 045003 (2024).

Zampetaki A, Yang, Y, Loewen, H and Royall CP "Dynamical Order and Many-Body Correlations in Zebrafish show that Three is a Crowd", *Nature Commun,* **15** 2591 (2024).

Mauleon-Amieva A, Allen MP, Liverpool TB and Royall CP, "Dynamics and Interactions of Quincke Roller Clusters: from Orbits and Flips to Excited States", *Sci. Adv.* **9** eadf5144 (2023).

Ortlieb L, Ingebrigtsen TS, Hallett JE, Turci F and Royall CP "Probing excitations and cooperatively rearranging regions in deeply supercooled liquids", *Nature Commun.* **14** 2621 (2023).

Ferreiro-Córdova C, Royall CP, van Duijneveldt JS, "Anisotropic viscoelastic phase separation in polydisperse hard rods: non-sticky gelation", *Proc. Nat. Acad. Sci.* **117** 3415 (2020).

Hallett JE, Turci F and Royall CP, "Local structure in deeply supercooled liquids exhibits growing lengthscales and dynamical correlations", *Nature Comms,* **9** 3272 (2018).

Williams I, Oguz EC, Speck T, Bartlett P, Loewen H and Royall CP "Transmission of torque at the nanoscale", *Nature Physics* **12** 98–103 (2016).

Royall CP, Williams SR, Ohtsuka, T and Tanaka H, "Direct observation of a local structural mechanism for dynamic arrest", *Nature Materials* **7**, 556-561, (2008).

Leunissen ME, Christova CG, Hyninnen A-P, Royall CP, Campbell AI, Imhof A, Dijkstra M, van Roij R and van Blaaderen A, "Ionic colloidal crystals of oppositely charged particles", *Nature* **437**, 235 (2005).

Teaching

• Fellow of the Higher Education Academy (2015), (Masters equivalent qualification).
• Lecturing 4th year undergraduate Soft Matter and Active Matter course (Physics, 2019-21).
• Lecturing 4th year undergraduate Soft Matter course (Chemistry, 2012-21).
• Lecturing 3rd year undergraduate NanoPhysics course (Physics, 2014-17).
• Lecturing 2nd year course in Statistical Mechanics (Chemistry, 2011-13).
• Lecturing complexity science graduate school (2009-12).
• Lecturing and lab module for functional nanomaterials graduate school (2012-20).
• Tutorials, years 1-4.

In addition to this teaching at the University of Bristol, I have lectured and run a prevention project during my sabbatical at Kyoto University.

Selected Grants and Awards

Total grant income is GBP 6.4 M of which GBP 5.5 M as PI. *Highlights:*

• European Research Council Consolidator Grant “Nano-PRS”. EUR 1.8M. 2014-19.

• Friedrich Wilhelm Bessel Research Award (mid-career award by Humboldt foundation for an extended research period in Germany). 2022-23.

• Agence Nationale de Recherché (ANR) PRC grant “DiViNew” EUR 578k PI. 2022-

• Engineering and Physical Sciences Research Council (EPSRC) Standard Mode Grant “From interparticle forces to macroscopic yielding of soft amorphous solids”, GBP 1.2M. Joint PI with Rob Jack, University of Cambridge until relocation to Paris. 2020-

• Leverhulme Trust Research Project, “Unifying Protein Design and Assembly of Soft Matter for New Materials”, GBP 0.9M. PI until relocation to Paris. 2020-23.

• Royal Society University Research Fellowship “Direct observation of surface melting”. GBP 768k. 2007-15.

Presentations 187 (171) of which 151 (97) were invited.
Presentations at conferences 109 (74) of which 71 (50) were invited.
Invited seminars 65 (37) and departmental colloquia 12 (10).
One public lecture. Figures in brackets denote international presentations.

Conference Organisation

12 conference and workshops organised, including

“Unifying Concepts in Glass Physics VII”. June 2018. Lead organiser. 120 Participants. Bristol.

5 Centre Européen de Calcul Atomique et Moléculaire (CECAM) flagship meetings.

“Physics of Structural and Dynamical Hierarchy in Soft Matter”, March 2015. International organizer. 200 participants. Tokyo.

Selected Press Releases

“How many zebrafish constitute a school? ‘Three,' say physicists” https://phys.org/news/2024-03-zebrafish-constitute-school-physicists.html

“Superior Covid protection from better face masks, research shows” www.bristol.ac.uk/news/2022/march/facemasks-study.html

“A breakthrough in glass” www.bristol.ac.uk/news/2008/212017945385.html"

Postgraduate advising - 19 PhD students graduated or defended their thesis:

Industrial collaborators

Dr Malcolm Faers, Bayer AG (Leverkusen, Germany). Co-supervised three PhD students, 7 joint publications.