

Ian Williams

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 Nationality: British Citizen | Age: 30

EMPLOYMENT

POSTDOCTORAL SCHOLAR

DEPARTMENT OF CHEMICAL ENGINEERING,
 UNIVERSITY OF CALIFORNIA, SANTA BARBARA
 January 2015 – Present

VISITING RESEARCHER

UNIVERSITY OF MINNESOTA
 October 2017

POSTDOCTORAL RESEARCH ASSISTANT

H. H. WILLS PHYSICS LABORATORY,
 UNIVERSITY OF BRISTOL
 July 2013 – December 2014

EDUCATION

PHD (CHEMISTRY)

UNIVERSITY OF BRISTOL
 September 2009 – July 2013 (Awarded March 2014)
 Supervisors: Dr. C. Patrick Royall & Prof. Paul Bartlett

MPHYS (PHYSICS)

UNIVERSITY OF EDINBURGH
 September 2005 – June 2009
 First Class Honours

PUBLICATIONS

[8] **EVOLUTION AND MECHANICS OF MIXED PHOSPHOLIPID FIBRINOGEN MONOLAYERS**

I. Williams & T. M. Squires. *submitted*

[7] **EXPERIMENTAL DETERMINATION OF CONFIGURATIONAL ENTROPY IN A TWO-DIMENSIONAL LIQUID UNDER RANDOM PINNING**

I. Williams, F. Turci, J. E. Hallett, P. Crowther, C. Cammarota, G. Biroli & C. P. Royall. *submitted*

[6] **SOLUTO-INERTIAL PHENOMENA: DESIGNING LONG RANGE, LONG-LASTING, SURFACE SPECIFIC INTERACTIONS IN SUSPENSIONS**

A. Banerjee, I. Williams, R. Nery Azevedo, M. E. Helgeson, & T. M. Squires. *PNAS*, **113**, 31, 8612–8617 (2016)

[5] **TRANSMISSION OF TORQUE AT THE NANOSCALE**

I. Williams, E. C. Oguz, T. Speck, P. Bartlett, H. Löwen, & C. P. Royall. *Nature Phys.*, **12**, 98–103 (2016)

[4] **FLEXIBLE CONFINEMENT LEADS TO MULTIPLE RELAXATION REGIMES IN GLASSY COLLOIDAL LIQUIDS**

I. Williams, E. C. Oguz, P. Bartlett, H. Löwen, & C. P. Royall. *J. Chem. Phys.*, **142**, 024505 (2015)

[3] **STRUCTURAL CHARACTERISATION OF POLYCRYSTALLINE COLLOIDAL MONOLAYERS IN THE PRESENCE OF ASPHERICAL IMPURITIES**

A. T. Gray, E. Mould, C. P. Royall & I. Williams. *J. Phys.: Condens. Matter* **27**, 194108 (2015)

[2] **THE EFFECT OF BOUNDARY ADAPTIVITY ON HEXAGONAL ORDERING AND BISTABILITY IN CIRCULARLY CONFINED QUASI HARD DISCS**

I. Williams, E. C. Oguz, R. L. Jack, P. Bartlett, H. Löwen, & C. P. Royall. *J. Chem. Phys.*, **140**, 104907 (2014)

[1] **DIRECT MEASUREMENT OF OSMOTIC PRESSURE VIA ADAPTIVE CONFINEMENT OF QUASI HARD DISC COLLOIDS**

I. Williams, E. C. Oguz, P. Bartlett, H. Löwen, & C. P. Royall. *Nature Commun.*, **4**, 2555 (2013)

AWARDS

2017	University of California, Santa Barbara Art of Science Honourable Mention
2009–2012	University of Bristol Centenary Postgraduate Research Scholarship
2008–2009	University of Edinburgh Integrated Masters Physics Class Medal
2007–2008	University of Edinburgh Senior Honours Physics Class Medal
2007–2008	University of Edinburgh Brodie Memorial Prize
2006–2007	University of Edinburgh Junior Honours Physics Class Medal
2006–2007	University of Edinburgh Donald Fraser Bursary

RESEARCH PRESENTATION

INVITED TALKS

- Feb 2017 **Bloody rheology! Measuring interfacial viscoelasticity in mixed monolayers of lung surfactant and serum protein**, *8th International Soft Matter Workshop*, Helford, UK.
- May 2014 **Two relaxation regimes in quasi-hard-discs under adaptive circular confinement**, *6th International Soft Matter Workshop*, Helford, UK.
- Mar 2014 **Hard discs in circular confinement**, ESPCI, Paris, France.
- Feb 2014 **Hard discs in circular confinement**, University of Amsterdam, Amsterdam, The Netherlands.
- Sep 2012 **Non-circular confinement of quasi hard discs**, *5th International Soft Matter Workshop*, Helford, UK.
- Jun 2012 **The colloidal corral**, Heinrich-Heine-Universität, Düsseldorf, Germany.
- May 2011 **The colloidal corral**, *4th International Soft Matter Workshop*, Helford, UK.
- Feb 2010 **Optical trapping: manipulating the energy landscape**, *3rd International Soft Matter Workshop*, The Cotswolds, UK.

CONTRIBUTED TALKS

- Nov 2017 **Lung Surfactant & Serum Protein: Monolayer Rheology & Morphology**, *Soft Matter Interfaces: From Biology to Engineering Applications*, Ascona, Switzerland.
- Nov 2017 **Fibrinogen adsorption onto phospholipid monolayers: aging & stiffening**, *2017 AlChE Annual Meeting*, Minneapolis, USA.
- Jul 2017 **Rheology and morphology of mixed monolayers of lung surfactant and serum protein**, *91st ACS Colloid and Surface Science Symposium*, New York, USA.
- Jun 2015 **Interfacial colloidal polycrystals and gels under oscillatory shear**, *89th ACS Colloid and Surface Science Symposium*, Pittsburgh, USA.
- Jul 2014 **Structure in circularly confined quasi-hard-discs: the role of boundary adaptivity**, *9th Liquid Matter Conference*, Lisbon, Portugal.
- Apr 2014 **Circularly confined quasi-hard-discs: the role of boundary adaptivity**, *The Physics of Soft and Biological Matter*, Cambridge, UK.
- Mar 2014 **Structural bistability in quasi-hard-discs under adaptive circular confinement**, *APS March Meeting*, Denver, USA.
- May 2013 **Static & rotating adaptive confinement of quasi hard disc colloids**, *Workshop on Crystallisation at Interfaces*, CECAM, Lausanne, Switzerland.
- Jul 2012 **Static & dynamic confinement: colloidal corrals & washing machines**, *M4 Colloids Symposium*, Bristol, UK.

POSTER PRESENTATION

- Oct 2017 **Fibrinogen adsorption onto phospholipid monolayers: evolution & stiffening**, *Society of Rheology 89th Annual Meeting*, Denver, USA.
- Mar 2012 **2d freezing in confinement: the role of external fields**, *International Conference CODEF III*, Bonn, Germany.
- Jan 2012 **The colloidal corral: confined quasi-hard-discs**, *IoP Liquids and Complex Fluids Group Winter School*, Edinburgh, UK.
- Sep 2011 **The colloidal corral: confined quasi-hard-discs**, *8th Liquid Matter Conference*, Vienna, Austria.

PROFESSIONAL EXPERIENCE

TEACHING

- Mar 2014 **Masterclass in Soft Matter Chemistry** – one hour problem solving class as exam preparation for senior undergraduate students.
- Mar 2014 **Optical Techniques in Nanophysics** – one hour lecture describing microscopy and manipulation techniques commonly used in nanophysics research aimed at final year undergraduate students.
- Jan 2014 **Optical Micromanipulation** – short graduate level lecture course describing the theory and practise of optical trapping to Masters level students enrolled in the Bristol Centre for Functional Nanomaterials Centre for Doctoral Training.
- Jan 2014 **Nanophysics** – Teaching assistant leading tutorial classes.

LEADERSHIP & MENTORING

Organisation of *6th International Soft Matter Workshop*, Helford, Cornwall, May 2014.

Mentoring of graduate students resulting in publication in *PNAS*.

Supervision of 4 undergraduate research projects resulting in publication in *The Journal of Physics: Condensed Matter*.

Edinburgh University Physics Society President, academic year 2007 – 2008

PEER REVIEW

Physical Review Letters • The Journal of Rheology • The Journal of Chemical Physics • Soft Matter