Curriculum Vitae Pietro Cicuta March 2021

Group webpage: http://people.bss.phy.cam.ac.uk/~pc245/
Born: 17/07/1974 in Milan, Italy Family: Three children.
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Education

2000-2003 Cambridge University Ph.D. in Physics
Viscoelasticity of Insoluble Macromolecular Monolayers.
1993-1999 Università degli Studi di Milano Laurea in Physics, 110/110 cum laude
Fluctuations of an Interface Between Two Fluid Phases in Equilibrium and Non-Equilibrium Conditions.

Research Experience

2006-	Lecturer, Reader (2013) and Professor (2016) of Biological Physics	Cavendish Laboratory, Cambridge, UK
2004-2007	Oppenheimer Research Fellow	Cavendish Laboratory, Cambridge, UK
Oct. 2005	Visiting Researcher	Chem. Eng. Dept., Stanford University, USA
2003-2004	Postdoctoral Research Associate	Nanotechnology I.R.C., Cambridge, UK
Oct. 2002	Visiting Student	Chem. Eng. Dept., Stanford University, USA
2000-2003	Research Student, EPSRC	Cavendish Laboratory, Cambridge, UK
1998-1999	Laurea project	Department of Physics, Milan, Italy

Teaching

Courses:	Biological Physics, Part III Physics	14/15, to date
	Soft Condensed Matter and Biophysics, Part II Physics.	07/08 to 12/13.
Overall Head of Class:	Part II labs	14/15, to 17/18.
Head of Class:	Part II labs - Physics	14/15 to 19/20.
Head of Class:	Part 1B labs - Optics and Waves- Physics	06/07.
Head of Class:	Part 1A labs - Physics	09/10.
Supervision:	Part 1A, 1B Physics	08/09 to 14/15.
Supervision:	Part II Thermal and Statistics Physics, or Soft Matter	07/08, to 18/19.
Director of Studies:	Physics in Corpus Christi College	07/08, to date.
Examiner:	Part II Physics (08, 09, 10); IB Physics (12, Senior 13, 19)	

Areas of activity and expertise

Biophysics: model cell membranes; mechanical properties of cells; flows induced by cilia; gene regulation.
Soft Matter Physics: polymer systems; colloidal particles; liquid interfaces and films.
Experimental techniques: Instrument automation; microfluidics; optical tweezers; image/video analysis.

Main Grants and Personal Awards

Previous:

- Co-I IRC Nanotechnology Exploratory Project (2003-2004) £100K.
- Oppenheimer Fellowship (2004-2007) £150K.
- Co-I EPSRC Research Grant (Life Sciences Interface) (2006-2007) £97K.
- PI Unilever Research Grant, (2006-2008) £30K.
- PI CASE studentship Unilever (2008-2011).
- PI CASE studentship Kodak (2008-2011).
- PI Royal Society International Joint project, (2009-2010) £12K.
- PI MRC discipline hopping award, (2009-2010) £100K.
- PI Biophysics section of KAIST-Cavendish Research Collaboration, (2008-2010) £200K.
- PI Feasibility Project Winton Trust (2012), £50K.
- Co-I HFSP Research Project grant, (2009-2013), PI for £300K (grant total $1.2M).
- Co-I in 2 EU Training Networks “Comploids” (2009-2013) and “Transpol” (2010-2014), PI for £300K.
- Co-I HFSP project (2014-2017), PI for £250K (total £1M).
- Co-I EPSRC Programme grant “CAPITALS” (2012-2017), Theme leader and PI for £350K (grant total £5.1M).
- PI ERC Consolidator Grant, 2013-2019, total £1.1M.
- Co-I EU Training Network “Biopol” (2015-2019), PI for £150K (total £3.2M).

- Co-I GSK grant on airway pathogens (2016-2019), PI for about £300.
- PI EPSRC IAA grant, with Synoptics, 2018-2019, £50K
- PI EPSRC GCRF £30K

Current:

- PI ERC Proof of Concept Grant, 2019-2021, total £120K.
- PI EPSRC Parallelised live microscopy for high-throughput behavioural phenotyping in malaria research, 2018-2021 £592K
- Co-I EPSRC GCRF Detailed malaria diagnostics with intelligent microscopy 2018-2022 £859K
- PI Cystic Fibrosis Trust, Pipeline for personalised CF treatment (2019- 2022) £500K.
- Co-I UKRI, Bacterial AMR PI for £300K (total £3M).
- Joint PI of Cambridge University Academic Seed Fund for Physical/Life Sciences interface, £500K.

Graduate student supervision: Completed: 22 PhDs; 6 research MPhil. Current: 2 PhD students.

Examinations of PhD candidates: 40 UK; 7 non-UK.

Organisation of Meetings:

- Physics of Medicine kickoff meeting; 3-day international event; DAMTP Cambridge, 2007.
- Cavendish-Engineering-Addenbrookes joint Imaging Symposium; 1-day event; CR-UK Cambridge, 2009.
- LMB-Cavendish BioMembrane Workshop; 1-day local event; PoM Cambridge, 2009.
- Photonic Tools: Marker-free Imaging and Optical Manipulation; 1-day event; IoP London, 7 Dec. 2009.
- Workshop on Thermal Instabilities in Fluids; 1-day local event; Cambridge, 21 January 2011.
- CamBridgeSens workshop, Microfluidics in Biology, 1-day local event; Cambridge, Nov. 2012.
- Soft Matter and Biological Physics; 3-day international event; Cambridge, 2014 and 2016.
- Founder of Quantitative Methods in Gene Regulation; biannual 2-day event; 5th edition December 2019.

Department and University Administration / Community:

- Deputy Head of Department, Cavendish Laboratory, 2017-2018.
- Head of Group (Spokesperson and coordinator for ~120 people), Biological&Soft sector, 2015 to date.
- Co-director of the EPSRC Center for Doctoral Training in "Sensor Technologies", 2014 to date.
- Management Committee of the BBSRC Doctoral Training Programme, 2014 to 2017.
- Management Committee of the Systems Biology degree course at Cambridge, 2011 to date.

UK Administration / Community:

- Chair of the Biological Physics Group of IOP, 2018 to date (2010 to 2018 on committee and Treasurer).
- Editorial Board of IOP J.Phys.: Condensed Matter • Subject Editor of Roy.Soc. Open Science.

10 Selected of >111 peer reviewed publications:

● Grant et al., *Direct exchange of vitamin B12 is demonstrated by modelling the growth dynamics of algal-bacterial cocultures* **ISME J.** 8, 1418–1427 (2014) ● Man et al., *Inflammasome activation causes dual recruitment of NLRC4 and NLRP3 to the same macro-molecular complex* **Proc. Natl. Acad. Sci. USA** 111, 7403 (2014) ● Javer et al., *Persistent super-diffusive motion of Escherichia coli chromosomal loci,* **Nature Communications** 5, 3854 (2014) ● Man et al., *Actin polymerization as a key innate immune effector mechanism to control Salmonella infection* **Proc. Natl. Acad. Sci. USA** 111, 17588-17593 (2014) ● Achouri et al., *The frequency and duration of Salmonella–macrophage adhesion events determines infection efficiency* **Phil. Trans. R. Soc. B** 370, 20140033 (2015) ● Kennard et al., *Individuality and universality in the growth-division laws of single E-coli cells,* **Phys. Rev. E** 93, 012408 (2016) ●Bustamante et al., *Synergistic malaria vaccine combinations identified by systematic antigen screening,* **Proc. Natl. Acad. Sci. USA** 1702944114 (2017) ●Chioccioli et al. *Phenotyping ciliary dynamics and coordination in response to CFTR-modulators and Thymosin-alpha1 in Cystic Fibrosis respiratory epithelial cells* **Nature Comms** 10, 1763 (2019); ●Chioccioli et al. *Quantitative high speed video profiling discriminates between variants of primary ciliary dyskinesia* **Am. J. Resp. Crit. Care Med.** 199, 1436-1438 (2019) ● Kariuki et al., *Red blood cell tension controls Plasmodium falciparum invasion and protects against severe malaria in the Dantu blood group,* **Nature** 585 579-583 (2020).

Prof. Pietro Cicuta