



PERSONNEL

As at 31 October 2016 the Computer Laboratory consisted of 180 members of staff:

Academic staff	43
Academic-related & Assistant staff	30
Research Fellows	4
Post-doctoral Researchers	103

Two members of staff enjoyed personal promotions from 1 October 2016: **Dr Robert Watson** to a University Senior Lecturer and **Dr Richard Clayton** to a Principal Research Associate.

Two members of academic staff were appointed:

- **Dr Hatice Gunes**, University Senior Lecturer, previously Senior Lecturer at Queen Mary University of London, started on 1 January 2016.
- **Dr Neelakantan Krishnaswami**, University Lecturer previously Birmingham Fellow at the University of Birmingham, started on 1 August 2016.

The following Research Associates were promoted to Senior Research Associate:

- **Dr Gianni Antichi**, Networks and Operating Systems Group.
- **Dr Alice Hutchings**, Security Group.
- **Dr Theo Markettos**, Computer Architecture Group.
- **Dr Tamara Polajnar**, Natural Language and Information Processing Group.
- **Dr Marek Rei**, Natural Language and Information Processing Group.
- **Dr Noa Zilberman**, Networks and Operating Systems Group.

The Laboratory continues to strengthen its links with the Colleges and two more members of staff have taken up College Fellowships:

- **Dr Anil Madhavapeddy**, Pembroke College.
- **Dr Richard Mortier**, Christ's College.

We are pleased to report numerous staff and student honours, awards and achievements over 2015/16 <http://www.cl.cam.ac.uk/news/category/frontpage/> There are too many to mention individually but a selection of these include:

- **Kayvan Memarian, Justus Matthiesen, James Lingard, Kyndylan Nienhuis, David Chisnall, Robert N. M. Watson**, and **Peter Sewell's** paper 'Into the Depths of C: Elaborating the De Facto Standards' won a Distinguished paper award.
- **Professor John Daugman** was elected a Fellow of the US National Academy of Inventors (NAI) at a ceremony in Washington DC.
- **Professor Anuj Dawar** was a keynote speaker at the ACM India Annual Event held in Trivandrum in January 2016.
- **Dr Robert Harle** was awarded The Pilkington Teaching Award in June 2016.
- **Dr Andy Harter**, Director of Studies, St Edmunds College, was awarded the prestigious IET Faraday Medal in September 2016. Dr Harter is CEO of RealVNC which he co-founded in 2002.

- **Professor Andy Hopper** was awarded The Royal Society Bakerian Medal 2017 for his outstanding research in computer technology.
- Unikernel Systems, co-founded by **Dr Anil Madhavapeddy** and other Computer Lab postdoctoral researchers, was acquired by San Francisco based Docker Inc.
- **Cecilia Mascolo** was Keynote speaker for the IEEE International Conference on Pervasive Computing and Communications (Percom 2016).
- A research paper by **Robert Mullins, Andrew West** and **Simon Moore** was selected as the '10-Year Retrospective Most Influential Paper' in the 2016 Asia & South Pacific Design Automation Conference (ASP-DAC).
- **Raspberry Pi** announced that, over the last four and a half years, ten million computers have been sold. To celebrate the milestone, Raspberry Pi has launched 'the perfect bundle'. The official Raspberry Pi Starter Kit contains a Raspberry Pi 3, an 8GB SD card with the NOOBs operating system preloaded, an official case, a 2.5 amp power supply, a one meter HDMI cable and bundled mouse and keyboard.
- **Dr KC Sivaramakrishnan** was awarded the 1851 Research Fellowship.
- **Frank Stajano** chaired and hosted the Passwords 2016 international conference. This was the 9th event in the series and the most successful to date.
- **Erroll Wood** received the Emerging Investigator Award at the ACM SIGGraph Symposium on Eye Tracking Research and Applications for his paper 'Learning an appearance-based gaze estimator from one million synthesised images'. The paper is joint work with **Tadas Baltrusaitis**, Louis-Philippe Morency, **Peter Robinson** and Andreas Bulling.
- **Dr Noa Zilberman** was awarded a Leverhulme Trust Early Career Fellowship, for 'Systems for Big Data Applications: Revolutionising Personal Computing'.

ACTIVITIES

During 2015/2016 the **Supporters' Club** saw further growth with membership reaching 80. The Club hosted another successful recruitment fair and ran a full programme of student tech talks. Members acted as clients for the Part IB group design projects and continued to offer a wide variety of internship and graduate opportunities.

The annual dinner of the **Cambridge Computer Lab Ring**, a professional networking group for Cambridge Graduates working in the computing industry, was held at Queens' College on 13 April and featured the 12th Hall of Fame Awards. The awards, which celebrate the success of around 250 companies founded by Computer Lab graduates and staff, were presented by guest speaker Dr Hermann Hauser KBE, FRS, FREng.

The 2016 winners

Company of the Year: Unikernel Systems.

Product of the Year: Ellexus for Mistral.

Publication of the Year: Anil Madhavapeddy, Amir Chaudhry, Thomas Leonard, Magnus Skjegstad, Thomas Gazagnaire, David Sheets, Dave Scott, Richard Mortier, Balraj Singh, Jon Ludlam, Jon Crowcroft and Ian Leslie for 'Jitsu: Just-In-Time Summoning of Unikernels'.

The annual distinguished **Wheeler Lecture** was held on 25 May 2016 and given by Dr Andrew Herbert, former Chairman of Microsoft Research Laboratories. His lecture was titled 'A History of Virtualisation in Operating Systems'. The lecture was preceded by 35 **Minute Madness talks** given by research students and members of staff describing their current research. Each minute talk concluded with a blow of the whistle and the 'traditional' single clap by the audience!

The third annual **women@CL** Oxbridge Conference was held in the Lab with approximately 100 participants, ranging from high school students, senior professors, computer scientists and engineers from different companies, universities and related organisations.

The **annual academic off-site meeting** was held on 4 July 2016 at Gonville and Caius College, with research talks given by Professor Glynn Winskel and Professor Peter Robinson.

RESEARCH

The Computer Laboratory's research programme continues to produce world-leading work and research continues to be at the heart of the Laboratory's business <http://www.cl.cam.ac.uk/research/>. Research grant income in the last financial year was £7.4M, an increase of £0.5M on the previous year.

Amongst the Computer Laboratory's portfolio of active research grants, we have a broad spectrum of topics. Grants awarded last year include:

- **Richard Gibbens and Eiko Yoneki** were awarded an EPSRC Global Challenges Research Fund (GCRF) on 'Digital Epidemiology' collection and analysis of contact networks in developing countries for understanding disease spread for 8 months.
- The **lowRISC project** co-founded by **Robert Mullins** released new versions of the open-source SoC platform. Generous donations were received from a private donor, Google and IMC Financial Markets. The project was also awarded funding from the RAEng's Newton Fund to support collaboration with Universidad Industrial de Santander in Columbia.
- **The OCaml Labs** group has successfully extended their grant into 2020 to continue improvements on the OCaml Platform, documentation, multicore implementation, webstack and Windows support.
- **Dr Thomas Sauerwald** was awarded a prestigious European Research Council (ERC) Starting Grant. His funded project titled 'Dynamics of Multiple, Interacting and Concurrent Markov Chains' will run from 2016-2021, and aims to explore new algorithms based on multiple random walks that are able to cope with massive and complex data sets.

TEACHING

Growth in undergraduate numbers slightly decreased in 2015; our first year intake was 96 students (103 in 2014). For 2016 the intake is 99 students, an increase on 2015, and close to our planned number of 100. Around 72% have chosen the new Computer Science 75% option. Disappointingly, the number of female students dropped to 15% from 19% in 2015 but we will endeavour to identify ways to improve our gender ratio. The number of students obtaining a First or II.1 in 2016 rose to 85%.

2016 Part II results		2015 Part II results	
I	34%	I	31%
II.1	51%	II.1	52%
II.2	7%	II.2	10%
III	8%	III	7%

The MPhil in Advanced Computer Science continues to run smoothly with 27 modules (including two offered at the Department of Engineering) spanning the wide range of research interests found in the Department. Application numbers remain strong, with 174 applying for entry in 2016-17.

OUTREACH

The Computer Laboratory is engaged in a wide range of outreach activities with schools, colleges and communities. Our staff participate in public engagement activities to inspire, inform and foster debate. Full details of the Laboratory's outreach and public engagement can be found at <http://www.cl.cam.ac.uk/outreach/> but a selection of the year's activities include:

Ohad Kammar, Gemma Gordon, and Jeremy Yallop hosted the first International Metaprogramming Summer School at Robinson College, bringing together students from thirteen countries for a week of lectures and discussions.

The Computer Laboratory was represented at the Oxbridge Conferences by **David Chisnall, Jonathan Hayman, Graham Titmus, Lucas Sonnabend** and **Philip Saville**.

The Department participated in the University Open Days opening its doors to students, parents and teachers. Over 200 people attended, of which approximately 25 were female (12.5%).

Alastair Beresford, Gareth Bailey and Andrew Rice hosted the British Informatics Olympiad at the Computer Laboratory.

A number of the Lab's staff hosted the Raspberry Pi Big Birthday Bash at the Computer Laboratory. Over 1500 people attended the event.

VISITORS

We have been delighted to host many academic and industrial visitors, including the following:

- Dr Christophe Dubach, University of Edinburgh
- Dr David Eyers from Otago University, New Zealand
- Professor Virgil Gligor, Carnegie Mellon University, USA
- Daniel Hillerström, University of Edinburgh
- Professor Toshiyuki Masui, Keio University, Japan
- Dr Cristina Munoz, University of Geneva
- Professor Ryan Newton, Indiana University, USA
- Dr Christophe Troestler, UMONS, Belgium
- Mr Derek Williams, IBM
- Professor Hakim Weatherspoon, Cornell University, USA
- Dr Alejandro Valero, Universitat Politècnica de València (UPV)