

## GRADNET PHD COURSES, CONFERENCES AND OPPORTUNITIES

Please find below is a list of the forthcoming GRADnet Training events for the academic year 2018-19. Please note that all advertising will be done through the [SEPnet](#) webpage and all registrations will be through "Eventbrite" and not the VRE.

### Forthcoming dates confirmed:

**12-13 September 2018: DISCnet at Old Thorns, Liphook, Hampshire** (primarily for DISCnet PGRs and limited places for PGRs interested in Data Intensive Science.)

**17 October 2018: Moving Forward for 2<sup>nd</sup> Years at 1 Park Crescent Conference Centre, London:** This is highly recommended for 2<sup>nd</sup> Years but 3<sup>rd</sup> and 4<sup>th</sup> years are welcome to attend.

**\*24 October 2018: GRADnet Induction at 1 Park Crescent Conference Centre, London:** This is *compulsory* for all September/October 2018 starters and if necessary please make arrangements to transport your PGRs to the venue.

**31 October 2018: IOP Employer Panel Event at Hallam Conference Centre, London** (networking event for PGRs, Postdocs and employers)

**17-18 January 2019: Theoretical Astrophysics and Exoplanets** (title tbc) at University of Hertfordshire

**18-20 February 2019: Winter School at Cumberland Lodge, Great Park, Windsor**

**3-5 April 2019: Student-led Conferences at University of Southampton** (arrival 6pm on 3 April)

### Forthcoming dates to be confirmed:

1-4 July 2019: Summer School at NPL, Teddington, Middlesex tbc

Quantum Technology (title and dates tbc) at University of Surrey

Kind regards

Cristobel Soares-Smith

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**From:** Jorge Quintanilla [<mailto:J.Quintanilla@kent.ac.uk>]

**Sent:** 08 August 2018 22:51

**To:** [S.Ghosh@kent.ac.uk](mailto:S.Ghosh@kent.ac.uk)

**Subject:** International Workshop on Unconventional Superconductors: New Paradigms for New Materials (Cosener's House, Abingdon, 24-25 September 2018)

Dear colleague,

I would like to bring this event to your attention and would be very grateful if you could publicise it to your colleagues. Thank you very much.

Yours,

Jorge Quintanilla (on behalf of the organising committee)

## **Unconventional Superconductors: New Paradigms for New Materials**

*Cosener's House, Abingdon, 24-25 September 2018*



### **Aims and Scope**

The theory of conventional superconductors (BCS theory) was one of the great successes of theoretical physics in the past century. Not all superconductors, however, obey it. Such “unconventional superconductors” include heavy-fermion, high-temperature (copper-based and iron-based), triplet, and non-centrosymmetric superconductors. Over the last few decades, a qualitative understanding of the phenomenology of such systems built up. In recent years, however, this emerging understanding has been shaken by the discovery of a number of new superconducting systems that do not seem to fit in. Many of these new superconductors feature a combination of spin-orbit coupling, multi-band pairing and/or lack of inversion symmetry, leading to the possibility of much more complex order parameters than have hitherto been considered. The field has thus become wide open and is full of opportunity to discover new phenomena that are unusual and potentially useful.

The International Workshop on Unconventional Superconductors: New Paradigms for New Materials will bring together theorists and experimentalists working in this exciting area. The aim is to develop a new understanding of superconductivity through which the more complex types of unconventional superconductivity that we are now encountering can be understood. The workshop will focus strongly on materials whose unconventional nature has been uncovered recently or which clearly do not fit in with existing generalisations of BCS theory.

### **Sponsors**

This conference is sponsored by the [Engineering and Physical Sciences Research Council \(EPSRC\)](#) through the project [Unconventional Superconductors: New Paradigms for New Materials \(USC\)](#) and by the [Science and Technology Facilities Council \(STFC\)](#).

### Invited speakers (confirmed)

- Ernst Bauer (TU Wien)
- Elizabeth Blackburn (University of Birmingham)
- Stephen Blundell (University of Oxford)
- Antony Carrington (University of Bristol)
- Amalia Coldea (University of Oxford)
- Matthias Eschrig (RHUL)
- Martin Gradhand (University of Bristol)
- Andrew Huxley (University of Edinburgh)
- Daniel Mayoh (University of Warwick)
- Kazumasa Miyake (Osaka University)
- Jörg Schmalian (KIT)
- Ilya Vekhter (LSU)
- Huiqiu Yuan (Zhejiang University)

### Organising committee

- James F. Annett (University of Bristol)
- [Sudeep Ghosh \(University of Kent\) – Secretary](#)
- Adrian Hillier (ISIS Facility)
- Don Paul (University of Warwick)
- Jorge Quintanilla (University of Kent) – Chair

### Programme

#### Day 1 (Monday 24 September, 2018)

10.15-	Registration &		
10.45	Coffee		
10.45-		James F.	
11.00	Opening	Annett	
11.00-		Kazumasa	Varieties of spontaneous magnetization in
11.30	Invited talk	Miyake	unconventional superconductors
11.30-		Stephen	
12.00	Invited talk	Hayden	Title TBA
12.00-			
12.30	Invited talk	Amalia Coldea	Title TBA
12.30-			
14.00	Lunch		
14.00-			
14.30	Invited talk	Ernst Bauer	Title TBA

14.30-		Matthias	
15.00	Invited talk	Eschrig	Title TBA
15.00-		Andrew	
15.30	Invited talk	Huxley	Title TBA
15.30-			
16.00	Coffee		
16.00-	Contributed talks		
17.00	(4x)		
17.00-		Martin	The orbital moment and anomalous transport in
17.30	Invited talk	Gradhand	unconventional superconductors

**Day 2 (Tuesday 25 September, 2018)**

9.00-			Superconductivity with broken time reversal
09.30	Invited talk	Huiqiu Yuan	symmetry
9.30-			Time-reversal symmetry breaking by Loop Josephson
10.00	Invited talk	Sudeep Ghosh	current order
10.00-			
10.30	Invited talk	Daniel Mayoh	Title TBA
10.30-			
11.00	Coffee		
11.00-			
11.30	Invited talk	Jörg Schmalian	Title TBA
11.30-		Antony	
12.00	Invited talk	Carrington	Title TBA
12.00-		Elizabeth	
12.30	Invited talk	Blackburn	Title TBA
12.30-			
14.00	Lunch		
14.00-			
14.30	Invited talk	Ilya Vekhter	Title TBA
14.30-			
15.00	Invited talk	Stephen Blundell	Title TBA
15.00-			
15.30	Invited talk	Gabor Csire	Non-unitary triplet pairing in LaNiC <sub>2</sub> and LaNiGa <sub>2</sub>
15.30-			
16.00	Coffee		
16.00-	Contributed talks		
17.00	(4x)		
17.00-			
17.30	Invited talk	Adrian Hillier	Title TBA
17.30-			
17.45	Closing	Jorge Quintanilla	

**Registration**

There is a £60 registration fee to partially cover meals and refreshments. Follow [this link\\*](#) to the registration page.

A small number of places will be available to graduate students with zero fee. Follow [this link\\*](#) if you wish to register this way (these will be allocated on a first-come, first-served basis to PhD students only; if there are no longer any places available, you will still be able to come back to this page and register as a fee-paying delegate).

**\*Note: the registration facility is not yet available.**

### **Venue and travel**

The meeting will take place at [the Cosener's House](#) in Abingdon, Oxfordshire, England. Directions to the conference venue can be found [here](#).

A limited number of rooms have been pre-booked at a reduced rate at the Cosener's House. You can reserve one of these using [this form](#).\*

**\*Note: the room reservation facility is not yet available.**

## **Are you interested in a career in data science or looking to leave the world of academia?**

### **Data Science in 2018**

Demand for data scientists across Europe and the world has been rising rapidly over the past few years and shows no signs of stopping.

Researchers possess many of the skills required in data science - such as collecting and interpreting data, testing hypotheses and communicating results. ASI Data Science is ready to help you develop the last 10% - the industry specific skills.

Data science is a field that values PhD candidates – particularly from quantitative subjects. As a data scientist, you would use the technical skills you have developed in academia to solve problems like helping trains run on time, stop terrorist propaganda online, identify the causes of fire in London and many more.

### **ASI and the Fellowship**

ASI offers an 8-week full-time Fellowship in central London, specifically aimed at helping PhD graduates and postdocs in all quantitative and scientific disciplines transition to a career in data science and data engineering in industry. The course is taught by our international, friendly and diverse team of data scientists and data engineers, and, since starting in 2014, we have helped 195+ Fellows transition to a career in data science.

### **Salary**

Fellows will be paid the London living wage for the days they spend working with their project companies (4 days a week for 6 weeks). Because ASI do not charge for the training Fellows receive, each Fellow will receive a salary of **£1958.40** for the total period.

### **Applications**

The 13th ASI Fellowship starts on **Monday 14th January 2019**. Applications are open until 8pm

GMT **15th October 2018** and Fellows are accepted on a rolling basis. Learn more and apply at: <http://www.asidatascience.com/fellowship>

We will be hosting a Q and A on our Twitter account to discuss the data science industry and career possibilities, and answer any questions about the Fellowship, at a later date. Please visit <http://www.twitter.com/asidatascience> for more details.

Veronica Benson

Employer Liaison Director

South East Physics Network (SEPnet)

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Website: [www.sepnet.ac.uk](http://www.sepnet.ac.uk)

### **Machine Intelligence Garage PhD Placements, 3 months (£1,500 pm), London from September 2018**

**CAP-AI** is London's first A.I. enabling programme focused on stimulating growth in London's AI cluster. The programme mission is to provide AI SMEs with the resources they need to survive and grow in an increasingly competitive landscape.

Digital Catapult selects SMEs through the [Machine Intelligence Garage](#) and helps them gain access to computational power, resource and talent that they would not normally be able to find or afford, enabling them to move their businesses forward.

#### **How does the PhD placement work?**

##### **Start date:**

September or October 2018. This is a flexible timeline and placement opportunities that are not filled will still be available throughout the year.

##### **How many PhD placements are offered?**

We currently have 9 potential research projects to be undertaken from 9 different SMEs. Every 3 months the programme will take on board up to 10 new start-ups with new projects available.

##### **What is the contractual set-up?**

The student will have a contract either directly with the SME and/or with Digital Catapult. The student may need to defer his/her PhD for the duration of the placement. The IP arising from the placement will be retained by the SME. The student will be paid a stipend of £1,500/month.

##### **To apply:**

See attached for further details for how to apply or contact Veronica Benson.

Veronica Benson

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