

# JAI Fest 2019

**Philip Burrows**

*Oxford University*



# John Adams Institute

---

**Oxford University, Royal Holloway, Imperial College**

**One of two UK national academic centres of excellence in  
accelerator science, set up in 2004**

**22 faculty**

**26 staff**

**46 PhD students**

**Research projects at: CERN, DESY, KEK, Daresbury,  
Diamond, ISIS, CLF ...**

**Comprehensive PhD training programme**

# JAI faculty

---

**Royal Holloway: Stewart Boogert, Stephen Gibson, Pavel Karataev**

**Imperial College:**

**Zulfikar Najmudin, Stuart Mangles, Steven Rose, Bucker Dangor**

**Oxford:**

**Riccardo Bartolini, Philip Burrows, Brian Foster, Simon Hooker,**

**Ivan Konoplev, Peter Norreys, Armin Reichold, Suzie Sheehy,**

**Frank Van Den Heuvel, Roman Walczak**

**Visiting: Manjit Dosanjh, Emmanuel Tsesmelis, Richard Walker**

**Emeritus: George Doucas, Ken Peach**

# Congratulations!

---

**Stewart Boogert**

**Head of Engineering,  
Physical and  
Mathematical Sciences  
at RHUL**



# Congratulations!

---

**Simon Hooker**

**Head of  
Atomic and Laser Physics  
in Oxford**



# Welcome!

---

**Manjit Dosanjh**

**Appointed  
Visiting Professor  
In Physics Dept at  
JAI Oxford University**



# JAI staff

---

## **Imperial College:**

**Saleh Alatabi, Rory Baggott, Ollie Ettliger, George Hicks, Brendan Kettle, Rob Shalloo, Matthew Streeter**

## **Oxford:**

**Aaron Alejo, Douglas Bett, Paul Coe, James Cowley, Hector Garcia Morales, James Holloway, Mark Jones, Maksym Korostelev, Rebecca Ramjiawan, Emi Yamakawa**

## **Royal Holloway:**

**Alberto Arteche, Paul Bamford, Gary Boorman, Alessio Bosco, Richard Elsom, Robert Kieffer, Alexey Lyapin, Laurie Nevay, William Shields**

# Congratulations!

---

**Emilia Cruz Alaniz**

**Awarded PDRA  
at Cockcroft Institute**





# Congratulations!

---

**Ryan Bodenstein**

**Awarded staff post at  
MYRRHA**



# Congratulations!

---

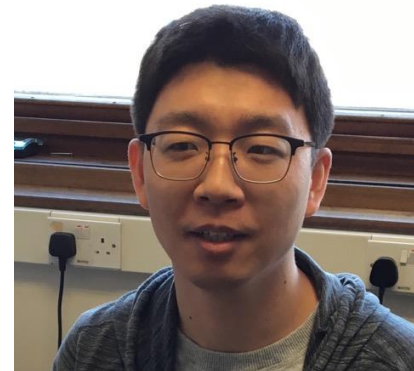
**Jonathan Wood**

**Awarded DESY  
Fellowship**



**Zhi Qiao**

**Awarded PDRA at ANL**



# Congratulations!

---

**Colin Perry**

**Retired after 22 years in  
Oxford Physics**



# Farewell!

---

**Marcus Palm**

**founded TERAPET,  
Nyon**



**Konstantin Lekomtsev**

**→ Berkeley**



# Welcome!

---

**Emi Yamakawa**

**PDRA on ISIS**



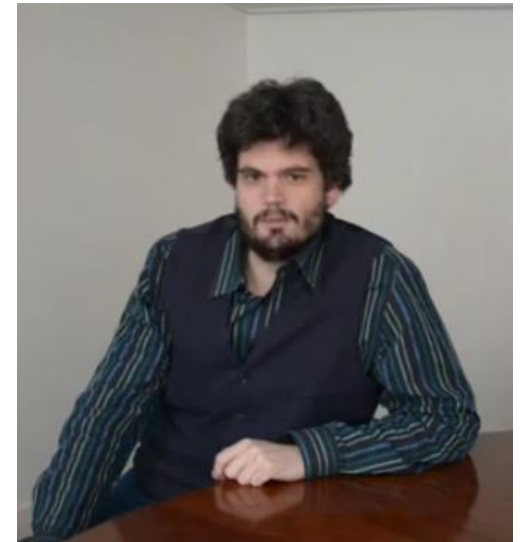
# Welcome! (HL-LHC)

---

**Hector Garcia Morales (PDRA)**



**Douglas Bett (PDRA)**



# Welcome!

---

**Rebecca Ramjiawan**

**PDRA on AWAKE**



# Welcome!

---

**Rob Shalloo**

**PDRA  
on laser wakefields**



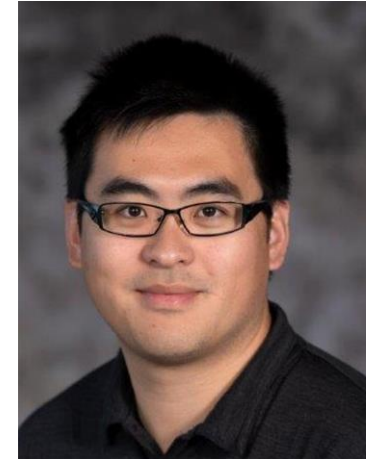


# Welcome! (PaMIR)

**Jubin Mitra: Senior FPGA engineer, started in October**



**Peter Qui: PDRA, started in April**



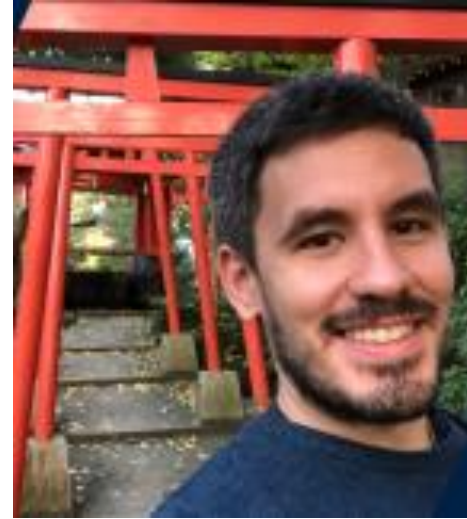
**Edgar Brucke: Masters student**



# Welcome! (Laser plasma)

---

**Aaron Alejo (PDRA)**



**James Cowley (RA)**



# JAI students

---

## **Oxford:**

**Luke Dyks, Jake Flowerdew, Chetan Gohil, Peter Griffin-Hicks, Oscar Jakobsson, Jakob Jonnerby, Pierre Korysko, Ji Li, Lucy Martin, Carlo Mussolini, Collette Pakuza, Jan Paszkiewicz, Alexander Picksley, David Posthuma de Boer, Aimee Ross, Eugenio Senes, Max Topp-Mugglestone, Robert Williamson, Wei Ting Wang, Laurence Wroe**

## **Imperial College:**

**Michael Backhouse, Yuxuan Cao, Cary Colgan, Titus-Stefan Dascalu, Elias Gertschmayer, Jan-Niclas Gruse, Adam Hughes, Eva Loss, Robbie Watt, Wei Wu, Nuo Xu**

## **Royal Holloway:**

**Siobhan Alden, Andrey Abramov, Pablo Arrutia Sota, Sophie Bashforth, Daniele Butti, Theodoros Christodoulou, Gian Luigi D'Alessandro, Kirill Fedorov, Helen Guerin, Daniel Harryman, Helena Lefebvre, Andrei Olenik, Tom Vaughan, Niki Vitoratou, Stuart Walker**

# Welcome class of 2019!

---

<b>Pablo Arrutia Sota</b>	<b>(MedAustron)</b>
<b>Daniele Butti</b>	<b>(LHC)</b>
<b>Helene Guerin</b>	<b>(HL-LHC)</b>
<b>Jake Flowerdew</b>	<b>(IBEX)</b>
<b>Peter Griffin-Hicks</b>	<b>(ISIS)</b>
<b>Oscar Jakobsson</b>	<b>(laser plasma)</b>
<b>Carlo Mussolini</b>	<b>(CERN NA beams)</b>
<b>Collette Pakuza</b>	<b>(beam instrumentation)</b>
<b>Max Topp Mugglestone</b>	<b>(ISIS/intense beams)</b>
<b>Wei Ting Wang</b>	<b>(laser plasma)</b>
<b>Lawrence Wroe</b>	<b>(medical beamlines)</b>
<b>Yuxuan Cao</b>	<b>(MSc)</b>
<b>Titus Stefan Dascalu</b>	<b>(MSc)</b>
<b>Adam Hughes</b>	<b>(LWFA)</b>
<b>Nuo Xu</b>	<b>(LWFA)</b>

# Congratulations on completing PhD!

---

**Alberto Arteche**

**Michele Bergamaschi**

**Emma-Jane Ditter**

**Swann Levasseur**

**Rebecca Ramjiawan**

**Savio Rozario**

**Alexander Savin**

**Leon Van Riesenhaupt**

**Stuart Walker \***

# Congratulations! Poster prizes

---

**Alex Picksley:  
EAAC poster prize**



**Alexander Savin:  
ECHAD**



**Marko Mayr:  
LPAW**



# Next STFC JAI grant

---

**Current STFC JAI grant runs until 31/3/21**

**STFC have advised JAI and CI to expect a call for the next JAI grant proposal to be submitted in spring 2020**

**Peer-review summer 2020**

**Sign-off autumn 2020**

**Grant start 1/4/21**

**To run for 4 years**

# JAI research activities

---

**Electron beams:**

**Electron-positron (linear) colliders  
Diamond Light Source + future FEL**

**Proton beams:**

**Large Hadron Collider  
Future Circular Collider  
Intense hadron beams (ISIS, FETS)**

**Laser- and beam-driven plasma wakefield acceleration**

**Advanced accelerator systems:**

**Beam instrumentation, feedback + control  
RF systems  
Metrology/alignment**

**Beam therapy:**

**Proton, ion, electron**



# Today's programme (1)

	<b>Arrival and lunch / refreshments (Denys Wilkinson Building level 5)</b>		11:30 - 12:00
12:00	<b>Welcome and introduction</b>	<i>Philip Nicholas Burrows</i>	12:00 - 12:20
	<b>Summary of FONT nanometer-level beam stabilization results at KEK ATF2</b>	<i>Rebecca Louise Ramjiawan</i>	12:20 - 12:40
	<b>Ground motion effects in the (HL-)LHC</b>	<i>Hector Garcia Morales</i>	12:40 - 13:00
13:00	<b>Simulation studies of Electro-Optic-BPMs for HL-LHC</b>	<i>Alberto Arteché Gonzalez</i>	13:00 - 13:20
	<b>Crystal channeling for HL-LHC collimation</b>	<i>Laurie Nevay</i>	13:20 - 13:40
	<b>FASER Simulations: Particle propagation in and out of an accelerator</b>	<i>Helena Lefebvre</i>	13:40 - 14:00
14:00	<b>Breakdown-Loaded Electric Field as a High Gradient Limit</b>	<i>Mr Jan Paszkiewicz</i>	14:00 - 14:20
	<b>Ion beam collimation for future hadron colliders</b>	<i>Andrey Abramov et al.</i>	14:20 - 14:40
	<b>Progress on Muon Ionisation Cooling Demonstration with MICE</b>	<i>Paul Juri</i>	14:40 - 15:00
15:00	<b>Tea / coffee break</b>		

# Today's programme (2)

15:00

Tea / coffee break

15:00 - 15:30

ISIS

*Robert Williamson*

15:30 - 15:50

16:00

Using the IBEX Paul trap to test nonlinear integrable optics

*Lucy Kate Martin et al.*

15:50 - 16:10

Loss reduction techniques for synchrotron slow extraction and beam delivery: simulations and recent measurements at MedAustron *Pablo Andreas Arrutia Sota*

Experimental Considerations for Staged Acceleration on Astra Gemini

*Nic Gruse*

16:30 - 16:50

17:00

Modelling the Signal to Noise Ratio of Breit-Wheeler Detection Experiments with Geant4

*Watt Rob*

16:50 - 17:10

Low-Density Waveguides for multi-GeV Laser-Plasma Accelerators

*Alex Picksley*

17:10 - 17:30

Narrow energy spread, GeV electron beams from shock injection in a laser wakefield accelerator

*Cary Colgan*

17:30 - 17:50

18:00

Using X-rays from a laser wakefield accelerator to perform ultrashort multi-Kev absorption spectroscopy *Brendan Kettle*

17:50 - 18:10

Drinks & nibbles

# JAI Fest 2019

---

**Let's enjoy the day!**