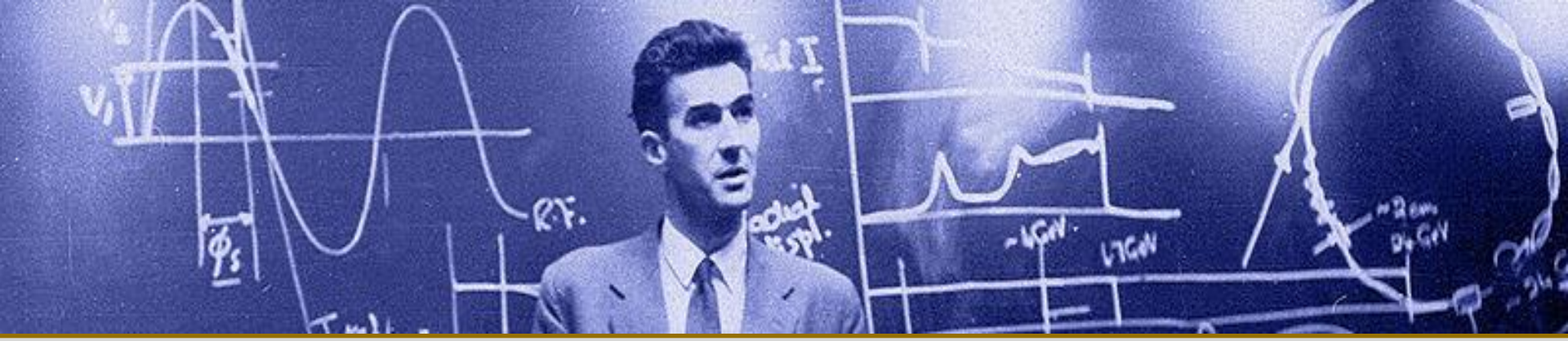


Update on Education & Training and Public Engagement at JAI

Emmanuel Tsesmelis
CERN & JAI University of Oxford

JAI Advisory Board 2026
16 April 2026

Introduction

- The JAI programme is organised around three pillars:
  - Research & development for advanced and novel accelerator technology.
  - Training of next generation of accelerator scientists in accelerator techniques.
  - Advanced accelerator applications in science & society, impact and public engagement / outreach.

EDUCATION AND TRAINING

Guiding Strategy

- Training in accelerator science & technology is **one of the pillars** of JAI mission and recognised by JAI Advisory Board to be **world-leading**.
- Objective is to **develop skills** of next generation accelerator scientists.
- JAI has provided **graduate & undergraduate training** in accelerator science & technology since first course delivered in 2005 (**for more than 20 academic years**).
- Students participate in **comprehensive core formal training** through **academic courses & projects** and 3 years of cutting-edge **research** at state-of-the-art facilities (national & international).
- Many JAI academic staff invited to give courses & lectures at **international accelerator schools**.

JAI Graduates & Careers

- JAI training is **well aligned with STFC strategic aims** to address national demand for **scientifically-skilled workforce** to sustain UK's world-leading position in research & technology and JAI's unique aspect of **academic training** for PhD students as addressed in ***2017 STFC Accelerator Strategy Review & 2019 Accelerator Programme Evaluation***.

- **PhD graduates total more than 130**; all obtained **fruitful employment**; about **20% female**.

  - Alumni consistently pursue **careers in science & technology**
    - Destinations include **research positions** in universities, ASTeC, BNL, CERN, CI, DESY, LBNL, LLNL, NPL, RAL, SLAC, PSI etc.
    - Some reached **full academic positions;** about **15% work in industry**.

JAI CERN Fellows / Staff

2011:
Robert Apsimon
Ben Constance
2015:
Ewen Maclean (now staff)
2016:
Davide Gamba (now staff)
2017:
Neven Blaskovic
Alex Gerbershagen (staff)
2019:
Michele Bergemaschi
Swann Levasseur
Leon van Riesenhaupt

2020:
Jan Paszkiewicz
Eugenio Senes
2021:
Andrey Abramov
Rebecca Ramjiawan
2022:
Daniele Butti
Luke Dyks
Lawrence Wroe

22 Fellows + 5 Staff in ATS
2 Fellows now Staff

2023:
Jake Flowerdew
Helen Guerin
Collette Pakuza
Pablo Arutia Sota (staff)
2024:
Max Topp Mugglestone
Laurence Nevay (staff)
Rebecca Taylor
2025:
Florian Stummer
Daniel Harryman (staff)
2026:
Jack Salvesen
Bjoern Lindstrom (staff)

Graduate Destinations – Research Institutes

- Since JAI foundation in 2004: **>130 PhD graduates** (+ 48 in progress)
- Graduates secured positions at: e.g. CERN, DESY, ESS, SLAC, FNAL, BNL, LBNL, STFC, universities

CLF:	Nicolas Bourgeois, Steven Dann, Kirill Fedorov, Benjamin Spiers, Christopher Thornton
Diamond:	Ian Martin, Lorraine Bobb, Neven Blaskovic
ISIS:	Ben Pine, Rob Williamson, Steven Brooks, Scott Lawrie, *Ciprian Plostinar*
DESY:	Andreas Walker, Rob Shalloo, Emily Archer, John Dale, Tony Hartin, Jon Wood, Kristjan Poder
MAX IV:	Steve Molloy, Francis Cullinan, *Neven Blaskovic*
ESS:	*Neven Blaskovic*, *Ciprian Plostinar*
PSI:	Alex Gerbershagen
SLAC:	Christine Clarke, Glen White, Robbie Watt, Elias Gerstmayr, Savio Rozario
Fermilab:	Rob Ainsworth
BNL:	Christina Swinson
LBNL:	Tony Gonsalves, Alex Picksley
LLNL:	Johannes Van de Wetering

Imperial College London

ROYAL HOLLOWAY UNIVERSITY OF LONDON

UNIVERSITY OF OXFORD

Group Leaders

Rob Williamson 2023
Accelerator Physicist Group Leader at ISIS, STFC

Ian P. S. Martin 2011
Head of Accelerator Physics Group
Diamond Light Source

prof. A. (Alexander) Gerbershagen 2013
Head of Particle Therapy Research Center (PARTREC),
Team Leader for Accelerator and Radiation Physics
university of groningen

Lorraine Bobb
Head of Diagnostics, DLS

Ciprian Plostinar
Head of Accelerator, ESS

Stephen Molloy 2006
Head of Accelerator Operations at MAX IV Laboratory
Lund, Skåne län, Sverige · Kontaktinformation
703 följare · Fler än 500 kontakter

Jonathan Wood 2016
Deutsches Elektronen-Synchrotron DESY: Hamburg, DE
2024-01 to present | Teamleader for beam-driven plasma acceleration (MPL)
Employment

Rob Shalloo
Emmy Noether Group Leader | Plasma Accelerator Physicist
Hamburg, Hamburg, Tyskland · Kontaktinformation
DESY
University of Oxford

Kristjan Põder 2016
Lead of Plasma Accelerator Application development at DESY

UCL HEP Group
https://www.hep.ucl.ac.uk › ~jolly › SimonJollyCV
Prof. Simon Jolly – Curriculum Vitae
Leader of the UCL High Energy Physics Proton Beam Therapy group investigating novel detectors and diagnostics for quality assurance and imaging.

Imperial College London
ROYAL HOLLOWAY UNIVERSITY OF LONDON
UNIVERSITY OF OXFORD

University Faculty

UCL HEP Group
https://www.hep.ucl.ac.uk › ~jolly › SimonJollyCV
Prof. Simon Jolly – Curriculum Vitae
Leader of the UCL High Energy Physics Proton Beam Therapy group investigating novel detectors and diagnostics for quality assurance and imaging.

Charlotte Palmer 2011
Dr
Lecturer, **School of Mathematics and Physics**
Centre for Light-Matter Interaction (CLMI)
QUEEN'S UNIVERSITY BELFAST

A/Prof
Suzie Sheehy 2010
Associate Professor in Medical Accelerator Physics
School of Physics

Dr Robert Apsimon Lancaster University
Senior Lecturer in Electronic Engineering

Matthew Streeter 2013
Dr
Royal Society Univ Research Fellow, **School of Mathematics and Physics**
for Light-Matter Interaction (CLMI)
://orcid.org/0000-0001-9086-9831
Email
QUEEN'S UNIVERSITY BELFAST

prof. A. (Alexander) Gerbershagen 2013
university of groningen
Head of Particle Therapy Research Center (PARTREC),
Team Leader for Accelerator and Radiation Physics

William Shields
- Centre for Particle Physics and Astronomy
- Lecturer in Accelerator Physics, Department of Physics

Dr Christopher Arran Lancaster University
Lecturer in Ultrafast Beams and Phenomena 2018

Imperial College London
ROYAL HOLLOWAY UNIVERSITY OF LONDON
UNIVERSITY OF OXFORD

Graduate Destinations – Commerce / Industry

Michael Davis	UBS
Alex Savin	Patent lawyer
Peter Tudor	Metaboards Oxford
Alex Lyapin	Oxford Quantum Circuits
Talitha Bromwich	Wild Business
Rebecca Ramjiawan	Luffy AI
Gavin Cheung	Sports analyst
Theodorus Christodoulou	Lab4Crypto (startup)
Gian Luigi D'Alessandro	Unakin (AI startup)
Dan Harryman	Tokamak Energy
Carlo Mussolini	Fractile (startup)
Alexander von Boetticher	Cogram (AI starup)
Muhammad Kasim	Living Optics (startup)
Aimee Ross	ASML
Cary Colgan	Tokamak Energy
Jan-Nicolas Gruse	D-Fine
Jan Paszkiewicz	Infleqtion UK
Kristian Poeder	Mu-ray.tech

Graduate Accelerator Physics Course
Term I October-December 2025

Lectures (24)
Types of Accelerators*
Applications of Accelerators*
Live Connection – LHC Control Centre*
Transverse Optics (2)
Longitudinal Dynamics
Momentum Effects
Lattice Design
Hamiltonian Dynamics (2)
Beams & Imperfections
Basic Plasma Physics Concepts for Plasma Accelerators
Plasma-based Electron Acceleration
Plasma-based Ion Acceleration
RF Cavities (4)
Beam Diagnostics & Instrumentation
Synchrotron Radiation
Wigglers & Undulators
Radiation Damping & Excitation (2)
Parameters for *Muon Collider RCS* Student Project

Exercise Classes (6)
Introduction to Accelerators*
Transverse Dynamics
Longitudinal Dynamics
RF Cavities
Hamiltonian Dynamics
Synchrotron Radiation

** Combined Particle Physics & Accelerator Physics cohort*

Course carried out in hybrid format (in person & Zoom)

Visit to Diamond Light Source (or ISIS) at the beginning of academic year

Graduate Accelerator Physics Course
Term II January-March 2026

Lectures (22)
Magnet Design (2)
Non-linear Dynamics (2)
Beam-beam Effects
Space Charge Tune Shift
Injection, Beam Transport and Extraction
Linear Colliders (4)
Instabilities (2)
Beamlines for Fixed-target Experiments
Cyclotrons for Various Applications
Particle Sources
Free Electron Lasers
Vacuum and Surface Science
Accelerator Science & Particle Therapy
Introduction to Radiobiology & its Applications to Accelerator Science
Particle Accelerator Sustainability
Commercialisation of Accelerator Technologies

Exercise Classes (2)
Magnet Design
Introduction to *Muon Collider RCS* Student Project

Tutorials (6)
Muon Collider RCS Student Project

JAI Seminar (1)
Muon Collider RCS Student Project

Course carried out in hybrid format (in person & Zoom)

Graduate Accelerator Physics Course 2025-2026

- Number of Students
  - **University of Oxford**
    - JAI Accelerator Physics (2)
    - Atomic & Laser Physics (Plasma Physics, 1)
    - Particle Physics* (10) - Only first three lectures, first tutorial & DLS visit in Term I
  - **Royal Holloway, University of London** (1)
  - **Imperial College London** (2)

- One UCL student audited lectures

Accelerator Design Project

- Accelerator Design Study for
  - **FCC-ee Positron Damping Ring:** 2022-2023
  - **LhARA Stage I:** 2023-2024
  - **HALHF:** 2024-2025
  - Design work consisted of study of the lattice, magnet systems and RF cavities.

"The design project significantly contributes to the value of a PhD at the JAI and is a very effective learning tool ... it played an essential role in helping me to find a postdoc."

"To me, the design project was by far the best part of the course. It puts the material taught into context and bridges the gap between lectures ... and a DPhil project ... ."

2024-2025: HALHF

Design Report to be published on CDS and students delivered JAI Seminar (March 2025) and visit to CERN (July 2025)

2025-2026: Muon Collider RCS

Design Report to be published on CDS and students delivered JAI Seminar on 12 March 2026; Visit to CERN planned for 3 July 2026

Consolidated Accelerator Course

- Graduate lecture course includes **plasma research training**.
  - Lectures provided by ICL, as part of development of **integrated accelerator-laser-plasma training,**
  - Training in **'Centre for Postgraduate Training in Plasma Physics & High Energy Density Science'** – established in 2014 by ICL, Oxford, and Warwick.
  - **Plasma-related** lecture courses also provided in Oxford.
- Graduate students take **additional courses in related subjects** – statistics, EM, safety, particle physics and astrophysics.
- Universities offer **courses on transferable skills** – Research Management, Critical Thinking, Personal Effectiveness, Research Skills & Techniques, Written & Oral Communication, Team Working, Career Development, Entrepreneurship, Ethics, and Advanced IT.

- **Lecturers & Instructors**
  - J. Bauche (CERN), M. Dosanjh (Oxford), M. Fraser (CERN), H. Garcia-Morales (CERN/Oxford), A. Gerbershagen (Groningen/Oxford), D. Kelliher (RAL), B. Kyle (RAL), S. Mangles (ICL), I. Martin (Diamond/Oxford), Z. Najmudin (ICL), S. Patel (RAL), C. Plostinar (ESS), D. Posthuma de Boer (RAL), M. Schippers (PSI), P. Tait (Oxford), **O. Tarvainen (RAL)**, F. Tecker (CERN), E. Tsesmelis (CERN/Oxford), H. Wakeling (Oxford), Rob Williamson (RAL)
  - Lecturers / instructors from **JAI universities** and from external institutes – **CERN, Uni. Groningen, DIAMOND, ESS, PSI, RAL**.

JAI Student Resources

- **Student Handbook** provides information to the students of the training programme in accelerator science at JAI.
  - Syllabus & course content, course resources, assessment, evaluation, recommended textbooks.
  - Supplementary information (public engagement, lecture series, summer student programme etc.)
- Dedicated site on **INDICO**
  - https://indico.cern.ch/category/5869/
  - Timetable, slides / documents, Zoom connection


John Adams Institute for Accelerator Science

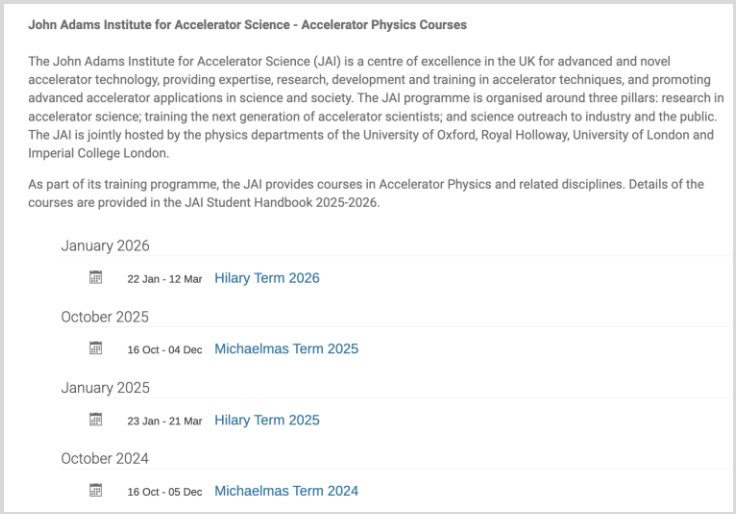
Education & Training in Accelerator Science

Student Handbook
and Programme Syllabus

2025-2026

September 2025

John Adams Institute for Accelerator Science


John Adams Institute for Accelerator Science - Accelerator Physics Courses

The John Adams Institute for Accelerator Science (JAI) is a centre of excellence in the UK for advanced and novel accelerator technology, providing expertise, research, development and training in accelerator techniques, and promoting advanced accelerator applications in science and society. The JAI programme is organised around three pillars: research in accelerator science; training the next generation of accelerator scientists; and science outreach to industry and the public. The JAI is jointly hosted by the physics departments of the University of Oxford, Royal Holloway, University of London and Imperial College London.

As part of its training programme, the JAI provides courses in Accelerator Physics and related disciplines. Details of the courses are provided in the JAI Student Handbook 2025-2026.

January 2026

22 Jan - 12 Mar Hilary Term 2026

October 2025

16 Oct - 04 Dec Michaelmas Term 2025

January 2025

23 Jan - 21 Mar Hilary Term 2025

October 2024

16 Oct - 05 Dec Michaelmas Term 2024

Graduate Student Funding

- JAI is included in **STFC quota** PhD studentships scheme
  - **Prior to 2026**, JAI received **three studentships per year** (exceptionally four in 2024).
  - For **2026,** this has been reduced to **two studentships**.

- This **leverages additional funding sources** allowing JAI to recruit a few additional PhD students / year.
  - **Various funding sources** include most recently JAI universities + grant, the Royal Society, EPSRC Industrial CASE & Centres for Doctoral Training, the CERN Doctoral Student programme, ISIS, Diamond Light Source, the Ada Lovelace Centre, and the Central Laser Facility.
  - Successful in collaborating with external universities through **cooperation agreements**, such as University of Oxford with Humboldt University, Berlin, whose students have attended the JAI course, and other non-UK sources. Discussing with Humboldt University to re-launch collaboration.

Continue to explore wide range of possibilities for sustainable funding.

JAI / CERN Doctoral Students

2010:
Alex Gerbershagen
2012:
Davide Gamba
Jack Roberts
2015:
Swann Levasseur
2016:
Chetan Gohil
Pierre Korysko
Jan Paszkiewicz
2017:
Eugenio Senes

2018:
Gian Luigi D'Alessandro
Luke Dyks
2019:
Daniele Butti
Helene Guerin
Carlo Mussolini
2020:
Robert Murphy
Pablo Arutia Sota
Rebecca Taylor
2021:
Florian Stummer

2022:
Sasha Horney
Emily Howling
Vlad Musat
Jack Salvesen
2024:
Lewis Kennedy
Giusy Passarelli
2026:
Federica Murgia

24 Doctoral Students

New Graduate Students 2026-2027 Academic Year

- **Oxford**
  - Federica Murgia: Beam physics models for CERN accelerator complex (P. Burrows); CERN Doctoral Studentship + JAI Grant + Physics Dept. funding
  - Robert Simpson: Intense hadron beams (A. Oeftiger); ISIS + GSI + Particle Physics funding
  - Markus Soerqvist: Beam-driven WFA (R. D'Arcy); STFC + EU + Particle Physics funding

- **ICL**
  - N.N.

- **RHUL**
  - Recruiting to one studentship; 2/3 STFC funding.

Process for graduate student selection on-going at JAI universities

Matching funding and international fee waivers to support non-UK applicants for CERN Doctoral posts are increasingly difficult to obtain from UK universities.

Number of JAI Incoming 1st-Year Graduate Students

Academic Year	Number of Students
2026-2027	OXF (3), RHUL (1), ICL(?)
2025-2026	6
2024-2025	9
2023-2024	10
2022-2023	13
2021-2022	7
2020-2021	7
2019-2020	9
2018-2019	7
2017-2018	7
2016-2017	7

Students that have **completed the full first-year graduate course** (including the student design project)

2022-2023 & **2023-2024** were **exceptional years** due to successful funding from sources beyond STFC quota.

Undergraduate Accelerator Physics Courses

- RHUL
  - Short option course (12hr) for 3rd year students.
  - Annual intercollegiate course for 4th year MSc students from the University of London and as well as BSc/MSc project students.

- University of Oxford
  - Undergraduate course was revised and becomes available as of 2025-2026 academic year.
    - ‘Short option’ in Year 3, consisting of 12 lectures (6 detectors and 6 accelerators).
  - 4th year undergraduate projects undertaken annually (e.g. plasma accelerators, medical accelerators).

Expect programmes to attract undergraduate students to accelerator science.

Undergraduate Accelerator Physics Summer Student Internships

- Oxford University
  - Internship Programme (CERN in July/August annually; **around 25 students** have joined programme since its launch in 2014).
    - **Two students** to join **CLEAR** accelerator project supervised by Oxford faculty & graduate students in 2026.
    - Participate in **CERN Summer Student** lecture series & in accelerator project.
  - Sub-department of Particle Physics Internship Programme

- Imperial College
  - Around **4 students** appointed annually.
  - Spend 8 weeks working at **Imperial College & RAL**.

- RHUL
  - Around **2 students** appointed annually.
  - Carry out research work at **RHUL**.

Expect programmes to attract undergraduate students to accelerator science.

UK Accelerator Institutes Seminar Series

- JAI, together with ASTeC and the Cockcroft Institute, organise jointly the **UK Accelerator Institutes Seminar Series** https://indico.cern.ch/category/13863/
  - Delivered by distinguished speakers from the participating institutes and from laboratories / universities world-wide.
- Seminars held in person and via videoconference and scheduled so that the graduate student body can attend.

Latest Session in January – March 2026

Title	Speaker
Muon Collider Progress and Plans	Daniel Schulte (CERN)
British Cryogenic Council Prize Talk – From Bulk Niobium to Thin Films: Advancing SRF with High Throughput Cryogenic RF Characterisation	Daniel Seal (Lancaster University)
LUXE: A New Experiment to Study Non-perturbative QED and Searcg for New Particles in Electron-Laser and Photon-Laser Collisions	Mathew Wing (UCL and DESY)
Upgrade of the CMS Experiments for HL-LHC	Anne Dabrowski (CERN)
A 100 Hz, 10 TW Laser Facility at QUB for Fundamental Science and Applications	Gianluca Sarri (Queen's University Belfast)

External Training Commitments (Abridged)

- JAI academic staff invited to provide training & to contribute to various international forums:
  - EU Integrating Activity Projects on Training, Communications & Outreach in Accelerators – TIARA 2011-2014, ARIES 2017-2021, I.FAST 2021-2025 (P. Burrows serves as WP Leader). Will coordinate new European panel on education & training in accelerator science – EPITA.
  - TIARA - Chair of Task Force on Training in Accelerator Science for Europe (P. Burrows).
  - CERN Accelerator School CAS (various JAI faculty and staff, P. Burrows serves on CAS AB).
  - Joint Universities Accelerator School (JAI is partner institute, P. Burrows serves on JUAS AB).
  - US Particle Accelerator School (USPAS, various JAI faculty and staff).
  - Cockcroft Institute graduate accelerator physics course (S. Gibson).
  - University of London intercollegiate undergraduate & graduate accelerator physics courses (S. Gibson, P. Karataev).
  - University of Melbourne Medical Accelerator Physics Programme (S. Sheehy).
  - Nanyang Technological University undergraduate lectures on accelerator physics (E. Tsesmelis).
  - Culham Summer School on Plasma Physics - Laser Wakefield Accelerators (S. Mangles)
  - EuPRAXIA-DN School on Plasma Accelerators, Introduction to Plasma Diagnostics, (Z. Najmudin)
  - Winter School on Intense Laser Science WiSILS 2024), Indian Institute of Technology (Z. Najmudin)
  - Public IOP Evening Lecture on Sustainable Accelerators (H. Wakeling)
  - Public lecture on STELLA at the Pontifical Academy of Sciences in Vatican (M. Dosanjh)

Future Programme - Training

Proposal & plan for the future education & training programme at JAI:

- Continue to **deliver an outstanding training programme** both within JAI and via our contributions to CAS, JUAS and other schools.

- Consolidate, strengthen and augment our programme by:
  - further **integrating lectures and seminars** across our three universities;
  - augmenting focus on **sustainability** in accelerator design and construction;
  - strengthening focus on **commercialisation and impact**;
  - linking to dedicated **training in AI/ML techniques** provided via our universities.

- Continue to promote a pipeline of graduate students via our **undergraduate portfolio** of courses, summer internship programmes and research projects.

- Aim to strengthen our collaboration on training with the **CI on advanced topics** and to continue support of the **UK Accelerator Institutes Seminar Series**.

- Continue to support student participation in relevant specialised **external training** courses (e.g. Advanced CAS) and presentation of their research work at **international conferences and workshops**.

PUBLIC ENGAGEMENT

Introduction

- JAI continues to develop its high-profile, in-person public engagement in post-Covid environment.
- Covid pandemic devastated in-person events, throwing them into online events.
- In-person events have reached pre-pandemic levels.

Public Engagement & Schools

- **Accelerator and Particle Physics Education at A-Level (APPEAL)**
  - Regular training since 2010

- APPEAL-11 2025: ***Accelerators for Particle Therapy in Medicine***

APPEAL-11 in 2025 at Oxford

Consisted of **lectures** and **MasterClass**

- **Outreach in Schools**

'Particle Accelerators: from Higgs Bosons to Curing Cancer' for Visiting Students from China & at University of the Third Age (P. Burrows; 1200 attended).

'Einstein's Universe' at Marlborough College (B. Foster; 300 attended)

Public Engagement & Students

Pilot initiative by
Suzie Sheehy & Hector Garcia Morales

Next session planned for **July 2026 at CERN**

Science Communication Lectures & Workshops for JAI DPhil Students

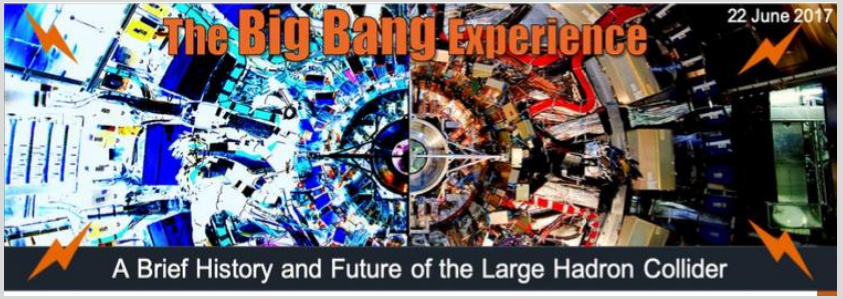
Underlined the importance of:

- **Communication skills** are essential.
- Use of Elements of **Storytelling**.
- Engage with **different audiences**.
- **Writing** is special.
- **Trust, ethics and uncertainty** in scientific narratives.

Public Engagement & The Big Bang Experience!

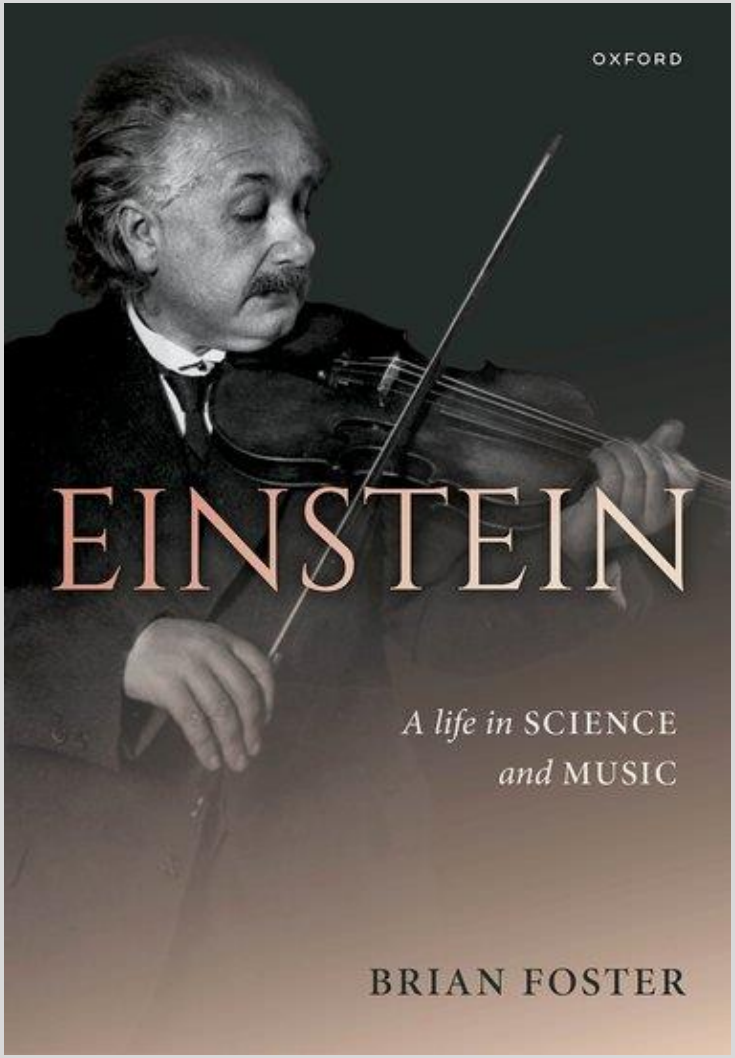
- Brief history and future of the LHC revealing wonders of the LHC at CERN and how it is unravelling mysteries of the universe.

- Big Bang Experience at **British Science Week** (March 2025)



S. Gibson (RHUL)

Public Engagement & Literature



Einstein: A Life in Science and Music by Brian Foster

Comprehensive survey of Einstein's contributions to physics.

Public Engagement & Festivals

8-9 June 2025 at Imperial

9 July 2025 at Imperial

Great Exhibition Road Festival (June 2025)

- Hugely successful event
- 700+ visitors over 2 days

Imperial-CNRS event

- Visit by French President Emmanuel Macron

THE ROYAL SOCIETY

LhARA will exhibit at the Royal Society, June/July 2026

Summer Science Exhibition 2026

OXFORD MAY MUSIC

May 2025 (16th season) – B. Foster

4-day event with attendance of around 900.

Public Engagement & Festivals

Resistance is Futile: The Rise of Superconductors (Including Accelerators)

Recurring, popular live physics demonstration and lecture topic, covering the fundamental properties of superconductors and showcases their "rise" from scientific curiosities to critical technological components.

At British Science Week and at RHUL Science Festival (S. Gibson and A. Casey, March 2026)

Public Engagement & International Forums

Hannah Wakeling & Suzie Sheehy are involved in this initiative

Created LinkedIn community for those interested in public engagement around accelerators.

Accelerator Engagement Ambassadors Initiative (IUPAP WG14)

The Accelerator Engagement Ambassadors Initiative invites passionate early- and mid-career researchers to help **bring the world of particle accelerators closer to society**.

The programme empowers volunteer ambassadors to design and deliver creative public-facing activities that highlight the **impact of accelerator science**.

Public Engagement & Medicine

SAPPHIRE Accelerator Training Workshop in Accra,13-16 April 2026

Proposal and Plan for Future

- JAI continues to be **leader in communicating accelerators & associated physics**.
- Activities for future include:
  - **Training days for teachers** (APPEAL – Accelerator and Particle Physics at A-Level) for science teachers.
  - Long-standing **schools programmes –** 'Particle Accelerators: from Higgs Bosons to Curing Cancer', 'Einstein's Universe' and 'Big Bang Experience'.
  - **High-profile collaborative public engagement** attracting new audience to science – Resistance is Futile, Accelerator Engagement Ambassadors Initiative

Summary

- JAI continues to deliver world-class accelerator science education & training and public engagement programmes.

  - Intense **accelerator physics course**.
  - Innovative and **educational accelerator design projects**.
  - **Successful placement of students** once they enter professional careers.
  - **Recognised and award-winning public engagement** activities with global reach - continue strengthening existing portfolio and encourage new & innovative ideas.