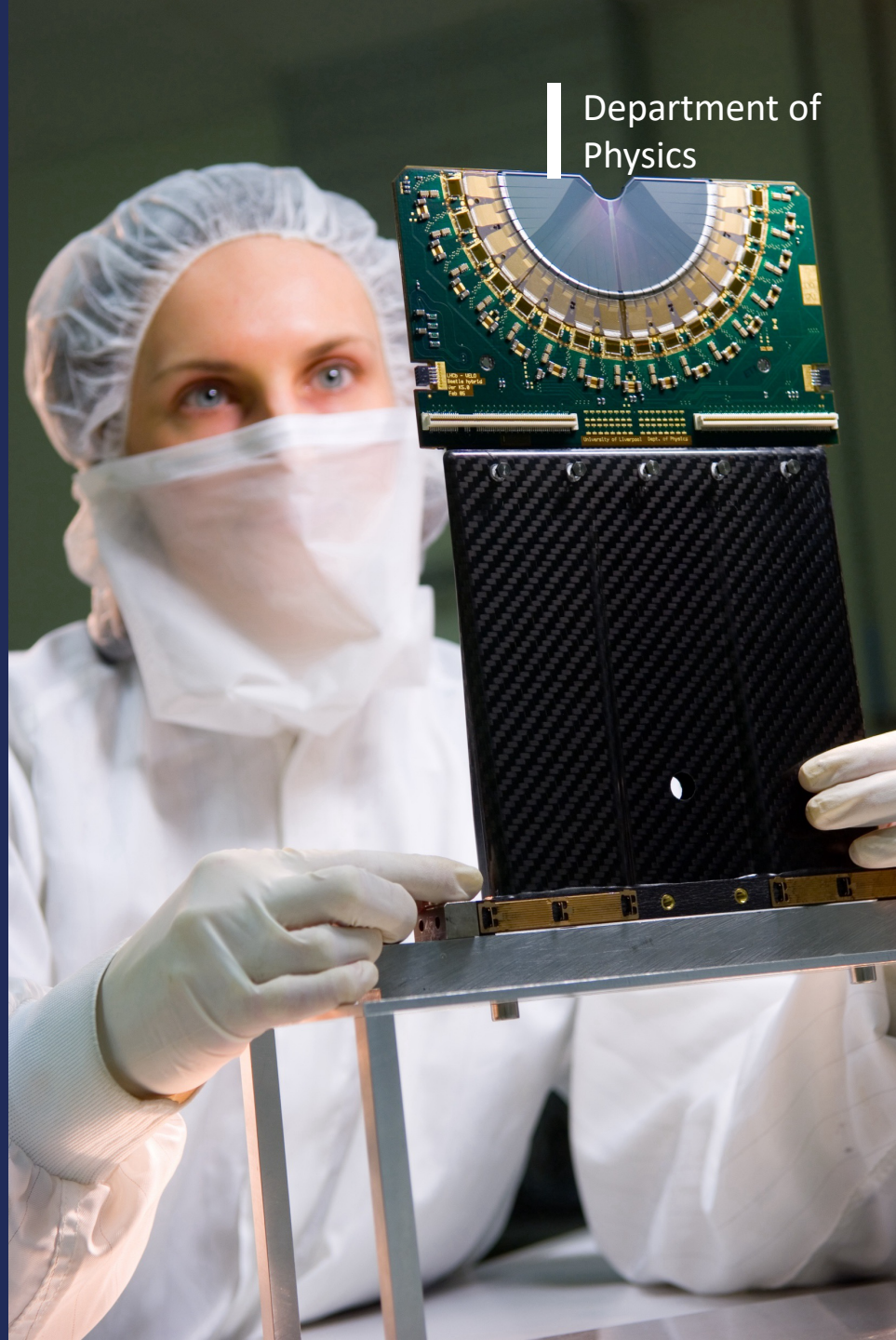
UNIVERSITY OF LIVERPOOL

Department of Physics

PHYSICS AT LIVERPOOL

OPEN DAYS JUNE 2025

SLIDES FROM JUNE 2025 open days, including shared experience of current and former students




Central Teaching Laboratories
You are here!
Grove St
A5048
University of Liverpool, Department of Chemistry
Materials Innovation Factory
Oliver Lodge Laboratory
Physics Department
University of Liverpool Department of Physics
Brett Building
University of Liverpool Beach Volleyball Court
Distributed Algorithms
School Of Physical Sciences
Chadwick Tower
Stephenson Institute for Renewable Energy
Institute for Risk and Uncertainty
Abercromby Square
Peach St

UNIVERSITY OF LIVERPOOL

LIVERPOOL JOHN MOORES UNIVERSITY

Department of Physics

OUR DEPARTMENTS

- **UK Top 10** for research quality & environment (REF2021); key partner of CERN
- **60 academic staff**
- 100 research staff and >120 PhD students
- 400 undergraduate students (all years)
- Projected intake: ~120 students

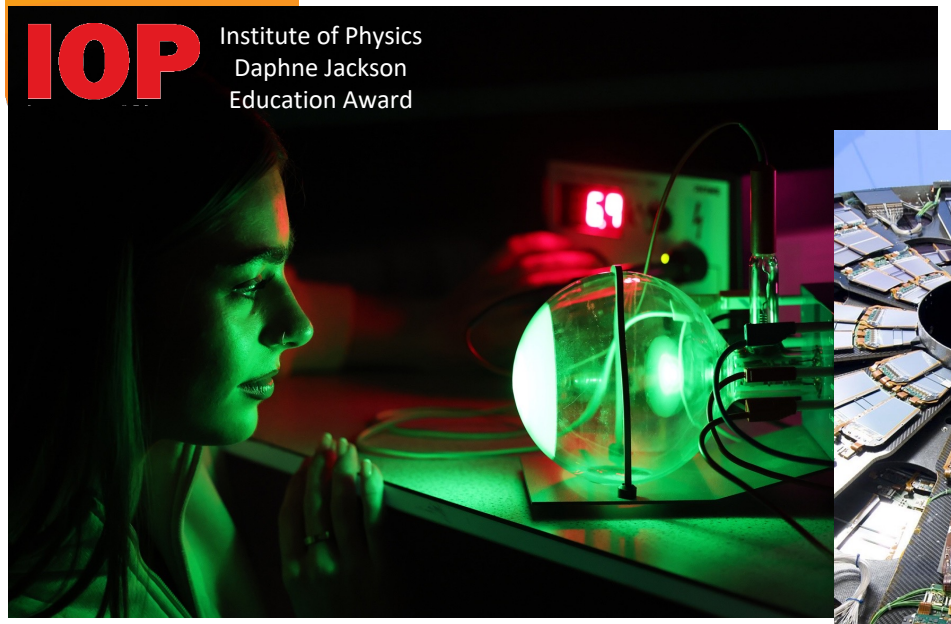
Liverpool students benefit from a close working relationship with academics and researchers (staff-student ratio ~7).

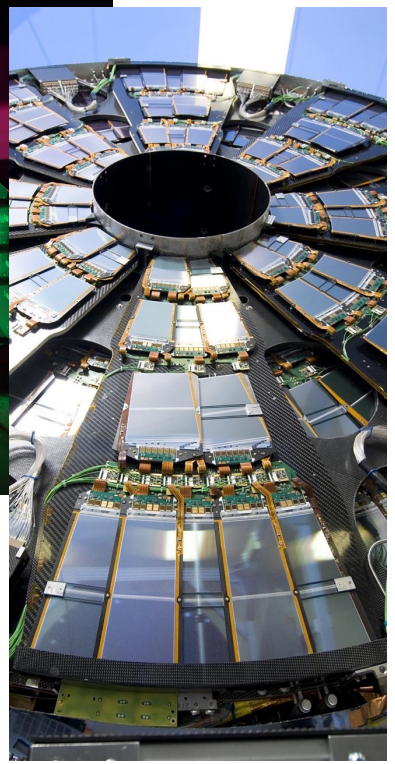
theguardian UNIVERSITY AWARDS

QS WORLD UNIVERSITY RANKINGS 2025

Global top 150 University

IOP Institute of Physics Daphne Jackson Education Award





Astrophysics **Medical** **Particle**

Education **Nuclear** **Accelerators**

Materials **Renewable energy**

Liverpool Physics ranked in UK's Top 10 by Shanghai Global Subject Rankings 2024

Our Universities ranked 2nd and 6th in UK by students on University Compare

https://universitycompare.com/rankings/all

TEF Gold

ENAs 2025 The North of England's most prestigious education awards

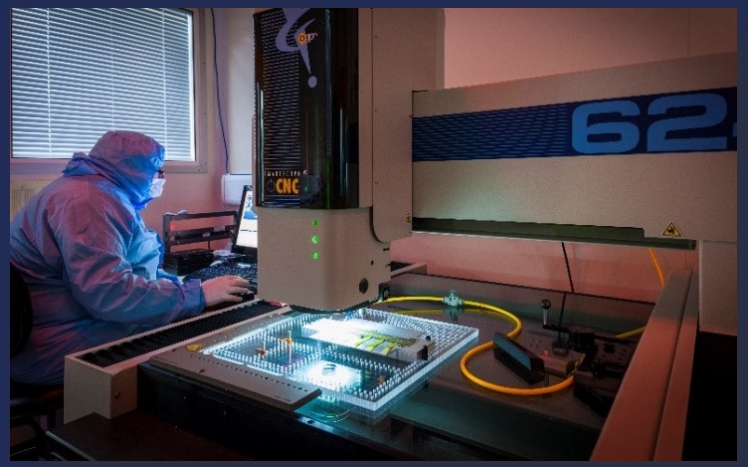
Winner University of the Year

UNIVERSITY OF LIVERPOOL

Department of Physics

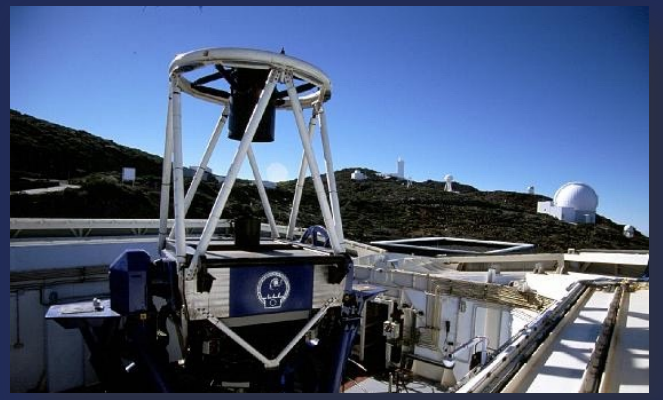
LIVERPOOL RESEARCH FACILITIES

Stephenson Institute for Renewable Energy
Fundamental research into energy conversion, storage, and enabling technologies

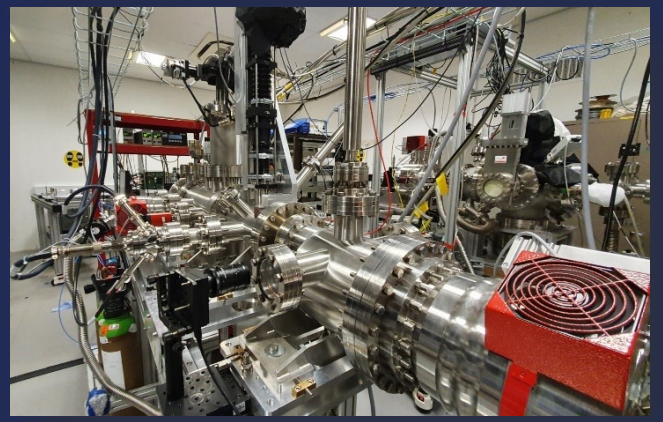


Liverpool Semiconductor Detector Centre
Clean room and mechanical workshop facility for the development of new detectors for particle, nuclear and astrophysics.

Tours available today!



Liverpool Telescope
World's largest, fully robotic telescope. Operated by the Astrophysics Research Institute (ARI) at LJMU, who deliver our astrophysics teaching.



Cockcroft Institute at Daresbury Laboratories
New accelerators for high energy, material science, medical and industrial uses

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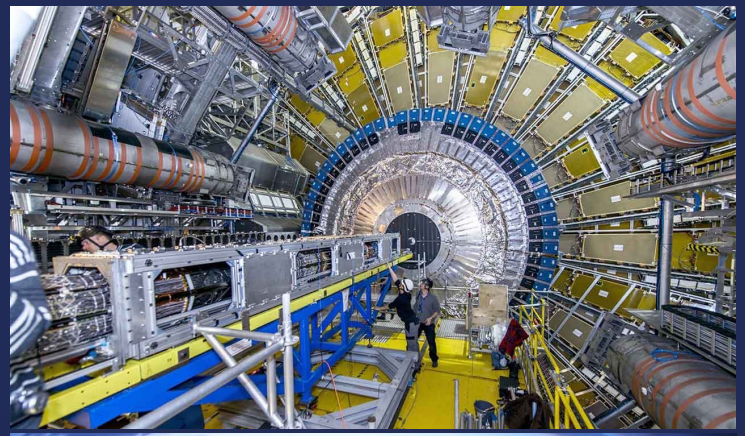
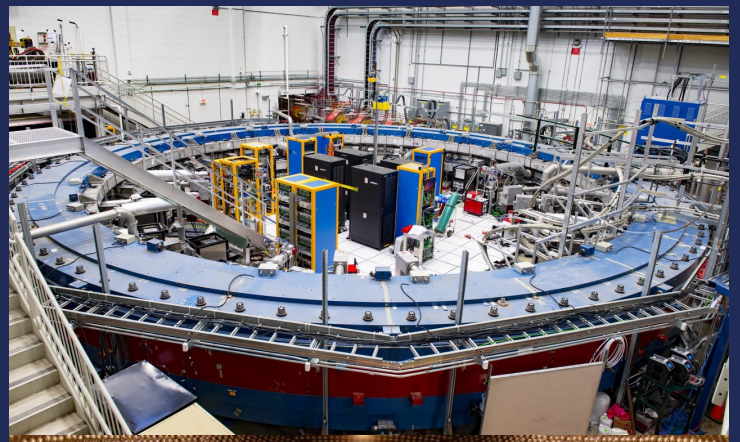
Department of Physics

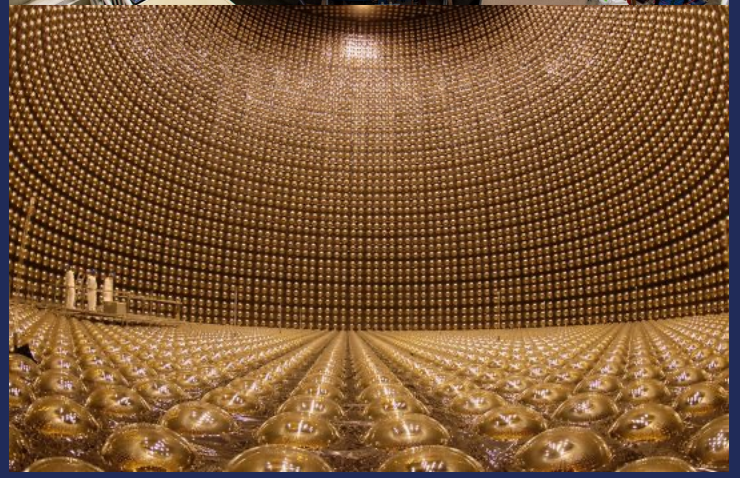
GLOBAL RESEARCH FACILITIES



CERN, Switzerland:
Our researchers play major roles in multiple collaborations at CERN across particle, nuclear and accelerator physics. We also build detectors for large experiments.

ESRF, France
Condensed matter physicists operate an experimental beamline at ESRF, performing a wide variety of material studies using a high-intensity light source.





Fermilab, USA
Liverpool physicists and technicians built key components of the Muon g-2 experiment that recently completed. They also perform neutrino experiments there.

J-PARC, Japan
Neutrinos are produced here and sent to experiments such as T2K and the future Hyper-K detector, which Liverpool physicists are helping to design, build and operate.

UNIVERSITY OF LIVERPOOL

Department of Physics

A LIVERPOOL PHYSICIST

Follow unique developmental pathway:

- Complex problem-solving
- Practical physics
- Computational physics
- Team working
- Effective communication

We offer more hands-on practical and project work than any other Russell Group university.

You will graduate with a highly desirable skillset, valuable in research and industry, as well as many other diverse roles.

liverpool.ac.uk/physics

STUDENT EXPERIENCE

ELLEN

Ellen Oldershaw

- A levels at The Long Eaton School, Nottingham
- Physics, Maths, English Literature.
- Graduated in 2024, now studying for a PhD
- F303 (Physics integrated masters - MPhys).
- Project: “An Investigation into Physics Degree Awards at UK Higher Education Institutions”

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LIVERPOOL JOHN MOORES UNIVERSITY

Department of Physics

DEGREES PATHWAYS

Career-focused pathways: Specialise when you're ready

- BSc and MPhys Physics
- MPhys Astrophysics
- BSc Physics with Astronomy
- BSc Physics with Medical Applications
- BSc Physics with Nuclear Science

Degrees offered with other departments

- BSc Physics and Mathematics
- MMath Mathematical Physics
- MPhys Theoretical Physics
- BSc Physics with Geophysics

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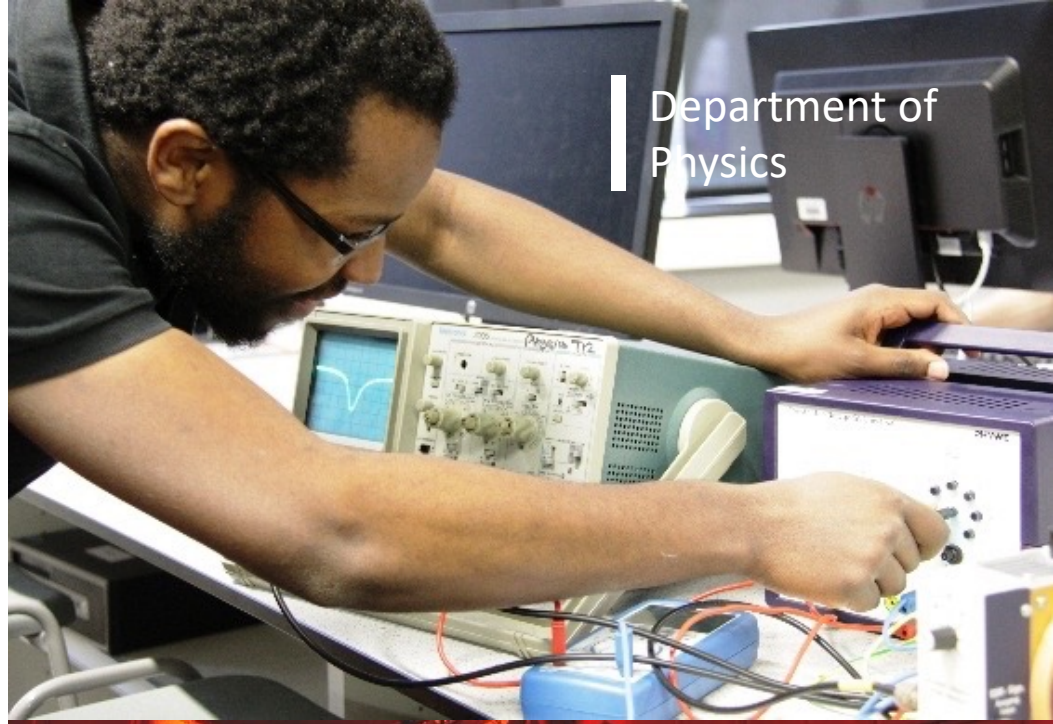

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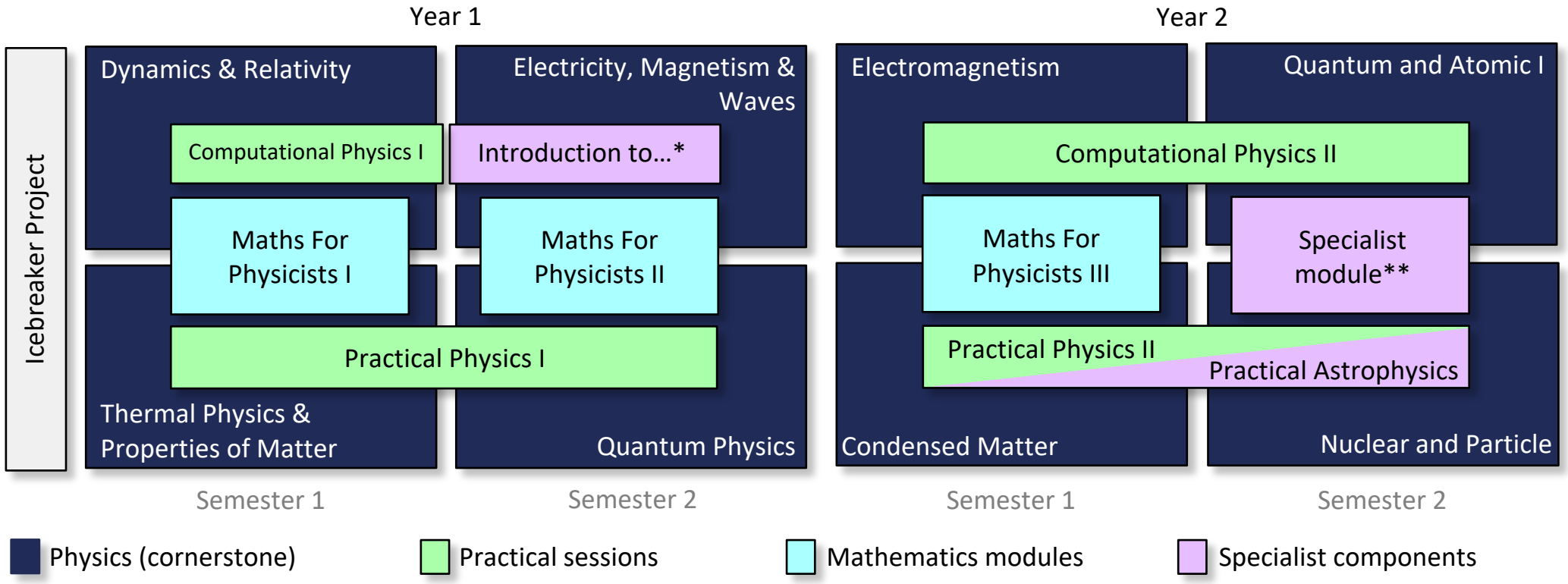
PROGRAMME STRUCTURE

Department of Physics



*Medical Physics/Nuclear Science/Astrophysics/Geophysics

**Mathematics for Physicists IV/Accelerators and Radioisotopes in Medicine/Stellar Structure

IOP Institute of Physics

- Fundamental Physics and core Maths in years 1 and 2
- Flexibility to transfer between programmes

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EXAMPLE TIMETABLE

	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
Mon	Thermodynamics		Private Study			Maths for Physicists	Computational Physics		
Tues	Private Study	Maths for Physicists	Dynamics and Relativity			Maths for Physicists	Private Study		
Wed	Dynamics and Relativity		Thermo-dynamics	Academic Advisor meeting	Private Study/Sports				
Thu	Maths for Physicists			Comp. Physics		Thermo-dynamics			
Fri	Practical Physics (Laboratory Work)				Practical Physics (Laboratory Work)				

~23 hours (~60%) contact time per week in year 1.

More time in later years to work on projects and study.

Lecture | Problems class | Lab work | Private study

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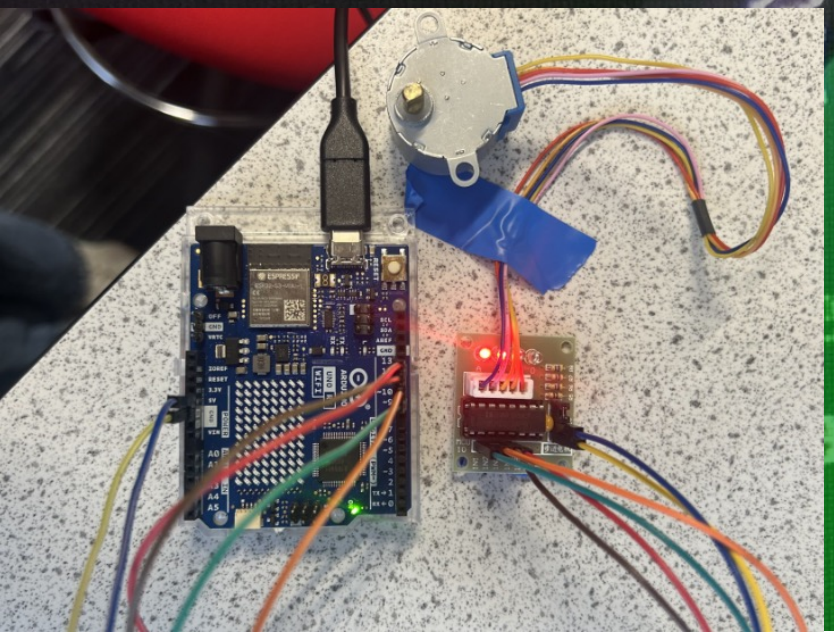
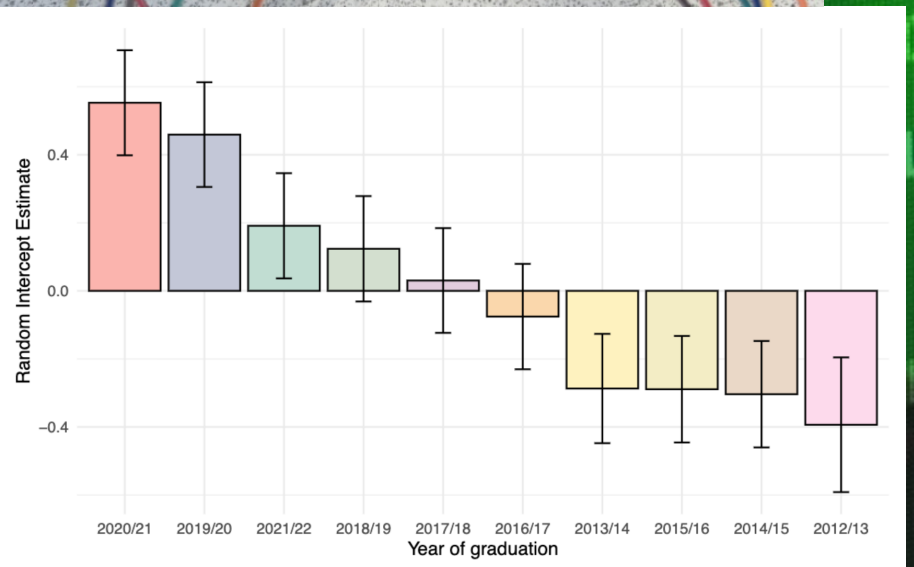
PHYSICS IN ACTION

Department of Physics





Full days in the laboratory

Building up skills in year 1

Utilising computational skills from other modules

Open-ended and group projects in year 2

Progression of skills that are key for employability

STUDENT EXPERIENCE

OLIVIA

Olivia Shuter

- A levels at Wakefield Girls High School, Yorkshire.
- Physics, Chemistry, Maths.
- Just finished final project and last exams.
- F303 (Physics integrated masters - MPhys).
- Project: “Translating Cancer Research to the Clinic”

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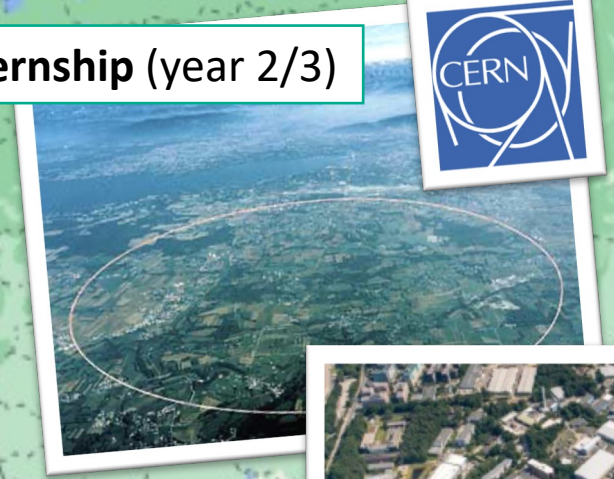
Summer internship (year 2/3)



Astrophysics field trip (year 2/3)

Programme options:
Year in industry
Year abroad
Year in China

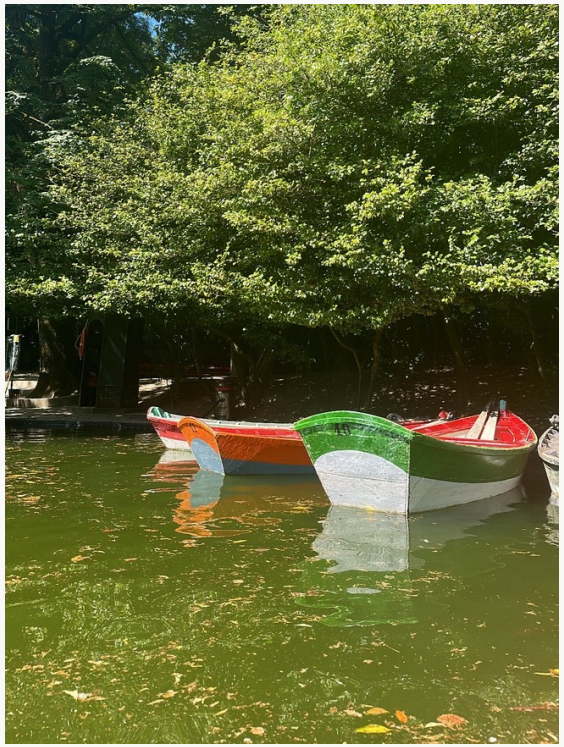
Global experiences

INTERNSHIP

LIP PORTUGAL

Spent 4 weeks at Laboratory of Instrumentation and Experimental Particle Physics (LIP) in Braga, Portugal.

Between Y2 and Y3 of the programme, in summer.



MY PROJECT

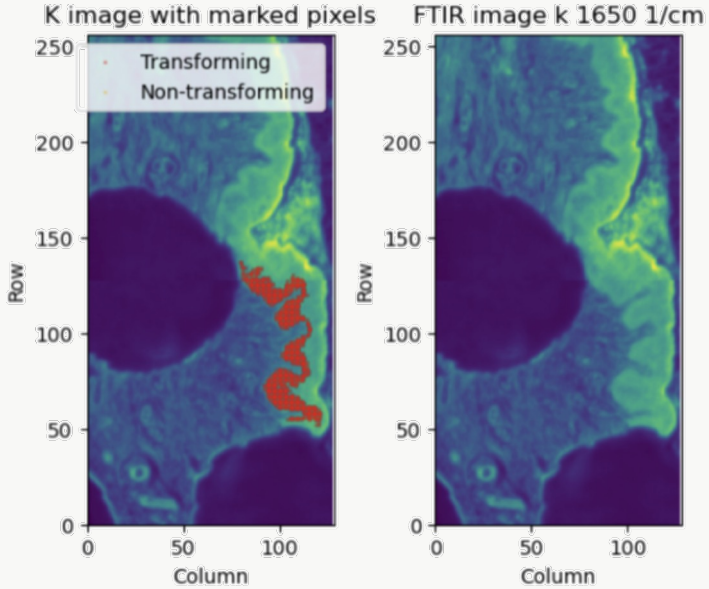
CONDENSED MATTER PHYSICS

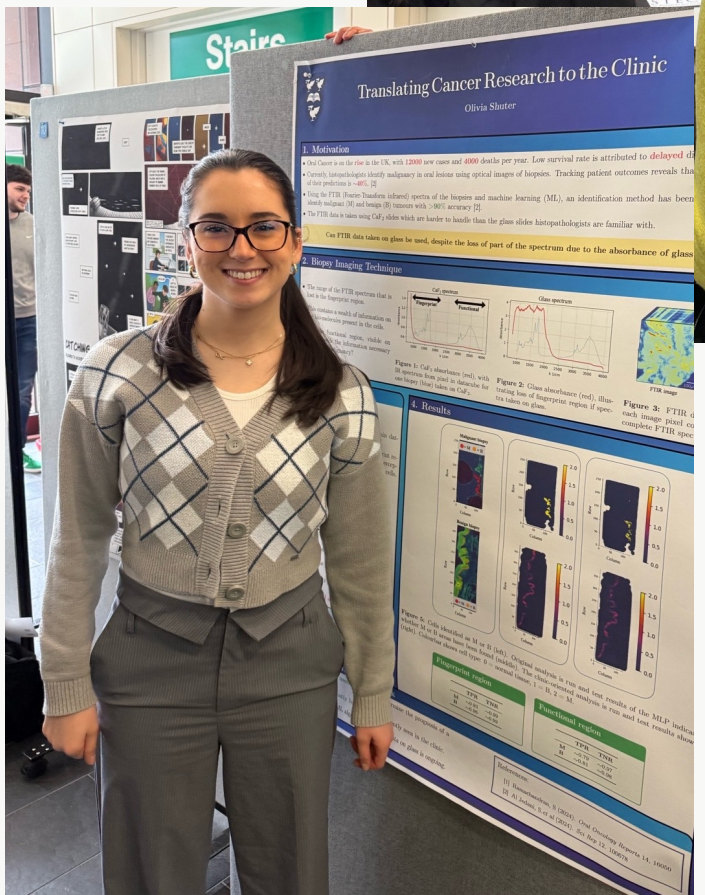
Translating Cancer Research to the Clinic.

Final-year project, working with academics, researchers and technicians in Physics.

Investigated Machine-Learning techniques to identify malignant cancer cells in biopsies using LIDR.

Visited Biobank to understand how biopsies are currently treated.





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LIVERPOOL JOHN MOORES UNIVERSITY

Department of Physics

UNDERGRADUATE RESEARCH PROJECTS

Particle physics
- Neutrinos
- Dark energy/matter
- Higgs boson
- Matter/antimatter
- Muons

Astrophysics
- Cosmology
- Star formation
- Stellar physics
- Novae & Supernovae
- Physics of galaxies
- Instrumentation

Nuclear physics
- New elements
- Spectroscopy of radioactive nuclei
- Neutron moderators

Accelerators
- Design of new accelerators
- High energy and materials science applications

Biophysics
- Molecular self-assembly
- Biological and medical application

Medical physics
- CT imaging
- Radiation shielding
- Proton therapy

Materials
- Novel semiconductors
- Nanomaterials
- Dielectrics

Renewable energy
- Solar cells and fuels
- Thermoelectrics

Physics Education
- Awarding gap analysis
- AI as a pedogogical tool

There are opportunities for projects with our research and industry partners too!

Unilever

Sizewell C
The power of good for Britain

NHS
The Christie
NHS Foundation Trust

CERN

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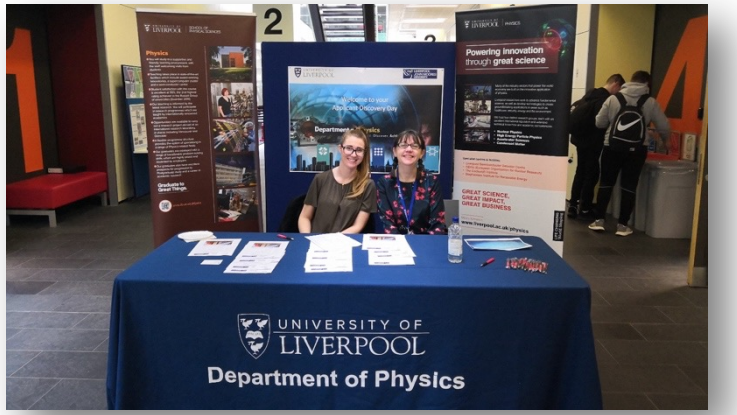
Department of Physics



STUDENT SUPPORT

- Dedicated **student support team** for Physics and Astrophysics.
- **Open Door Policy** for students to engage with teaching staff.
- **Academic Advisor** as your personal contact point throughout your degree.

Programmes designed with inclusive teaching at the forefront

- Anticipate and remove barriers to learning

Further support is provided by individually-tailored "support plans"

- A set of reasonable adjustments to enable you to achieve your potential

The department has a dedicated disability support contact

- Available to advise and discuss issues throughout your course

liverpool.ac.uk/physics

liverpool.ac.uk/studentsupport/disabled-students

UNIVERSITY OF LIVERPOOL

Department of Physics

STUDENT EXPERIENCE

Opportunities
Societies
Internships
SSLC
Events/Conferences
Outreach

IOP Institute of Physics

CONFERENCE FOR UNDERGRADUATE WOMEN AND NON-BINARY PHYSICISTS
23 – 26 MARCH 2023
LIVERPOOL

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STUDENT EXPERIENCE

UNIVERSITY OF LIVERPOOL

Department of Physics

THE CITY OF LIVERPOOL

- Great Atmosphere
- Over 50,000 students
- Most Museums and Galleries outside of London
- Very Friendly and Welcoming
- Campus is 10 min walk away from town
- Historic Docks near campus

UNIVERSITY OF LIVERPOOL

Department of Physics

WORKING WITH INDUSTRY AND EXTERNAL PARTNERS

Current and recent partners:

e2v Bringing life to technology

MICRON SEMICONDUCTOR LIMITED

Proton Partners International

CANBERRA

PILKINGTON

The Clatterbridge Cancer Centre NHS Foundation Trust

Sizewell C The power of good for Britain

The Royal Liverpool and Broadgreen University Hospitals NHS Trust

ascent

Undergraduate/PhD projects, and job opportunities for our students!

UNIVERSITY OF LIVERPOOL

Department of Physics

EMPLOYERS OF RECENT GRADUATES

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UNIVERSITY OF LIVERPOOL

Department of Physics

BLENDED LEARNING

A variety of teaching methods…

- Lectures and tutorials
- Laboratory work, involving group and open-ended projects
- Problem classes, peer learning guided by module leader
- Online and electronic resources

Delivered by dedicated and inspiring staff

- Research-led teaching: cutting edge physics delivered by global experts in their field.
- All teaching staff are Fellows or Senior Fellows of the Higher Education Academy (or in the process of becoming one)

UNIVERSITY OF LIVERPOOL

Department of Physics

PHYSICS AT LIVERPOOL

"I thoroughly enjoyed my time at Liverpool; the warmth and support from the staff was great."
Philippa, BSc Physics

"My Liverpool degree provided me with a solid grounding in the vast spectrum of physics whilst specialising in nuclear science."
Stefan, BSc Physics with Nuclear Science

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