

# Physics Education Research Cluster

*Liv.PER*

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# Department of Physics

Explore. Discover. Achieve.



# Physics Education Research Cluster

## Key Stats:

- Based in Oliver Lodge
- Four academics
- No PhD students/PDRAs – *so far!*
- Research largely funded through department's teaching.

# Challenges in Physics Education

## Challenges include:

- **Conceptual Understanding**
- **Engagement and interest**
- **Diversity and inclusion**

**Physics education research focuses on the teaching and learning of physics. It offers us a set of tools that enable us to better understand the challenges above, which can help in designing approaches that improve outcomes for learners.**

# Yasemin Kalender

Lecturer in Teaching Innovation

## Background

- PhD thesis: Investigating Female and Male Students' Motivational
- Characteristics and Performance in Introductory Physics
- Active Learning Initiative fellow at Cornell
- Assistant Director of Science Pedagogy at Harvard University

## Today

- focus on student motivation, equity and diversity in physics at all levels
- group work in lectures and lab courses
- sense of agency in hands-on learning spaces
- graduate teaching assistants' views and teacher identities.



# Faye Wearing

Lecturer in Medical Physics

## Background

PhD thesis: Shape Coexistence in the Highly Neutron-Deficient Nuclei  $^{175}\text{Au}$  and  $^{179}\text{Au}$

Trained as a clinical scientist and worked at the Clatterbridge Cancer Center (specialising in proton therapy).

## Today

Brings her specialist knowledge to co-leading the MSc clinical sciences programme.

Currently analysing CUWiP data.



# Andrew Low

Lecturer in Teaching Innovation

## Background

- MPhys in Theoretical Physics - Durham University.
- PhD in Theoretical Physics - QMUL.
- Secondary education teacher for 10 years.
- Highly successful YouTube channel.

## Today

Interests include:

- The ASCENTS project, supporting students from economic investment areas.
- Uncovering educational awarding gaps.
- Factors that impact student outcomes in physics.



# Chris Edmonds

Lecturer in Teaching Innovation

## Background

- PhD in particle accelerator physics
- Interest in making challenging concepts accessible to new audiences.
- Several large-scale public engagement initiatives.

## Today

Interests include:

- Enabling creative practice within physics learners.
- Engaging diverse audiences.
- Enhancing learner exploration of physics concepts.





# Physics Education Research Cluster

## Summary:

- Liv.PER is the latest cluster within the department.
- Unique position of cluster given everyone's interest in physics education.
- Happy to discuss ideas or initiatives with you!