



NPL - Training for Industry

National Physical Laboratory

Taking accountability and responding to the industry skills gap: NPL's PGI tailored training to prepare students for research in industry

The National Physical Laboratory (NPL) is responding to a national shortage in skilled research scientists by collaborating with industry to upskill graduate researchers.

NPL, through its strategic partnership with the Department for Science, Innovation and Technology (DSIT), the University of Strathclyde and the University of Surrey, has established the Postgraduate Institute for Measurement Science (PGI). The PGI trains researchers to master measurement science and good research practice so that these skills can be carried through into industry.

"Aside from performing exciting atomic physics, I really like that my research has close links to real-world applications and has the potential to be very impactful in industry." PhD researcher, University of Oxford, on the perks of their PhD topic.

Importance of good research practice

NPL believes that research scientists with a sound knowledge and understanding of research best practice, particularly around measurement and uncertainty, are essential to creating trust and confidence in data that leads to delivering the advancement and innovation required to meet the UK's industrial challenges.

Good measurement science reduces business risk throughout a product lifecycle and improves confidence and efficiency, enabling businesses to be more productive and effective for their end users.

What is the Postgraduate Institute for Measurement Science?

The Postgraduate Institute for Measurement Science establishes a route to real-world impact for researchers, through business partnerships and training. The PGI helps researchers develop a leadership mindset, enhancing their professional communication, presentation, scientific writing, problem-solving, and analysis skills.

The PGI is... *"shaping collaborative research and providing a portal for PhD engagement that is inclusive, sustainable and agile to partners across the globe."*

It also develops and adapts training material created by NPL, and elsewhere based on student and supervisor feedback to meet their actual needs, to ensure it offers optimum support.

The PGI's training is provided by world class scientists, academics, and practitioners, and covers four main categories which are critical to researcher development, whilst supervision is tailored to suit an individual's project.



The broader training programme includes:

1. Metrology - advanced training in measurement and critical measurement software training.
Teaching rigour when carrying out research.

2. Communication - includes workshops teaching researchers how to communicate their research effectively, improve their presentation skills, public speaking and effective writing habits. *Teaching effective communication of research across different environments.*

3. Research - core skills crucial for high-quality research, introduction to intellectual property, data integrity and reproducibility.
Teaching how to carrying out research in a honest and transparent manner.

4. Professional - transferable skills suitable for application outside research environments, networking and career development sessions.
Teaching skills that can be applied to support accessing research in industry.

Impact

The training element for the PGI, delivered by NPL, provides a clear impact on students, as many reported a greater understanding of best practice in research, and the importance of communication, as well as feeling more confident progressing with their research in industry.

"I now have a better understanding of managing and interpolating data which will help me apply better practices [to data analysis]." - Delegate attending Data Integrity Training Course

In parallel with the training offer, the PGI provides a nurturing environment that supports researchers' development and enhances their doctoral research experience.

"The sense of community and purpose, resources and networking opportunities provided by the university and those supported by NPL and GSK are second to none" - University of Edinburgh student describing the impact of the PGI on their PhD project.

The PGI has worked to bring the academic and industry research communities closer together, providing an opportunity for industry to benefit from the expertise of the research institutes and promoting appropriate rigour with all researchers. The PGI, of which there are now around 200 students engaging on NPL co-supervised projects in partnership with UK universities, has been effective in supporting students transitioning from academia to industry. NPL has employed 20% of PGI graduates, where they continue to make a positive impact on research and commercial activities, and over 41% of the PGI graduates now work in industry across a variety of roles.