Overview

My placement came about as part of a collaboration between Education Scotland and SUPA (Scottish Universities Physics Alliance). The placement lasted for three months and funding was generously provided by SUPA. I was based in Education Scotland’s Dundee office, with trips to Glasgow to meet colleagues. I also worked closely with SSERC and QuantIC (centre for excellence for quantum imaging).

The aims of the placement were to strengthen the partnership between Scottish schools and universities, to bring modern scientific research and applications into the school classroom, and to inspire a generation of learners to engage with science. As part of this, I was tasked to produce a number of resources to help physics teachers adopting the new Curriculum for Excellence, particularly at Higher and Advanced Higher.

Outcomes

• Webinars (in partnership with SSERC): presentations on aspects of the physics Higher/AH syllabus were delivered by academics. Teachers were invited to watch live and ask questions through an interactive dialog box. The recordings of the webinars were made available online after the event.
  - The double slit experiment, hosted by Miles Padgett (QuantIC) (23 Mar)
  - Quantum tunnelling, hosted by Sarah Croke (26 May)
  - Semiconductors, hosted by Chris Hooley (scheduled for 6 Sep)

• Video on the electron diffraction tube (in partnership with SSERC): video explaining the set up, safe operation and potential learning outcomes associated with the electron diffraction tube experiment. The video also can also act as a learning resource in those schools that don’t have access to the equipment being demonstrated.

• Claymations (in partnership with SSERC): short stop-animation videos explaining key concepts in quantum physics.
  - Quantum tunnelling
  - The uncertainty principle

• Flipchart video (in partnership with SSERC): hand-drawn animated video explaining the role of quantum tunnelling in radioactive decay

• Quantum buddies scheme (in partnership with QuantIC): development of a resource pack for teachers outlining applications and current research in areas of quantum physics linked to the Higher/AH syllabus

• Glow resources:
  - Updated Higher and AH physics resource guides
  - Mind map of quantum concepts for AH

• Other:
  - Updated Higher Human Biology resource guide links
  - Uploaded Weather and Climate Change videos to Glow