

Snapshot of UK graduate training

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Historical context

Main UK domestic accelerators:

NINA – Daresbury Lab: 5 GeV e- synchrotron (closed 1977)

→ SRS (2 GeV e- synchrotron) > 1980

→ Diamond – Rutherford Lab

NIMROD – Rutherford Lab: 7 GeV p synchrotron (closed 1978)

→ ISIS (800 MeV p synchrotron) > 1985

Diamond: synchrotron source of X-rays



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ISIS: synchrotron source of neutrons



Historical context (contd.)

Closure of the domestic ‘particle physics’ accelerators caused a migration of UK accelerator scientists to overseas labs (largely, but not entirely, to CERN)

In the 1980s and 1990s very few (if any!) PhDs were awarded in accelerator science

- subject had essentially disappeared at undergraduate level

New Era

2000: Particle physics community launched initiative for a revival of accelerator science in UK – science driven

2000-2003: small R&D efforts started (mainly) on linear collider and neutrino factory topics

2003: PPARC awarded significant funding for national consortia to work on LC and NuFac (incl. MICE)

2003: John Adams Institute and Cockcroft Institute were established by PPARC + universities to revitalise the national academic expertise in accelerator science

Other universities: IC, UCL, QMUL, Brunel, Birmingham, Dundee, Strathclyde, Warwick ... also involved

Accelerator Institutes

John Adams Institute:

Oxford + Royal Holloway

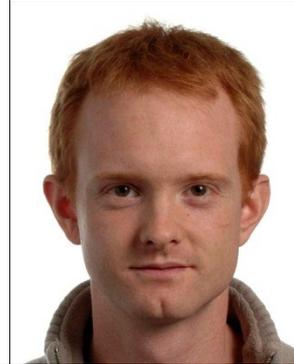
Cockcroft Institute:

Lancaster, Liverpool + Manchester

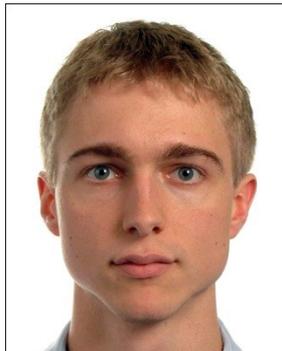
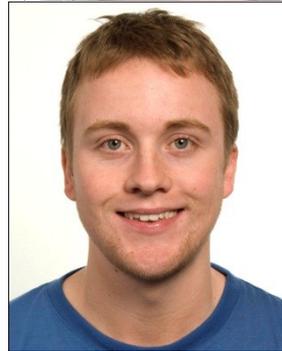
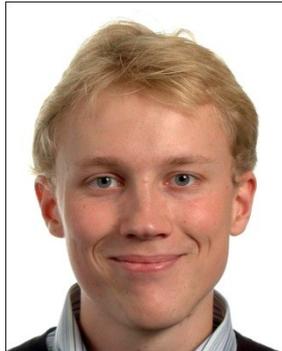
c. 25 faculty

c. 50 PhD students

UK PhD Students



c. 12 students/year



Teaching (JAI example)

First year of PhD programme, courses in:

- **Accelerator physics:** Ted Wilson + Riccardo Bartolini
- **Hamiltonian dynamics:** Chris Warsop
- **Specialist lectures in magnets, RF ...**
- **Accelerator applications:** (Diamond, ISIS, CERN, medical)
- **Design study project as a team:**
eg. Diamond booster, CLIC damping ring ...

Additional comments

- **4 staff at RAL + Diamond doing part-time PhDs with JAI**
- **MSc: programme in accel. physics starting at RHUL
RF (Strathclyde, Lancaster)**
- **Bachelors degree:
now some introductory courses in accelerator physics
(eg. Oxford 'minor option' 3rd year)**
- **For our next meeting I will try to give a more quantitative
picture**