# ARCHER TRAINING

## 10TH FEBRUARY 2016

*David Henty, HPC Training*

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# EPCC Training

- Active since Cray T3D service in 1994



MSc in HPC (2001)



PRACE Advanced Training Centre (2012)
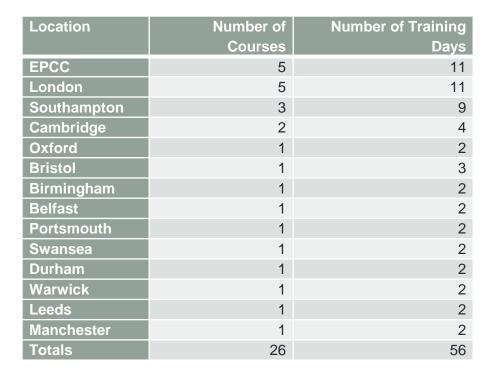


ARCHER (2013)



Accredited online courses (2016)



Supercomputing MOOC (2017)

# ARCHER Programme (initial plan)

- Typically, per year,
  - 66 days face-to-face
  - 12 online virtual tutorials

- For 2017
  - Hubs at Edinburgh, London, N8 and Southampton
  - approx 50% courses also part of PATC programme
  - free to all academics
  - PATC courses free to all

| Location | Number of Courses | Number of Training Days |
|---|---|---|
| EPCC | 5 | 11 |
| London | 5 | 11 |
| Southampton | 3 | 9 |
| Cambridge | 2 | 4 |
| Oxford | 1 | 2 |
| Bristol | 1 | 3 |
| Birmingham | 1 | 2 |
| Belfast | 1 | 2 |
| Portsmouth | 1 | 2 |
| Swansea | 1 | 2 |
| Durham | 1 | 2 |
| Warwick | 1 | 2 |
| Leeds | 1 | 2 |
| Manchester | 1 | 2 |
| Totals | 26 | 56 |

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# 2017 Courses (initial plan)

| Course | Number of Runs |
|---|---|
| Advanced MPI | 1 |
| Advanced OpenMP | 1 |
| Data Analytics with HPC | 1 |
| Data Carpentry | 2 |
| Efficient Parallel IO on ARCHER | 1 |
| Efficient use of ARCHER and the Knights Landing Processor | 1 |
| GPU programming with CUDA | 1 |
| Hands-on Intro to HPC | 1 |
| Introduction to Modern Fortran | 0 |
| Introduction to Scientific Programming with Python | 2 |
| Message-Passing Programming with MPI | 3 |
| Object-Oriented Programming with Fortran | 0 |
| Performance Analysis Workshop | 1 |
| Practical Software Development | 0 |
| Programming the Manycore Knights Landing Processor | 2 |
| Scientific Computing | 1 |
| Shared-Memory Programming with OpenMP | 1 |
| Single-Node Performance Optimisation | 1 |
| Single-Sided Communications | 1 |
| Software Carpentry | 2 |
| Threaded Programming | 1 |
| Writing Scalable Parallel Applications with MPI | 1 |
| Total number of courses run | 25 |

# Annual Process

- Discuss requirements with hubs and other centres
  - propose training programme
  - approved by external training panel
  - all material archived on web after delivery

- Possibility of developing new courses
  - asked for input on this from regular training survey
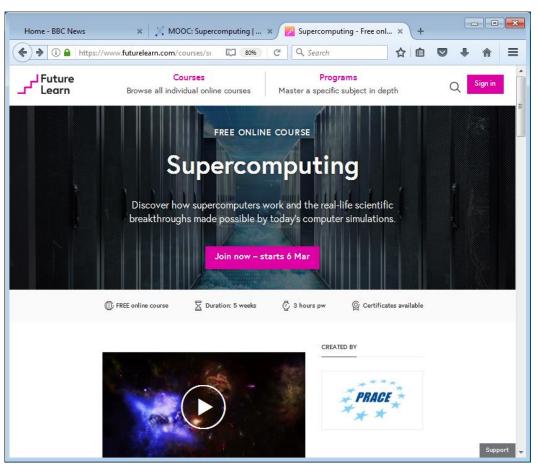  - results about to be analysed ...

# Novel Training

- MOOC
- Driving tests
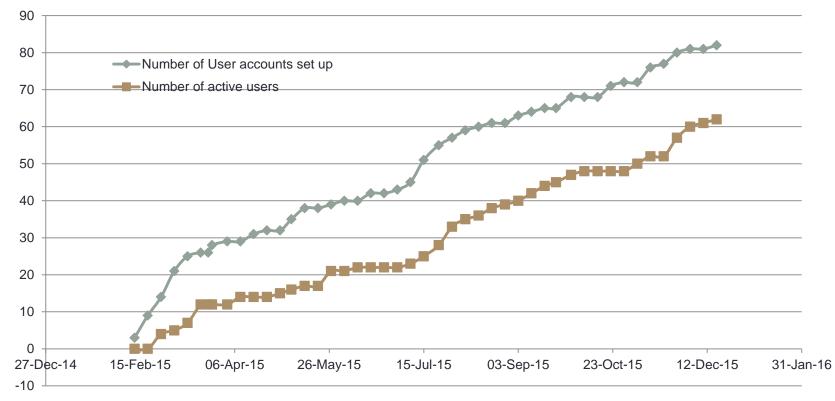- Online CPD courses
- Live webinars and recorded lectures
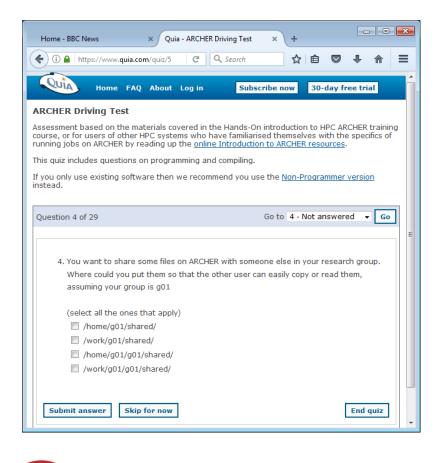
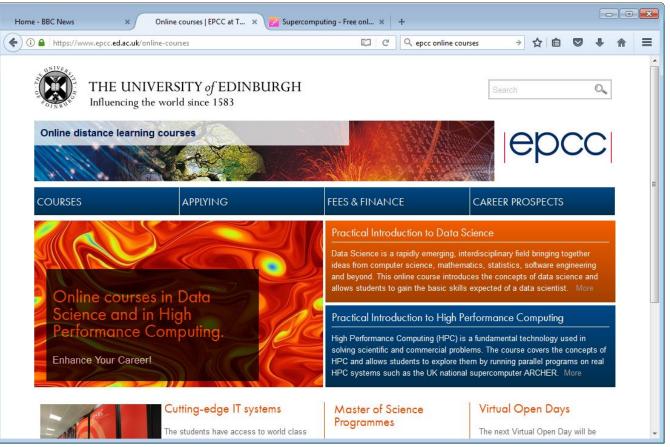# futurelearn.com/courses/supercomputing/

# ARCHER driving test



Users

# Quizzes
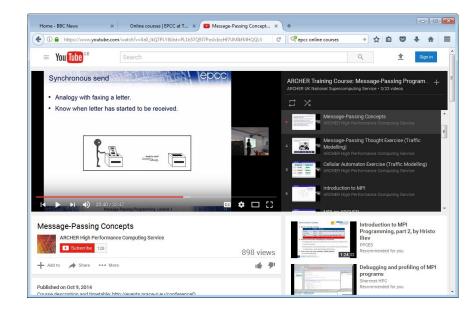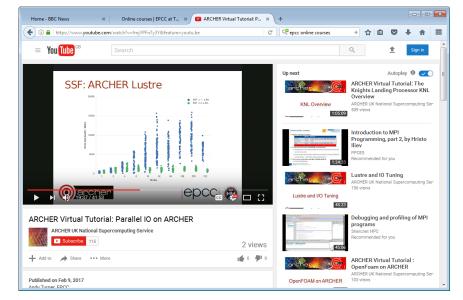
# Postgraduate Professional Development
http://www.epcc.ed.ac.uk/online-courses/

# Webinars and recorded lectures



http://www.archer.ac.uk/training/online/

http://www.archer.ac.uk/training/virtual/

# How can we work together?

- What do you want? Your users want?
- Coordination with Tier-2 training programme(s)
  - opportunities for collaborative courses (e.g. Soton, Sheffield)
  - sharing of popular course material
  - run courses at Tier-2 sites on your machines
  - for ARCHER we just need a venue + local audience
- E.g. Hands-on Intro to HPC course
  - could make PPTs available as well as existing PPTs + exxercises
  - sample run available as online videos
  - you port to your machine and share new material
  - ARCHER (run 1), collaborative (run 2), devolved (run 3) ?

http://www.archer.ac.uk

support@archer.ac.uk