Background

• Established 2011

• Response to EPSRC call
  ➢ make more of existing courses through regional cooperation
  ➢ Original emphasis on residential courses (experience from Maths and Stats)
Guiding Principles

• training to **support** PhD supervisor
  ➢ wider access to high-level training; honed by supervisor

• two types of course
  ➢ authoritative **foundation** in programming methods
  ➢ **advanced topics** in HPC

• *cooperation* with other training providers

• “HPC” Is inclusive
  ➢ compute- & data-limited; stepping from local)
Activities

• Autumn Academy (September, since 2011)
  ➢ 2 weeks; very intensive; C/Fortran; OpenMP/MPI; hardware, optimisation, numerical analysis
  ➢ designed for start of computational PhD.

• Short Residential Courses
  ➢ 2–5 days; advanced topics
    • CUDA Programming on GPUs
    • Algorithm Design and Parallel Algorithms
    • Parallel Programming with Coarray Fortran and UPC
    • Advanced OpenMP
    • Core Algorithms for Performance Scientific Computing
New Training Landscape!

• 130+ new CDTs from summer 2014

• Excellent focused cohort training (year 1)

• Developing(?) structure for years 2–4?
  ➢ some research projects need skills peripheral to CDT expertise? (modelling in a largely experimental CDT?)
  ➢ Local critical mass of expertise in all related disciplines?

• Need to Cooperate: exploit expertise of computational CDTs, MSc programmes and expert training initiatives
Purpose of today

- Inform about existing opportunities
  - for summer/autumn 2015

- explore options for innovation
  - testbeds for 2015/16 or beyond

- Shape EPSRC training policy
  - at least in respect to high-end e-Infrastructure
  - What is needed?
  - What is feasible?
Existing Opportunities

• Autumn Academy (Cambridge), September 2015
  ➢ www.hpc-sc.ac.uk/

• NGCM Summer Academy (Southampton), June 2015
  ➢ ngcm.soton.ac/summer-academy

• EPCC ARCHER and PRACE training
  ➢ www.archer.ac.uk/training

• Hartree Summer Schools
Existing Opportunities: Advanced Short Courses & CDTs

- Cuda Programming on GPUs (Oxford, July)
- Machine Learning (Cambridge, September?)
- Core Algorithms for performance Scientific Computing (Warwick, September/October?)
- Programming with Fortran (EPCC, by November)
- Imperial CDTs
  - 4 short courses on Git/bitbucket, Python, Matlab & MPI
- Fusion CDT (York)
  - Numerical Methods (python); Plazma Physics Code optimistation (python); Materials Defects (Matlab)
- Diamond CDT (Warwick+)
  - Computational Theoretical Material Modelling (electronic structure and finite element modelling)
Bridging the Landscape!

- explore options for innovation
  - testbeds for 2015/16 or beyond

- Shape EPSRC training policy (high-end e-Infrastructure)
  - What is needed? What is feasible?
    - syllabus
    - timetable
    - technology