MANCHESTER 1824
The University of Manchester

Research IT

Helping your research light up our world

@UoM_eResearch

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Introduction to Research IT

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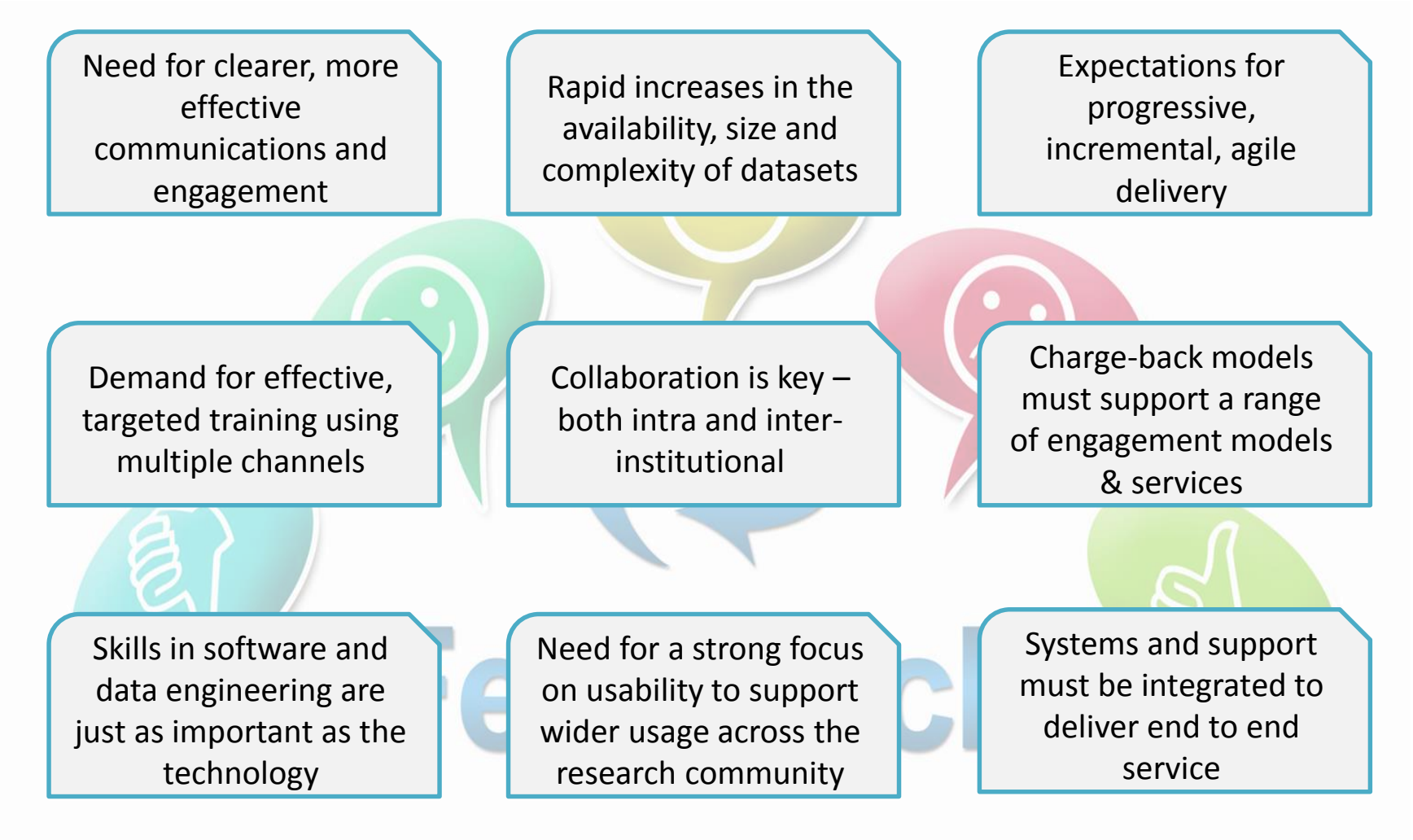
Research IT Club, 23rd November 2016

What is Research IT?

- Part of the IT Services Organization
  - Separate from
    - Business Systems
    - Teaching and Learning
- Researcher and research focussed
- Broadly, two themes:
  - Research Infrastructure
  - Research Software

  Training
- Links to external organizations:
  - Software Sustainability Institute
  - Regional and national facilities (N8, ARCHER, etc)

Researcher feedback



Strategic alignment

World Class Research

"Our ambition is to be one of the world's top universities, where internationally-leading researchers produce work of the highest significance and impact. We will be recognised for our interdisciplinary research, for training outstanding researchers and giving parity of esteem to discovery, application, knowledge transfer and impact."

Research IT value proposition

"We provide the eResearch capabilities including hardware and software to help University of Manchester researchers realise their aspirations and undertake world leading, high impact research. We provide timely, responsive service to eliminate barriers, increase researcher productivity and continuously expand what is possible in academic research."

Strategic Objectives

Enhance research outcomes by enabling eResearch capabilities including hardware and software across a broad cross-section of the University research community and helping attract leading researchers to the University.

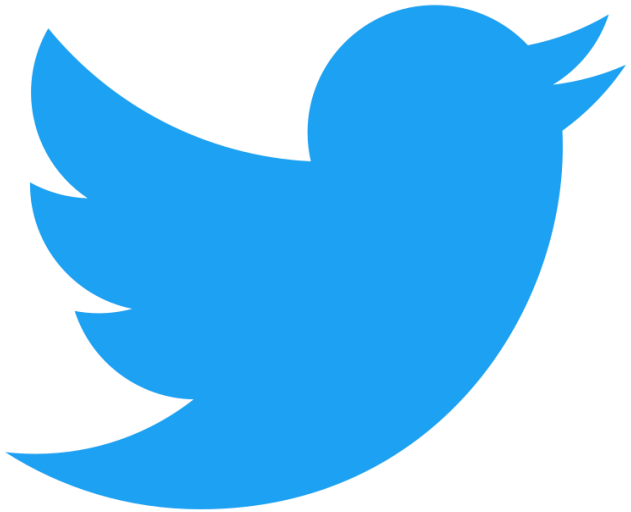
Improve research impact by providing the tools that help researchers collaborate effectively with colleagues within and external to the University.

Accelerate researcher productivity by leveraging technology and expertise to improve usability and protect researchers from unnecessary IT complexity, thereby reducing the time and effort to deliver meaningful insights.

Expand the boundaries of what's possible in academic research by enabling emergent and innovative eResearch technologies that help University researchers achieve their objectives.

How to contact us

- Website:
  - http://www.itservices.manchester.ac.uk/research/
- IT Services Support Centre:
  - https://supportcentre.manchester.ac.uk
- Twitter:
  - @UoM_eResearch
- Blog:
  - https://researchitnews.org/
  - Sign up to our newsletter here



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Applications Support
Training
Research Software Engineering

Applications Support

- Responsive support via IT helpdesk system
- Help with installation and licensing of research applications
- Advice on site licensed research software
- Help with researcher's code/scripts
  - make it run or run "better"
- Visualization and data analytics support
- Drop-in session in locations close to our researchers
  - Schedule available on Research IT blog


LIBRARY
BOOK RETURN
Ground Floor
150 study spaces
8 computer spaces
Term time opening hours
9.30am-5pm Monday-Friday
Check the website for opening hours
during vacation and exam periods
0161 275 6858
www.manchester.ac.uk/library
Research IT
Drop-in Session
pukka pad

Training

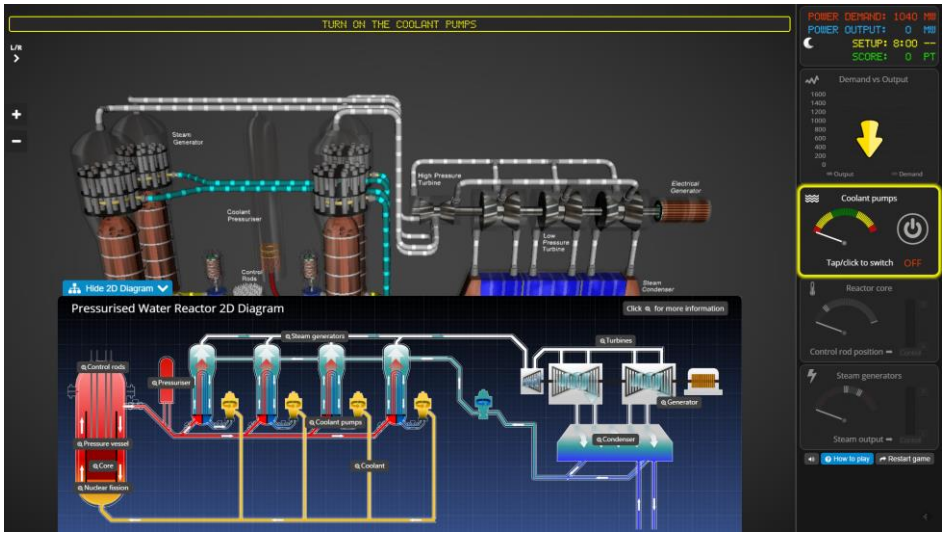
- Online and face to face training courses
  - A mix of in-house and external trainers
  - Check Staffnet training calendar
  - its-research-training@manchester.ac.uk
- Courses:
  - Linux
  - Python, Fortran, Matlab
  - HPC, CSF, DPSF
  - LaTeX
  - Version control with Git
  - MPI/Optimization/parallelization
  - GPU/OpenCL/CUDA
  - Data analysis and visualization

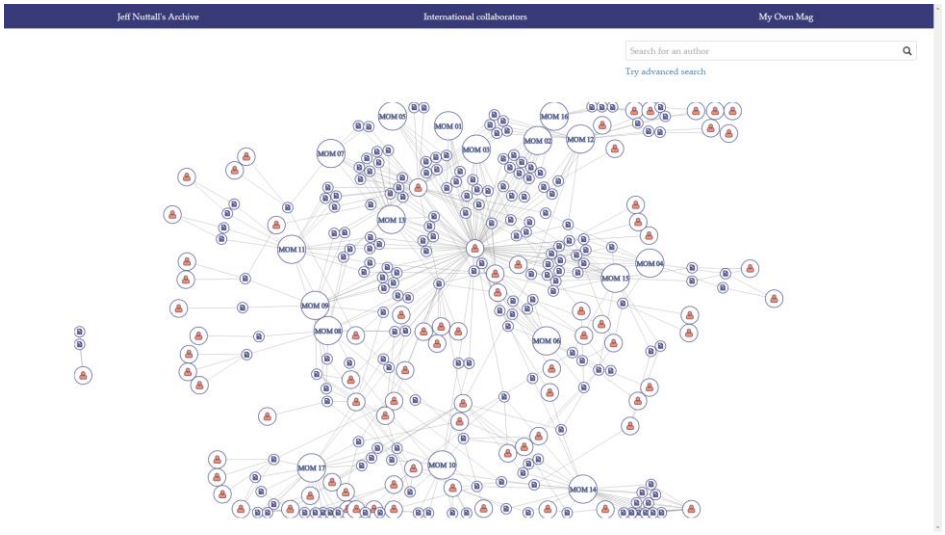
Consultancies

- We provide short-term consultancies to researchers
- Fuzzy and ad-hoc
  - Covers a few days to a few weeks of effort
- More in-depth than application support; less than full embedded RSE
- Examples:
  - Deploying live server applications to Virtual Machines
  - Exploring and developing new tools for data acquisition and analysis
  - Pilot development/PoC for establishing further funding and work
  - Technical consultancy and resource management for grant applications
  - Development of bespoke applications and solutions

Consultancies - Highlights

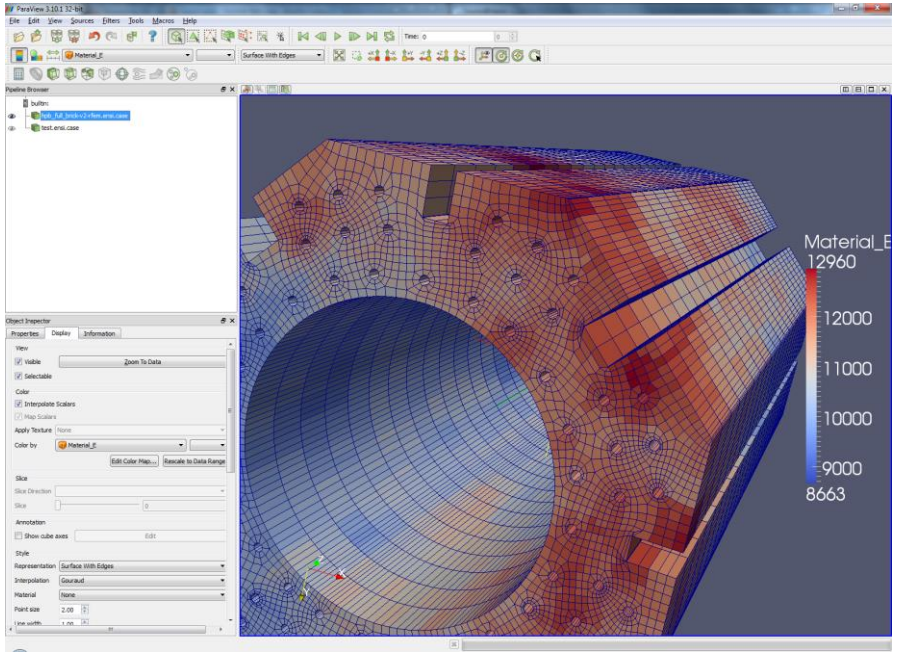
- Nuclear Reactor Simulator Game – Dalton Nuclear Institute
- Jeff Nuttall Network Visualization – Doug Field and JRUL
- C19th J.M.W. Turner prints image comparison pilot
- Extant Catalogue web app code review and support
- Text to XML mapping of Hippocratic Aphorisms and Arabic commentaries

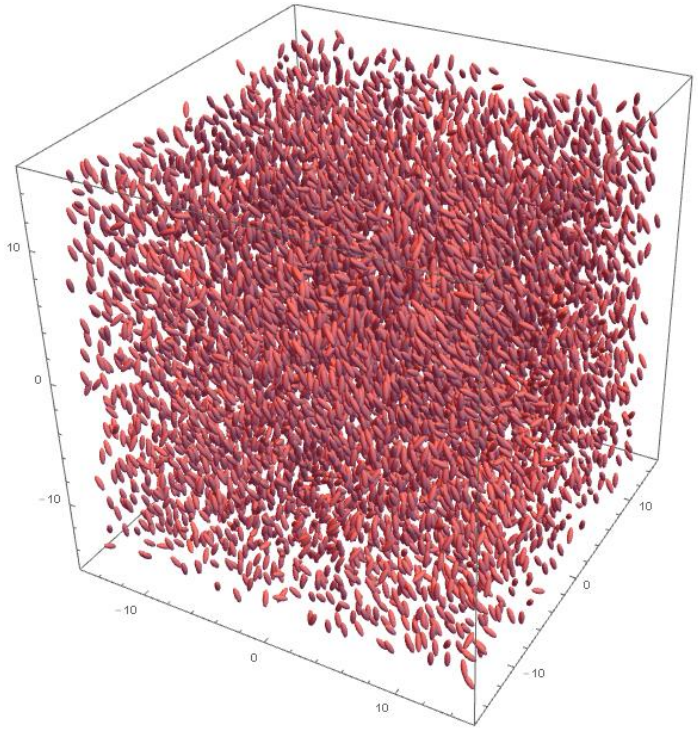




Consultancies - Highlights

- VBA consultancy with SynBioChem
- Prisoner Dilemma game VM hosting and server app support
- Climate Change tweet streaming and data analysis
- Alternative Mathematica visualization solution for ellipsoid particles





Research Software Engineering

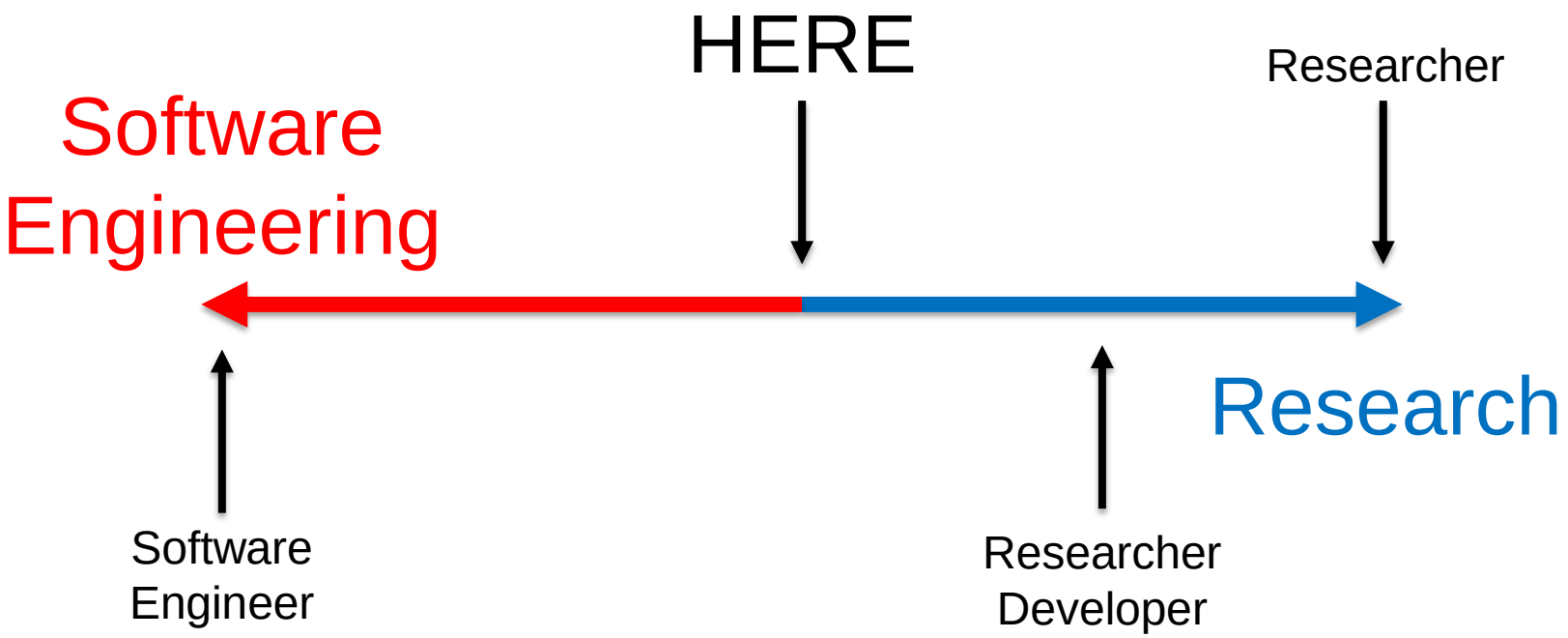
- "Pool" of professional software engineers
  - Programmers, engineers, data scientists
- Advice on and specification of requirements
  - Can also help with recruiting to your team
- Long term software engineering support
- Embedded into your research project
  - ~3 months to *n* months of effort
  - Varying levels of FTE (>=20%)
  - Targeted deployment at certain times
- Can be engaged pre- or post-award
  - Help with the software/technical aspects of grants
  - We're in pFACT and have a day rate

Research Software Engineering Highlights

- Human Brain Project
  - Steve Furber, Dave Lester; Computer Science
- Dialectics of Modernity
  - Francesca Billiani; Arts, Languages and Cultures
- Linguasnapp
  - Yaron Matras; Arts, Languages and Cultures
- IDInteraction
  - Caroline Jay; Computer Science
- #BritainBreathing
  - Sheena Cruikshank; Infection, Immunity & Respiratory Medicine
- SynBioChem
  - Rosalind Le Feuvre; MIB
- Neighbourhoods and Dementia
  - John Keady; Nursing, Midwifery & Social Work
- Biological Studies Group
  - Kath Watson; Musculoskeletal & Dermatological Sciences
- FoodBugClub
  - Dan Rigby, Caroline Millman; Social Sciences
- SIPER
  - Jakob Edler, Paul Cunningham; Alliance Manchester Business School

LinguaSnapp

What is a Research Software Engineer?



Simon Hettrick: http://slides.com/simonhettrick/why-we-need-careers-for-research-software-engineers-10-13-17

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Are you a Research Software Engineer?

1. Are you employed to develop software for research?
2. Are you spending more time developing software than conducting research?
3. Are you employed as a postdoctoral researcher, even though you predominantly work on software development?
4. Are you the *person who does computers* in your research group?
5. Are you sometimes not named on research papers despite playing a fundamental part in developing the software used to create them?
6. Do you lack the metrics needed to progress your academic career, like papers and conference presentations, despite having made a significant contribution through software?

https://www.software.ac.uk/blog/2016-11-17-not-so-brief-history-research-software-engineers


BETTER
SOFTWARE
BETTER
RESEARCH