Researchers’ Perspective

Dr Jonathan Tedds

University of Leicester
Senior Research Liaison Manager
IT Services
& Research Fellow
Dept of Physics & Astronomy
twitter @intemple

jat26@le.ac.uk
UK Research Data Service pathfinder

- Key finding of HEFCE funded study 2008/9 at Leicester, Oxford, Bristol, Leeds:
  - **research facilitators = missing link**

- Initial funding to IT Services from Oct 09 + *institutional level support*

- Coordinate research life cycle, expertise & training across key *institutional* stakeholders
  - Researchers in Colleges, depts, groups, projects
  - IT Services – embryonic research computing support – HPC, storage....
  - Research Support Office – funding, legal requirements...
  - Library - repository archive, ethical & training expertise...

- Coordinate to *national expertise* including
  - JISC Managing Research Data program #jiscmrd
  - Digital Curation Centre – research data management planning tools
  - RCUK e-science program, RIN, OMII, UCISA.....
HALOGEN (History, Archaeology, Linguistics, Onomastics, GENetics): throwing light on the past through cross-disciplinary databasing

http://www.le.ac.uk/halogen
#jiscend
Roots of the British, 1000 BC – AD 1000

Histories, Genetics and the Peopling of Britain

The fundamental population history of Britain and the roots of the identities of the historical nations of the island (the Welsh, Scots and English) is a contentious subject, especially regarding the legacies of the ‘ancient peoples’ (known canonically as the Celts, Romans, Angles, Saxons and Vikings) who are said to have migrated into it, peacefully or as invaders, by the end of the first millennium AD.

The longest-established scholarly traditions — history and philology (the history of language) — have traditionally emphasized mass migration as the fundamental mechanism for major cultural phenomena such as the origins of Celtic languages or of Anglo-Saxon kingdoms in Britain, and to a large extent continue to do so. Modern popular accounts often unquestioningly accept such explanations of the past as established fact.

However, many archaeologists reject mass migration as the default explanation for such processes. Genetics potentially offers an entirely independent source of evidence and methodology for addressing these issues, and some present it as a ‘magic bullet’.

Our multidisciplinary project draws on the world-class expertise of academics based in the University of Leicester in the Department of Genetics, the School of Archaeology and Ancient History, the School of Historical Studies and the School of English. We aim to re-appraise key questions and evidence concerning the Roots of the British, focusing especially on the methodological interfaces between academic disciplines.
Genetic variation (Y data)

Population differentiation test

Bowden et al., 2008
Halogen as template for research data management

- Requirements Analysis

- Data Management Plan

- Scalable research data management infrastructure
  - to support HALOGEN from its pilot phase to its end goal of becoming a nationally available source of information
  - LAMP stack: DB as service – work with Oxford, JISC/DCC

- A model for the long term delivery of a data management service within the institution including
  - support, maintenance, governance & charging policies
Reward = Leverhulme Trust funding £1.3m!

The Impact of Diasporas on
The Making of Britain

Evidence
Memories
Inventions

University of Leicester

The University of Nottingham
Mintweld Engineering

- led by Dr H. Dong (Engineering) at Leicester [http://www2.le.ac.uk/projects/mintweld](http://www2.le.ac.uk/projects/mintweld)

- requires combination and correlation of research datasets including the modelling of welding processes through the range of nano to macro scales

- *Leicester to coordinate research data exchange between partners*

- **Challenges:**
  - store and combine research datasets of differing type and from multiple international institutes
  - incorporate commercially sensitive data from EU industrial partners e.g. Corus UK
Welcome to AstroGrid

AstroGrid is the doorway to the Virtual Observatory (VO). We provide a suite of desktop applications to enable astronomers to explore and bookmark resources from around the world, find data, store and share files in VO Space, query databases, plot and manipulate tables, cross-match catalogues, and build and run scripts to automate sequences of tasks. Tools from other Euro-VO projects inter-operate with AstroGrid software, so you can also view and analyze images and spectra located in the VO.

These web pages hold our software for downloading, as well as links to other people's software. They also provide the help documentation, and other support material such as FAQs and the Helpdesk ticket system.

Our new software (V2008.1) is released on April 1st 2008. Previous releases will still be available for some time: see previous releases.

GETTING STARTED
Read a little about the Virtual Observatory
Read a little about the AstroGrid Desktop suite
Go to the Install area and download the software
Have a look at the documentation in the Help area
Start trying it out!

Acknowledging AstroGrid. If you make use of the AstroGrid system or tools, we would be grateful if you could acknowledge this use in any resulting publications. You could use these words: "This research has made use of data obtained using, or software provided by, the UK's AstroGrid Virtual Observatory Project, which is funded by the Science & Technology Facilities Council and through the EU’s Framework 6 programme. Use of any data discovered or accessed through AstroGrid should of course be mentioned as noted by the data providers."

http://www.astrogrid.org (April 2008 1st public release)
• AstroGrid front end, part of VOdesktop
• **Resource-centric**
• Select a search-space
• Search for resources
• Filter these resources
• View selected resources
• Use the selection
  • Invoke it
  • Save/Bookmark/Tag it
  • Export it

http://www.astrogrid.org
## Resources!

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<tr>
<th>Title</th>
<th>Capabilities</th>
<th>Date</th>
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</thead>
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<td></td>
<td>2007-05-18</td>
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<td>NGC 2547 XMM-Newton X-Ray Point Source Catalog</td>
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### CHANDRA observations of NGC 2264 (Ramírez +, 2004) - Optical/infrared sources with X-ray counterparts

**Type:** Resource


**Subject:** open clusters, photometry; wide-band, stars; variable

**Level:** research

**Curation:** Published by CDS
CHANDRA observations of NGC 2264 (Ramirez, 2004) - Optical/infrared sources with X-ray counterparts

NGC 2264 was observed with the Advanced CCD Imaging Spectrometer (ACIS) detector on board the Chandra X-Ray Observatory on 2002 February 9. Further information: http://cxc.harvard.edu/ciao/CAJ/27/2659/table4

Subject: open_clusters, photometry:wide-band, stars:variable

Curation: Published by CDS

Description
Query on position
### IT Services: A fragmented picture – circa 2008

<table>
<thead>
<tr>
<th></th>
<th>Central IT Service</th>
<th>Devolved to departments</th>
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<tbody>
<tr>
<td><strong>IT Staff</strong></td>
<td>112</td>
<td>&gt;60 (third on research grants)</td>
</tr>
<tr>
<td><strong>IT spending</strong></td>
<td>£8.5M</td>
<td>£2.75M</td>
</tr>
<tr>
<td><strong>Servers</strong></td>
<td>430</td>
<td>240</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>40TB</td>
<td>400TB (mostly unmanaged)</td>
</tr>
<tr>
<td><strong>HPC facilities</strong></td>
<td>None</td>
<td>Two separate ~obsolete ones!</td>
</tr>
<tr>
<td><strong>Server rooms</strong></td>
<td>2 (both inadequate)</td>
<td>About 10 (all inadequate)</td>
</tr>
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ITS needs to support researchers at every stage...

- Funding
- Research Activity
- Publication
- Knowledge Transfer
- Assessment/Evaluation

Communication & Collaboration
With help winning and managing grants......

- **Pre-Award Costing (LUCRE)**
  - Dominates researchers’ minds!
  - Enable PIs to build grant application using actual costs of staff, overheads, and the right rules for funder
  - Trigger involvement of IT Research Liaison as necessary via flags
    - sensitive research data
    - costing/planning support including curation and preservation over research lifecycle
    - Track needs via SDE

- **Grants Management**
  - Help PIs to keep track of finances during project
With help managing data....

- Data Management advice and guidance
- Early career training
- Subtle enablement of cross-disciplinary skills transfer
Sensitive & confidential data

- University’s governing body has highlighted need to ensure integrity of its research data, particularly where that data is sensitive
  - *External audit by DeLoitte, April 2010*

- **key role of the IT Research Liaison Managers** will be to map sensitive and confidential data across the institute in order to prioritise where intervention and support is needed most urgently

- The university’s engagement with the UKRDS interim project and its potential role as a Pathfinder
  - address the data management aspects of IT services for researchers
  - *Use DCC provided/hosted online questionnaire tool to support*
  - help develop the tools to be used by other institutions with similar needs
With access to computational power...

- High Performance Computing
With generic hosting services....

- High capacity, affordable data storage and archive
- LINUX platform hosting
- Database hosting
With help recording information for REF...

- Research Activity Tracking

[Logos and branding]
With help publishing.....

- Leicester Research Archive
- A digital repository of research outputs
With help collaborating....

- Web publishing, VREs e.g. Sharepoint online
Implement the strategy......

- Build the infrastructure for a local/external cloud
  - Identity management
  - Data and voice network
  - Virtualised servers / storage / backup / monitoring tools
  - Two ‘good enough’ data centres
- Where appropriate centralise staffing and standardise
- Consider outsourcing anything that is well bounded and understood?

5 Years!