

# NCESS Panel

**Dr Richard Sinnott**

**Technical Director National e-Science Centre**



**Deputy Director (Technical) Bioinformatics Research Centre  
University of Glasgow**

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# Security

- ▶ “...if you think that technology can solve your security problems then you don’t know enough about the technology, and worse you don’t know what your problems are...”
  - » Bruce Schneier, *Secrets and Lies in a Digital Networked World*
- ▶ “I recommend overwriting a deleted file seven times: the first time with all ones, the second time with all zeros, and five times with a cryptographically secure pseudo-random sequence. Recent developments at the National Institute of Standards and Technology with electron-tunnelling microscopes suggest even that might not be enough. Honestly, if your data is sufficiently valuable, assume that it is impossible to erase data completely off magnetic media. Burn or shred the media; it's cheaper to buy media new than to lose your secrets....“
  - » *Applied Cryptography*, 1996, page 229
- ▶ If you provide an open / internet facing system sooner or later your system will be compromised...

# My Background

- Numerous life science/security projects from the genotype to the phenotype and further...
  - BRIDGES
  - VOTES
  - SFHS
  - DyVOSE
  - SBRN
  - ...

# Grid Security I

- **Grid security**

- **Single sign-on based on (X.509) digital certificates**
  - ▶ CA in RAL
  - ▶ Local CA's possible also
- **Services (and clients) have APIs for finer grained security**
  - ▶ “I know who you are and here is your local account”
- **Provides for authentication but need authorisation**
  - ▶ “I know who you are and here is what you are allowed to do on my resource”
    - Various technologies for authorisation including PERMIS, CAS, VOMS, Akenti, Cardea, ...
    - We have been doing lots of things with PERMIS

# Grid Security II

## ● Policy, Policy, policy, policy, policy ...

- Granularity?
- Robustness?
- Integration?
- Scalability?
- Weakest link?
- Stability?
- Usability?
- ...
  - ▶ Plus ... technology won't solve all problems...
    - » Please delete this data once used?
    - » Don't pass it to anyone else?
    - » ...

# Grid Security III

## • Trust, Trust, Trust, Trust, Trust, Trust, Trust, Trust ...

- People
- Technology
  - ▶ At fairly early stage in both of these areas...
    - we are making progress on the latter front though