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## Environmental Health Informatics Workshop and BRISKit / DataSHIELD Hackday

Wednesday 7 October, 2015, 9am – 5pm

College Court, University of Leicester,  
Knighton Road, Leicester LE2 3UF

### Agenda

- 9:00      Arrival, Registration, and Coffee
- 9:30      Welcome and Overview
- 9:40      An informatics-based approach to integrating and interrogating  
environmental and health data

Josh Vande Hey  
NERC Knowledge Exchange Fellow Aerosols and Health  
University of Leicester

Becca Wilson  
DataSHIELD Lead, D2K  
University of Bristol

- 10:00 Introduction to BRISKit: Biomedical Research Software Service
- Jonathan Tedds  
Senior Research Fellow Health & Research Data Informatics  
University of Leicester
- 10:20 Group discussion prep
- 10:30 Small group discussions of perspectives and challenges in environmental health, and objectives for the day
- How can informatics-related approaches empower the work of health/environmental researchers and expand utilization of data?
- 10:50 Brief reports from each group
- 11:00 Coffee and networking
- 11:30 Facilitators pose problems + hacks for the day based on outputs of pre-coffee and coffee discussions
- Suggested themes include: data integration, public health data and patient cohort management, uploading own datasets via i2b2/BRISKit, links to survey and related BRISKit tools, interdisciplinary strategies, i2b2 hacks, DataSHIELD trialling, new BRISKit module concepts, communication strategies to diverse stakeholders, etc.
- 11:40 Small group problem solving begins, host team circulates to provide resources needed for the day
- 12:40 Lunch
- 13:30 Parallel Session
- Group activity to identify and address issues around describing and communicating cross-discipline data
  - Informatics Hack using i2b2, BRISKit, DataSHIELD, and delegate environmental and/or open health dataset(s)
- 14:00 Small group problem solving + hack continues
- 15:30 Coffee
- 15:50 Small group + hack presentations

16:40 Closing Remarks and Discussion

17:00 Finish

## Potential topics for small group work:

### **Environmental Health hack ideas**

- Environmental metadata to health data dictionary methodology
- Secure visual representation of spatial health information
- Data exploration of open datasets
- How can computational people help health and environment researchers?

### **BRISKit hack ideas**

- Data integration of own and open data sets using i2b2 / BRISKit
- Linking to own patient or public survey data
- Linking to patient / public sample datasets
- Patient / public cohort management and linking
- Mobile health applications and integration
- Concept design of new modules for BRISKit

### **Society / Policy hack ideas**

- Balancing data protection with realizing data potential
- Tools for policy interpretation / application of research outcomes

### **DataSHIELD hack ideas - New data types**

These ideas require R experience or experience in data handling the respective data types, they require no prior knowledge of DataSHIELD:

- Geospatial data: expanding analytic functionality for analysis in DataSHIELD (led by Tom Bishop, lead developer of dsGeo datashield)
- Genomics data: expanding datashield functionality for meta-analysis of SNPs (led by Demetris Avraam & Paul Burton)
- Text data: text mining capability e.g. analyzing twitter data in DataSHIELD (led by Becca Wilson & Olly Butters)

## DataSHIELD hack ideas – Infrastructure

Investigate different data sources for DataSHIELD - integration and plugins with other data sources. DataSHIELD is currently fully integrated into Opal, and we have a prototype for i2b2 - any others? (led by Neil Parley and Olly Butters)

## Informal Talks

Throughout the day a number of invited 10 minute power talks will be delivered by a variety of speakers on topics (while hacking continues!) potentially including:

- Methods for doing research while protecting sensitive data
- Introductions to publically available datasets
- Techniques for assessing human exposure to air pollution
- Industrial perspective on research data informatics approaches

### Confirmed talks

Tom Bishop (Cambridge)—a demo—first looks at GIS functionality in DataSHIELD

Paul Burton (Bristol)—what is DataSHIELD and how is it relevant for environmental health research?

Please bring your ideas, data (non-sensitive only), slides, laptops, wearables, etc. to the event!

## Additional Information

Information about College Court

<http://collegecourt.co.uk/sites/default/files/brochures/college-court-travel-leaflet.pdf>

Information about BRISKit

[http://www.researchgate.net/publication/249011091\\_BRISKit\\_Biomedical\\_Research\\_Infrastructure\\_Software\\_-\\_Overview\\_Nov\\_2012](http://www.researchgate.net/publication/249011091_BRISKit_Biomedical_Research_Infrastructure_Software_-_Overview_Nov_2012)

Information about DataSHIELD

<http://www.datashield.ac.uk/>

If you are interested in using DataSHIELD at the event, you need an installation of R and admin access for program installation.

If you want to install DataSHIELD before the event, follow these instructions:

<https://wikis.bris.ac.uk/display/DSDEV/Install+the+test+environment>