

# **Southampton Data Analysis Workshop**

**18-19<sup>th</sup> September 2014**

**Grand Harbour Hotel**

## **Programme**

### **Support Provided by:**

- **Strategic Interdisciplinary Research Development Fund**
- **IT as a Utility Network+**
- **Faculty of Medicine**
- **Mathematical Sciences**
- **Centre for Proteomic Research**
- **Ayasdi**

## Day 1: Thursday 18<sup>th</sup> September

- 08:15 – 09:00**      *Registration. Tea/coffee*
- 09:00 – 09:45**      **The Topology of Data** (Jacek Brodzki)
- 09:45 – 10:30**      **Statistics: The Science of Data Analysis** (Jon Forster)
- 10:30 – 11:00**      *Morning tea/coffee: Foyer/Bar*
- 11:00 – 11:45**      **Machine learning and computational aspects of data analysis** (Mahesan Niranjan)
- 11:45 – 12:30**      **Topological tools for data analysis** (Ruben Sanchez-Garcia)
- 12:30 – 13:45**      *Lunch: Buffet in Restaurant*
- 13:50 - 14:10**      **High-performance computing at Southampton**  
(Oz Parchment)
- 14:10 – 15:30**      **Data challenges and approaches (short contributed talks)**
- 14:10 – 14:30*      **Progress with timeline structured clinical data collation and analysis in the University Hospital Southampton Clinical Data Environment.** David Rew (*Consultant surgeon, SGH*)
- 14:30 – 14:50*      **The SKA Science Data Processor: Bite Size Images from Exabyte Size Data.** Anna Scaife (*Physics and Astronomy*)
- 14:50 – 15:10*      **A matrix style approach to identify harm.** Sam Hepenstal (*Senior Research officer, Hampshire county council*)
- 15:10 – 15:30*      **Observation and Analysis of Social Machines.** Markus Luczak-Rosch (ECS)
- 15:30 – 16:00**      *Afternoon tea/coffee: Foyer/Bar*
- 16:00 – 17:00**      **Keynote speaker: Sayan Mukherjee (Duke University)**  
  
***Modelling surfaces, shapes, and networks using topological summaries***
- 17:00 – 18:00**      *Discussion/Networking: Informal discussion of the day's talks (Foyer/Bar), likely also to adjourn to a local pub/restaurant*

## Day 2: Friday 19<sup>th</sup> September

<b>08:30 – 09:00</b>	<i>Tea/Coffee</i>
<b>09:00 – 09:45</b>	<b>Statistical thinking</b> (Steve Gilmour)
<b>09:45 – 10:30</b>	<b>Topological data analysis: practical examples</b> (Conor Smyth)
<b>10:30 – 11:00</b>	<i>Morning tea/coffee – Foyer/Bar</i>
<b>11:00 – 11:50</b>	<b>Machine Learning: practical examples</b> (Adam Prugel-Bennett & Srinandan Dasmahapatra)
<b>11:50 – 12:30</b>	<b>Data challenges and approaches (short contributed talks)</b>
<i>11:50 – 12:10</i>	<b>Learning and Earning in Choice-Based Revenue Management.</b> Christine Curry ( <i>Mathematical sciences</i> )
<i>12:10 – 12:30</i>	<b>Extracting Cell-Type Specific Frequencies from Heterogeneous Sources.</b> Michael Breen ( <i>Bioinformatics</i> )
<b>12:30 – 13:30</b>	<i>Lunch – Buffet in Restaurant</i>
<b>13:30 – 14:30</b>	<b>Data challenges and approaches (short contributed talks)</b>
<i>13:30 – 13:50</i>	<b>Bayesian analysis with MultiNest.</b> Justin Bray ( <i>Physics and Astronomy</i> )
<i>13:50 – 14:10</i>	<b>Sexual Dimorphism of the Foramen Magnum: A Morphological Approach.</b> Sarah Stark ( <i>Bioarcheology</i> )
<i>14:10 – 14:30</i>	<b>How to Use Directional and Complex Wavelets to Improve Your Data Analysis.</b> Jean-Francois Robitaille ( <i>Physics and Astronomy</i> )
<b>14:30 – 15:30</b>	<b>Round Table Discussion</b> Co-chaired by: Jacek Brodzki ( <i>Professor, Mathematical sciences</i> ) and Ratko Djukanović ( <i>Director, NIHR Southampton Respiratory BRU and Southampton Centre for Biomedical Research</i> )
<b>15:30 – 16:00</b>	<i>Afternoon tea/coffee – Foyer/Bar</i>
<b>16:00 – 16:30</b>	<b>Summary and next steps</b>
<b>16:30</b>	<b>Meeting Close</b>

## **Organisers**

### **Scientific Committee**

Professor Jacek Brodzki (Mathematical Sciences)

Professor Ratko Djukanović (Director - NIHR Southampton RBRU and SCBR, Southampton General Hospital)

Professor Jeremy Frey (Chemistry and ITaaU Network+)

### **Organising committee**

Dr Ruben Sanchez-Garcia (Mathematical Sciences)

Dr Dominic Burg (Centre for Proteomic Research and RBRU)

Dr Paul Skipp (Centre for Proteomic Research)

Dr Conor Smyth (Mathematical Sciences)

Steve Brewer (ITaaU Network+)

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