



## News from Trinity Term and Summer 2015

### London Mathematical Society awards Apala Majumdar for her contribution to the mathematics of liquid crystals



Dr. Apala Majumdar has been awarded the Anne Bennett prize by the London Mathematical Society (LMS) in recognition of her outstanding contributions to the mathematics of liquid crystals and to the liquid crystal community. The LMS awards several Prizes each year for achievements in, and contributions to, mathematics. These include the Anne Bennett Prize for work in service to mathematics and particularly in relation to advancing the careers of women in mathematics.

Apala's research programme combines different areas of mathematics including continuum mechanics, calculus of variations, analysis and scientific computation which all feed into her work on the mathematical foundations of liquid crystal theory, the theory of defects in condensed

matter systems and the modelling of liquid crystal displays in collaboration with industry. She recently gave a fascinating ASC Termly lecture about her work. You can access the report of it [here](#).

The LMS is the main British mathematical Society for the advancement, dissemination and promotion of mathematics in the UK and worldwide. Since its inauguration 150 years ago, and with over two thousand members from all over the world today, it leads mathematical publications, recognises the achievements of mathematicians through different prizes and supports research in mathematics worldwide through grants. Read more about this Society [here](#).

*Apala is a Reader in Applied Mathematics and EPSRC Career Acceleration Fellow at the Department of Mathematical Sciences, University of Bath and co-leader of our ASC Complexity cluster (with Prof. Gui-Qiang Chen) at Keble College.*

# RELICS CLUSTER: SCIENCE MEETS THE SACRED

Keble has a new research cluster interested in applying studies of text, art and science to improve our understanding of relics: objects of cultural, historical and religious significance. The National Geographic Society has awarded an Expeditions Council Grant to researchers in the cluster to fund continuing scientific research into human remains attributed to St John the Baptist. This grant programme supports exploration and adventure worldwide and aims to yield compelling stories and images from explorations and adventures or from scientifically driven inquiries. Professor Tom Higham, Relics Cluster leader and ASC Interim Director, has already analysed some remains attributed to this Saint, but, with this new funding, more remains can now be examined and compared.



The information gained from the analyses will be invaluable for the study of the early Christian world and will allow scholars to explore the pattern of movement of relics across the Christian world, consider networks of patronage and exchange and understand the relationship of relics to one another. The project has the blessing of Catholic, Protestant and Orthodox clergy, including the Patriarch of Constantinople.

## How will the Relics Cluster do this research?

With the passage of time relics and their written provenance have a greater chance of being falsified leading to an increasing number of 'fakes' and a concomitant number of relics not being genuine. The application of modern scientific methods such as radiocarbon dating, stable isotope analysis and genetics on human remains has the potential to provide a more nuanced understanding of specific relics, their age, provenance and history. Thus far, the application of these methods has only rarely been undertaken and not in a systematic manner. The Relics Cluster aims to define a new methodology for the study of relics to provide a basis for their systematic study. This will enable researchers to examine the nature, movement, relatedness and historiography of relics for the first time and allow them to place important relics in their proper context. The importance of the work of this Cluster is therefore significant in historical, anthropological and archaeological contexts.

Previous work by the Cluster has demonstrated the power of this approach. For example, full mitochondrial DNA genomes have recently been obtained from 3 bones found inside a reliquary sarcophagus beneath a 4th-5th century Byzantine church in Bulgaria. Texts found in association referred to the remains as being "of Saint John", in this case John the Baptist. Accelerator mass spectrometry dating showed they were from the 1st century AD while the genomic analysis showed that these three samples were almost certainly from the same male individual, who may have originated in the Near East. Although it is still impossible to identify these bones as the remains of John the Baptist, the combination of genetics and radiocarbon is able to build a reliable picture of the age, ancestry, origin and context of relics such as these attributed to known individuals, in this case John the Baptist. By applying the same methods to a range of similarly attributed relics, the Cluster will be able to build a reliable database of genomic and dating results.

Find more about the Relics Cluster [here](#). On Monday October 12 the Cluster has a launch event (see p. 7).

## Research Centre in Victorian Political Culture

On 13 July, at the launch party for his new book, *Victorian Political Culture: 'Habits of Heart and Mind'* (Oxford University Press, 2015) held in the Library of Keble College, Professor Angus Hawkins announced the establishment of a new Research Centre in Victorian Political Culture here at Keble. The Centre will explore the intellectual, religious, linguistic, literary, social, technological and economic developments shaping the public culture of Britain from the 1790's to the beginning of the 20<sup>th</sup> century. Joining Professor Hawkins at the Centre are two of his former students, Dr. Ralph Walter and Dr. Kenneth Gray. Together they will be organising seminars, conferences, sponsor colloquia, and provide research resources for students and scholars of the period.



Angus Hawkins is Professor of Modern British History at the University of Oxford, a Fellow of Keble College, and a Fellow of the Royal Historical Society. His research explores British political culture from the 1790's to the beginning of the 20<sup>th</sup> century. He has written extensively on the politics of this period, his recent books include *Victorian Political Culture: 'Habits of Heart and Mind'* (Oxford, 2015) and *The Forgotten Prime Minister, the 14<sup>th</sup> Earl of Derby*, 2 volumes, (Oxford, 2007 and 2008).



Robert Faber, History Commissioning Editor at Oxford University Press, Prof. Angus Hawkins and Sir Jonathan Phillips, Warden of Keble. Photo: Ruth Cowen

## Meetings and events

### Creativity Cluster Lecture by Dan D. Hutto

(Professor of Philosophical Psychology, University of Wollongong)

#### "Active Imaginations and the Roots of Creativity"

Creativity is an imaginative business: How we understand it depends ultimately on how we think about the imagination. Instead of thinking of the basis of the imagination in purist, intellectual terms, Dan D. Hutto, Professor of Philosophical Psychology, University of Wollongong, proposed we should think of it in active, embodied, world-involving ways. This lecture made a case for thinking of basic forms of imagining in terms of Radical Enactive Cognition.



Professor Dan Hutto delivering his talk.

# Meetings and events

## Creativity Cluster Workshop Saturday 20 of June, Keble College “Form-making, thinking, and the creative process”

Humans are organisms of a creative sort. We create forms and things which alter the ecology of our minds, reconfigure the boundaries of our thinking, and afford new ways to engage and make sense of the world. What does it mean to say of human beings that they are producers of form? What are the major driving forces that spark, mediate, shape and constitute human creative agencies? The creative process is at the heart of human cognitive becoming. It is also fundamental to understanding the agency of things and the nature of transformation in material cultures.

The workshop integrated insights from different disciplines (archaeology, anthropology, psychology, cognitive science, philosophy and neuroscience) on the material, cognitive/biological, ecological, and social dimensions of the creative process. Scholars from a range of disciplines considered new ways of exploring the links between brain activity, bodily activity and material culture by investigating the interactive effects of materiality on creativity. These are issues with immediate real-world relevance in education, technology, science, or art. Approaching those issues from a cross-disciplinary perspective

could potentially help us to understand better how to implement and construct a more creative environment, develop innovative social attitudes and educational policies, and through that maybe a better world.

### Invited Speakers and topics included:

**Dan D. Hutto** (University of Wollongong)

Enactive Modelling: A Revolution in Mind

**Frédéric Vallée-Tourangeau** (Kingston University)

On the genesis of new ideas: Interactivity and insight problem solving

**Anna Abraham** (Leeds Beckett University)

The Neuroscience of Creative Cognition

**Carl Knappett** (University of Toronto)

Are miniatures mental models?

**Karenleigh A. Overmann** (University of Oxford)

Common creativity

**Matthew Walls** (University of Oxford)

Creativity and Subsistence: The Caribou Hunt as a Developmental Ecology of Mind

**Lambros Malafouris** (University of Oxford)

*Creative Thinking*



Professor Dan Hutto delivering the lecture “Enactive Modelling: A Revolution in Mind”

# Meetings and events

## Report on “The Wild Hunt and the Witches”

A Medieval and Renaissance Cluster lecture by Professor Ronald Hutton (University of Bristol).

Early this term, the distinguished historian and expert in the history of Paganism, Prof. Ronald Hutton (University of Bristol) visited Keble and gave a lecture entitled “The Wild Hunt and the Witches”. We heard that there were a number of versions of the tale of the ‘Wild Hunt’ across Europe. It had different names in different countries and regions, including Wilde Jagd and Ghost Riders. Then, in 1835, the folklorist Jacob Grimm, who aimed to harmonise ‘German’ beliefs, created a (new) description of what the hunt entailed that brought together various, often unconnected myths. Subsequently, some scholars believed that the wild hunt had Celtic origins and involved a nocturnal cavalcade with either a male (e.g. Herne the Hunter) or female (e.g. Holda, Bertha) divine leader, while others, such as the Italian historian Carlo Ginzburg defined it as a nocturnal ride, travel or gathering guided by a fertility Goddess (variously known as Diana, Venus, Holda, etc.) and a God of death as a form of new life or fertility cult and drew parallels with early modern witchbelief.



Professor Hutton’s talk assessed these various opinions and re-examined the historical evidence for the ‘Wild Hunt’ dating from as early as the 9<sup>th</sup> century and from a range of different parts of Europe including England, Austria, Germany and Spain. He questioned each of the elements contained in Grimm’s wild hunt, attempting to deconstruct the myth without recourse to modern (anachronistic) interpretations. We learned that few historical accounts contained all of the key elements of modern notions of the ‘Wild Hunt’ and even fewer suggested a direct link to the witches’ sabbat. Instead, he concluded that past societies which believed in nocturnal spirit rides, believed in one of three kinds: one of hunters, one of human souls undergoing penance, and one of a mixture of living humans and spirits led by a supernatural female. He then suggested and provided a new definition of the term for posterity, as a modern legend conflating the three medieval concepts. Find out about this new definition in Prof. Hutton’s soon to be published book, due from Yale University Press in a couple of years!



# Coming events...all welcome!

All ASC events are listed on [www.keble-asc.com](http://www.keble-asc.com)

## Network Pharmacology Workshop

The Keble Networks Research Cluster will hold a workshop on Network Pharmacology on Tuesday September 15, 2015, at Keble College Oxford.

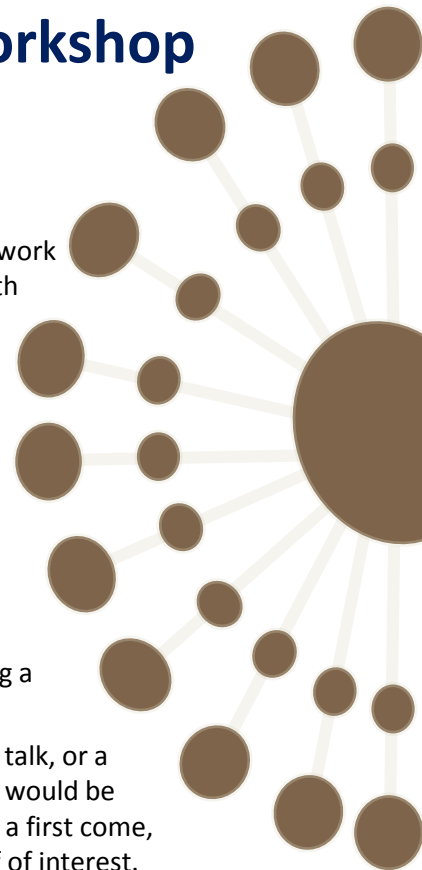
Network Pharmacology is an interdisciplinary research area which merges network analysis with drug target discovery. The workshop will cover the area from both angles. Speakers so far include:

Andrew Elliott, SABS-IDC, Oxford  
Garrett Morris, Statistics, Oxford (TBC)  
Mason Porter, Mathematics, Oxford  
Gesine Reinert, Statistics, Oxford  
Alan Whitmore, e-Therapeutics, Long Hanborough

All are welcome; however the space is limited so registration is essential.

Refreshments will be provided but **please register** for the workshop by sending a short email to: [keble.networks@gmail.com](mailto:keble.networks@gmail.com)

with your name and affiliation and whether or not you would like to present a talk, or a poster (no requirement to do so). If so, then a title and ideally a short abstract would be very helpful. Unfortunately the room seats only 60; places will be allocated on a first come, first served, basis. Please pass this information on to members in your group if of interest.



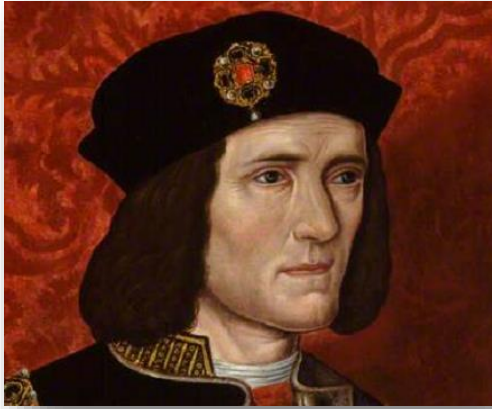
## What is Network Pharmacology?

Based on advances in chemical biology and network science, **network pharmacology** is a distinctive new approach to drug discovery. It involves the application of network analysis to determine the set of proteins most critical in any disease, and then chemical biology to identify molecules capable of targeting that set of proteins. By addressing the true complexity of disease and by seeking to harness the ability of drugs to influence many different proteins, network pharmacology differs from conventional drug discovery approaches, which have generally been based on highly specific targeting of a single protein. Network pharmacology has the potential to provide new treatments for complex diseases where conventional approaches have failed to deliver satisfactory therapies.

## More up and coming events...

All ASC events are listed on [www.keble-asc.com](http://www.keble-asc.com)

### Relics Cluster Launch Event - Finding Richard III



Come and join us in the launch of this Cluster with an introductory lecture and then a presentation by Turi King and Jo Appleby of Leicester University, two of the scientists involved in investigating the remains of Richard III found in Leicester.

All are welcome.

**Monday 12th October, 5pm, O'Reilly Theatre.**

Please visit [www.keble-asc.com](http://www.keble-asc.com) for more details about this Cluster and event.

### Relics Cluster Lecture by Professor Bronwyn Parry

Bronwyn Parry, Professor of Social Science, Health and Medicine at King's College London, will be visiting Keble in October. During her stay, she will deliver a talk on **Wednesday 21st October, 5pm** in the Griffiths Room, covering some of the social, cultural and ethical issues raised by using relics as research resources, as well as how this might be negotiated. The lecture will be followed by a discussion session and drinks reception. All welcome.

Professor Parry's primary research interests lie in investigating how human-environment relations are being re-cast by technological, economic and regulatory change, including the extraction and use of bio-information. Find more about her work [here](#).



### "Dating Saints: Study of the relics of Belgian 'local' saints" by Professor Mark Van Strydonck

Professor Mark Van Strydonck specialises in radiocarbon dating and stable isotope research ( $^{13}\text{C}$  and  $^{15}\text{N}$ ). Since 1978 he has been responsible for the radiocarbon dating laboratory at the Royal Institute for Cultural Heritage (KIK-IRPA for its initials in Dutch and French, respectively), an institute committed to the inventory, the scientific study, the conservation and the promotion of the country's artistic and cultural property. Mark will talk about his work exploring the relics of Belgian saints using modern scientific methods.

**Wednesday November 11<sup>th</sup>, 5pm, Pusey Room, Keble.**

