

CHRISTIANS · IN · SCIENCE

# Science and Christian Faith in 2012

*An Enduring Partnership*

A CiS Residential Conference

13<sup>th</sup>-16<sup>th</sup> July 2012

Queens' College, Cambridge University



## Welcome from Chairman of CiS

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It's my pleasure to welcome you to the Christians in Science conference *Science and Christian Faith in 2012 - An Enduring Partnership*. This meeting offers a unique opportunity to hear presentations from a large number of world-leading scientists covering a wide range of important issues in Science and Christianity. At a time when many seek to drive a wedge between science and faith it is encouraging to bring together such an impressive list of eminent scientists who are practising Christians.

We have an excellent programme over the next three days, which covers many topics across the Science-Faith spectrum. We hope that this will stimulate discussion and facilitate networking. We look forward to learning many new things and to being encouraged in our Christian faith as we make new friends and renew old acquaintances. We hope to create a relaxed and informal atmosphere that facilitates discussion in the lectures and poster sessions as well as in networking during the breaks and social occasions.

We are grateful to the Templeton Foundation for supporting *Christians in Science* with a grant "Capacity Building on Science and Faith in the UK Evangelical Community" (#13660), part of which has enabled us to organise this conference. Further financial assistance has been generously provided by the Faraday Institute and *Deo Gloria*.

If you require any assistance during the conference, please contact the registration desk or ask any of the volunteer helpers (who will be sporting red sashes for easy identification). For anything relating to your room, please contact the Porters' Lodge.

Many thanks are also due to Diana Briggs (CiS Secretary) and Becky Lowton (CiS Development Officer) who have worked hard to arrange the programme and to enable the smooth running of this meeting, and to Maggi Churchouse Events for administrative assistance.

I hope and pray that you will find the conference to be stimulating, useful and enjoyable, and that you will have a memorable time in Queens' Cambridge.



Keith Fox  
Chair, Christians in Science



## Contents

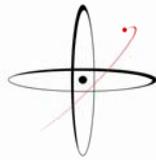
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## About Christians in Science

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## CHRISTIANS · IN · SCIENCE

CiS is an international network of those concerned with the relationship between science and Christian faith, open to scientists, teachers, students and all those with an interest in this dialogue.

We have hundreds of members in the UK and worldwide, all seeking to integrate their understanding of faith with their understanding of science.

### Our aims

- Developing and promoting Biblical Christian views on the nature, scope and limitations of science, and on the changing interactions between science and faith
- Bringing Biblical Christian thought on scientific issues into the public arena
- Encouraging Christians who are engaged in scientific work to maintain an active faith and to apply it in their professional lives
- Communicating the Christian gospel within the scientific community
- Stimulating responsible Christian attitudes and action towards care for the environment
- Helping Christians who are science students to integrate their religious beliefs and their scientific studies

### Our activities

#### Literature and resources

The journal *Science and Christian Belief* and a quarterly newsletter *PréCiS*, are sent to all members, and members also have online access to *God and Nature*, an online magazine produced as a collaboration between CiS and the American Scientific Affiliation (<http://godandnature.asa3.org/>). In addition we produce a monthly email update of news and events in the science – faith sphere and have a wide range of online resources which are available on our website at <http://www.cis.org.uk/resources/>

**Conferences** Three one-day conferences (including a student conference) are held annually in London and other UK locations.

#### Fellowship and support

Our members have been involved in organising local groups, lecture series, study groups, discussion forums, departmental prayer groups, and more.

[www.cis.org.uk](http://www.cis.org.uk)

Contact: CiS General Secretary, Dr Diana Briggs,  
5 Northmoor Road, Oxford OX2 6UW.

Email: [secretary@cis.org.uk](mailto:secretary@cis.org.uk)

Registered Charity No. 1121422

# Test of FAITH

Introductory resources from The Faraday Institute for Science & Religion

DVD, books, study material & online resources for churches, adults, youth & schools

- Three-part documentary - *Test of FAITH: Does science threaten belief in God?*
- Book - *Test of FAITH: Spiritual Journeys with Scientists*. Stories from 10 scientists, telling how science has enriched their discovery of God & subsequent faith journey.
- Study resources for adult small groups, UK secondary schools, and youth groups.
- Online videos, articles, briefing sheets & more.

Contributors: Prof. **Alister McGrath**, KCL; Revd Dr **John Polkinghorne**, KBE FRS; Dr **Francis Collins**; Prof. **Katherine Blundell**, Oxford University; Prof. **Simon Conway Morris**, Cambridge University; Dr **Denis Alexander**, The Faraday Institute; Dr **Jennifer Wiseman**, Astronomer; Prof **John Bryant**, Exeter University; Dr **Deborah B. Haarsma**, Calvin College; Prof. **Peter Harrison**, University of Queensland; Sir **John Houghton**, formerly IPCC; Dr **Ard Louis**, Oxford University; Dr **Alasdair Coles**, Cambridge University; Prof. **Bill Newsome**, Stanford University; Prof. **Rosalind Picard**, MIT; Dr **David Wilkinson**, St John's College, Durham.

*These short, readable accounts are a pleasure to read and an inspiration to anyone who seeks to integrate Christian belief and science...they tell very different life stories, yet they all affirm the Christian privilege of scientific discovery and understanding.*

*Professor Keith Fox, School of Biological Sciences, University of Southampton and Chair of Christians in Science, UK*

*I am very pleased that The Faraday Institute has been able to help churches and individual Christians in this task by developing this fascinating resource.*

*Rowan Williams, Archbishop of Canterbury*

[www.testoffaith.com](http://www.testoffaith.com)

## Christians in Science 2012 Student Essay Competition

**Entries can discuss any topic under the broad heading of "Science and Faith"**

**First prize: £200 Amazon gift voucher**

**Second prize: £100 Amazon gift voucher**

**Prizewinning essays will also be published on the CiS website**

**Entries must be e-mailed to [becky@cis.org.uk](mailto:becky@cis.org.uk) by midnight on the 31<sup>st</sup> August 2012**

**Full details, rules and guidelines at [www.cis.org.uk/student-essay-competition/](http://www.cis.org.uk/student-essay-competition/)**

## Information for Delegates

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### Emergency Procedures

The fire alarm is a two-stage alarm:

- intermittent ringing is an alert only, but no action is needed
- continuous ringing requires immediate evacuation

If you hear the continuous fire alarm, prepare to:

- leave the building by the nearest exit
- ensure that all persons within your group are accounted for
- ensure that any disabled persons have assistance
- follow any instructions given by resident staff.

Do not:

- use the lifts
- return to the building or enter without authority

### Security and Meals

Please note that conference badges must be worn at all times (access may be denied if not worn).

Meals will be taken in the dining room for those who have pre-booked. Except for the banquet, there are no tickets but the colour-coding on the badges determines your meal status. **Please do not try to obtain a meal unless you have pre-booked it.** The dining room staff have been instructed to serve only those with the correct badges.

### Smoking

Smoking is not permitted anywhere on the College premises, and smokers should go outside the College grounds to smoke.

### Registration Desk

The registration desk will be situated next to Cripps Dining Hall (no. 2 on enclosed map – page 6). The desk will be open at the times below:

Friday: 13.00-18.30  
Saturday /Sunday: 08.30-11.00  
Monday: 08.30-11.00 and at lunch and tea.

Any queries outside these times should be directed to the porters lodge or the conference helpers (identified by red sashes).

### Messages

Incoming and inter-delegate messages may be left on the message board at the Registration Desk. The telephone number for incoming calls is +44 (0)1223 335590 (registration desk). Please check the message board from time to time.

### Internet Access

Internet access is available free of charge throughout the college. A password is required and can be obtained at registration. The meeting rooms and some other communal areas have wi-fi and there is ethernet access in college bedrooms.

### Bookstall

A bookstall will be available in the Angevin Room (no. 4 on enclosed map, adjacent to the Fitzpatrick lecture theatre,). This will be open immediately after the main sessions as well as in lunch and refreshment breaks. Please note that payment will be by cash or cheque only.

## Information for Delegates

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### **Lecture Theatre Policies**

No unofficial reporting of conference proceedings is permitted. Those wishing to quote unpublished information received from talks or posters must obtain the express permission of the speaker or poster presenter concerned for quotation as a “personal communication”.

Within the lecture room, there must be no flash photography, usage of mobile ‘phones or external electronic reporting by social media (such as Twitter, Facebook, etc), or press/media coverage.

No post-event documentation will be issued. Anyone who is planning to write a commissioned review of the talks/posters for a publisher MUST contact the organisers to discuss this first.

Drinks may be taken into the auditorium but not food.

### **Poster Session on Sunday Evening**

Posters may be put up from the start of the conference but should definitely be in place by lunchtime on Sunday. Please contact one of the organisers or volunteers for assistance with this. Velcro fasteners will be provided for displaying posters. Please stand by your posters for the duration of the poster session (8.30-9.30 on Sunday evening). Posters should be taken down by 4.00 pm on Monday.

A pay-bar will be available during the poster session and throughout Sunday evening.

### **Sunday Worship Service**

This will be held at 8.45 am on Sunday morning in Queens’ Chapel, by kind permission of the Chaplain of Queens’, Revd Dr Jonathan Holmes, who will also take part in the service.

### **Reception and Gala Dinner on Saturday Evening**

Dress is smart casual. You will find your Gala Dinner ticket tucked inside your badge.

### **Cloakroom and Left Luggage**

Bedrooms are available from 2.00 pm on the day of arrival and must be vacated by 9.30 am on the day of departure. There will be a left luggage room available where residential delegates can leave luggage before check in and after check out. In addition, there will be a cloakroom available throughout the conference in which coats and luggage may be left. Please ask at the Registration Desk or Porter’s Lodge for more information. These areas will be unmanned and items are left here at your own risk.

### **Check out**

Please check out of bedrooms at Queens’ College by 9.30 am on the day of departure. Keys should be handed back at the Porters’ Lodge. The porter can direct you to the left luggage room where your luggage can be left for rest of the day. Before you leave, please also leave your badge, which will be recycled for another conference.

### **Evaluation Form for Completion**

Please be sure to complete and hand in your evaluation form before you leave. There will be boxes for these both on the bookstall and at the registration desk.

## Information for Delegates

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### Emergency Contacts

Please note the numbers below:

+44 (0)1223 335590	Registration desk during the hours listed above
+44 (0)1223 335500	Porters' Lodge at Queens' College (out-of-hours)
07980 793099	Dr Diana Briggs
07814 982295	Dr Becky Lowton

### Banking

There are a number of banks and cash machines (ATMs) in the area of Bene't and Market Street in central Cambridge.

### Tourist Information and Welcome Tours

The Cambridge tourism website is [www.visitcambridge.org](http://www.visitcambridge.org) and has lots of useful information including an online visitor guide. A map of Cambridge is available in your delegate pack. Please ask at the registration table for further advice on local tourist information. If you have reserved a place on the science tour, please meet at the registration desk at 2.15 pm for a 2.30 pm start. The Christian Heritage tour will begin at 2.15 pm so you should make your way to the Round Church by 2.00pm. This tour also includes an additional optional video of Cambridge which will begin shortly after 1.50 pm. Payment for the tours should be made before the commencement of the tour. Please pay in cash or by cheque at the registration desk for the science tour and in cash direct to the tour guide for the Christian Heritage tour.

### Travel

By bus and air: The bus station is in Drummer Street (about 15 minutes' walk), and buses run direct from here to Stansted, Heathrow and Gatwick airports.

By taxi and rail: The railway station is in Station Road, and you are advised to take a taxi (journey time is about 15-20 minutes). Some taxi telephone numbers are:

Cam Cabs	01223 704704
Atlas Taxis	01223 242424
Panther Taxis	01223 715715

# Site Plan

## Location of Events

Numbers refer to the map below.

Please note that due to building works taking place at Queens' this summer, there will be a temporary Porter's Lodge and access to the College will be via Fisher Gate.

Conference registration (2): next to Cripps Dining Hall

Plenary sessions: Fitzpatrick Hall (5)

Parallel sessions: Bowett Room (7), Armitage Room (11) and Old Kitchens (17)

Bookstall: Angevin Room (4)

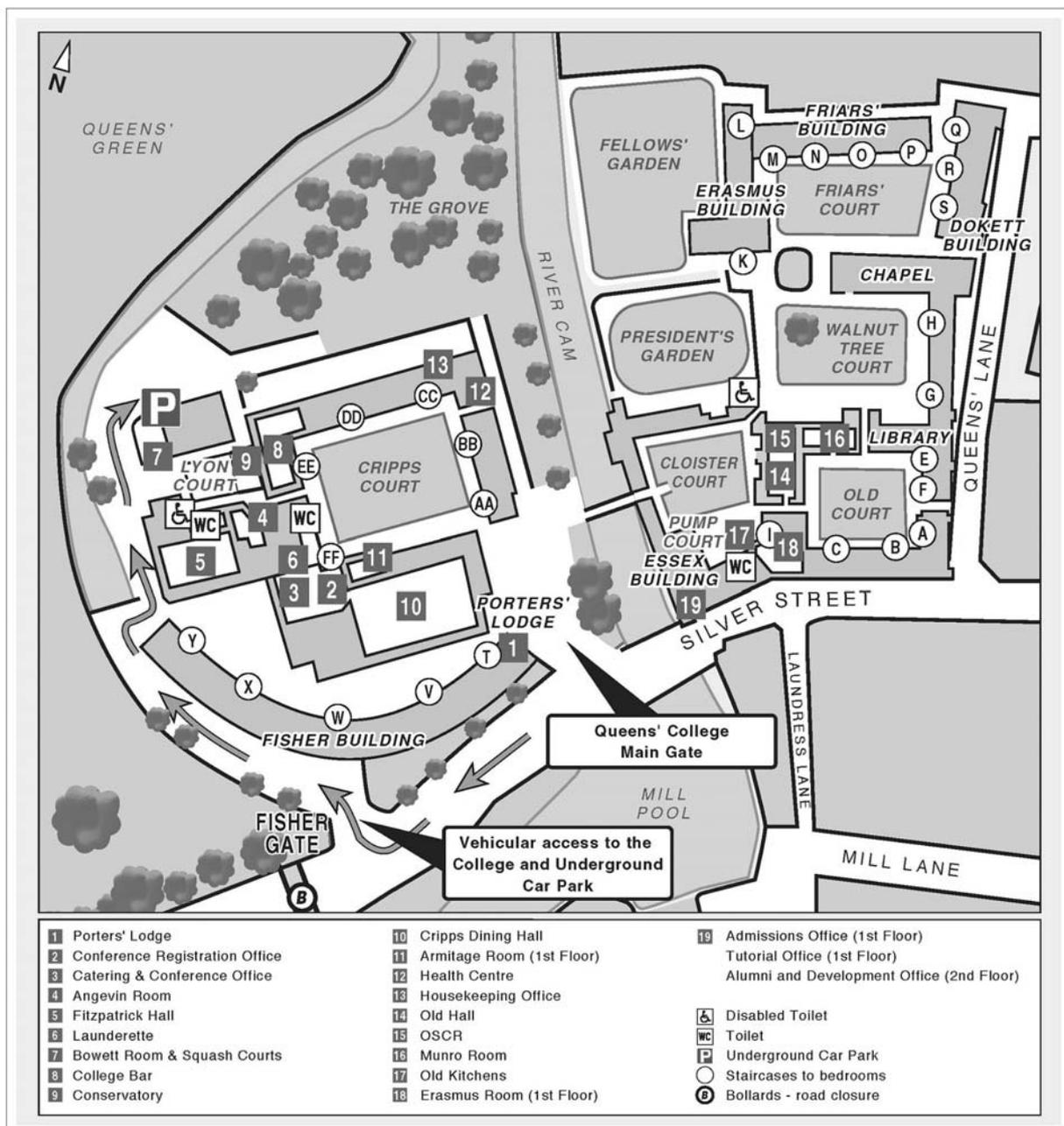
Meals: Cripps Dining Hall (10)

Sunday Morning Worship: College Chapel (H)

Bar, refreshments, poster session and exhibition area: (8)

BBQ and drinks before gala dinner: Lyon Court bar and conservatory (9)

Welcome reception: Old Court and Old Hall (14)



*For location of events, please consult details given in "Information for Delegates" and on site map.*

- 13:00 Check in and afternoon tours (until 17:00)  
17:30 *Welcome reception*  
18:45 Professor Alister McGrath, King's College London  
*Science and the Christian faith: seeing the big picture*  
20:00 *Informal dinner*

- 08:45 Opening worship in Fitzpatrick Hall

**Plenary Session 1**  
**History of Science and Religion – Perspective and Prospective**

- 09:05 Professor John Hedley Brooke, Oxford University  
*Science and religion in history: overviews and underviews*  
09:45 Professor Ed Larson, Pepperdine University  
*The reception of Darwinism in the nineteenth century Britain and US*  
10:25 *Refreshments*  
11:05 Dr Allan Chapman, Oxford University  
*Secular mythology about Christianity and science*  
11:45 Dr Elaine Howard Ecklund, Rice University  
*How scientists view religion and ethics*  
12:25 *Lunch*

**Plenary Session 2**  
**Neurosciences**

- 13:45 Professor William Newsome, Stanford University  
*Neuroscience and mental causation: do beliefs matter?*  
14:05 Dr Peter Clarke, Université de Lausanne  
*Neuroscience and the soul*  
14:25 Dr Alasdair Coles, University of Cambridge  
*Studying the religious brain in neurological disease*  
15:25 *Refreshments*

**Parallel Session I**

- 16:00 Short talks (details on page 10)  
18:15 Break  
19:15 *Gala dinner (pre-dinner drinks in bar/conservatory from 18:45)*  
*Informal talk - Rev Dr John Polkinghorne (University of Cambridge)*

08:45 Joint Worship Service in College Chapel  
Led by Rev Dr Jonathan Holmes, chaplain of Queens' College

09:45 *Refreshments*

### **Plenary Session 3 Creation Care**

10:15 Dr Jonathan Moo, Whitworth University  
*'Be joyful though you have considered all the facts': the Bible and creation care*

10:55 Rev Peter Harris, A Rocha International  
*Christians and bio-diversity: why theology matters to tree frogs*

11:35 Five-minute break

11:40 Professor Bob White, University of Cambridge  
*Are natural disasters acts of God?*

12:20 Professor Katharine Hayhoe, Texas Technical University  
*The non-political truth about climate change and a Christian response*

13:00 *Lunch*

### **Plenary Session 4 Biology**

14:00 Professor Simon Conway Morris, University of Cambridge  
*A few evolutionary myths ...*

14:40 Dr Denis Alexander, University of Cambridge  
*Genetics and human identity*

15:20 *Refreshments*

### **Plenary Session 5 Ethical Challenges**

15:50 Professor Gareth Jones, University of Otago  
*Ethical issues raised by cognitive and moral bioenhancement*

16:30 Professor John Wyatt, University College London  
*Dying well in a technological age*

17:10 *Short break*

### **Parallel Session II**

17:30 Discussion groups (details on page 11)

19:00 Break

19:30 *Informal meal (barbecue if fine)*

20:30 **Poster session, pay-bar, student social, free time**

08:45 Opening worship in Fitzpatrick Hall

**Plenary Session 6**  
**Using Science for the Benefit of Others**

09:05 Dr Mike Clifford, University of Nottingham  
*Science and the imagination*

09:45 Professor John Bryant, University of Exeter  
*GM crops and food security*

10:25 Professor Joe Perry, University of Greenwich  
*GM crops: evaluating safety*

11:05 *Refreshments*

**Plenary Session 7**  
**Computers and Artificial Intelligence**

11:35 Professor Lionel Tarassenko, University of Oxford  
*Endowing computers with human capabilities: what next?*

12:15 Professor Peter Robinson, University of Cambridge  
*Computations of emotions in man and machines*

12:55 *Lunch*

**Plenary Session 8**  
**Astronomy and Cosmology**

14:00 Professor Sir Colin Humphreys, University of Cambridge  
*Astronomy and the truth of the Gospels: what happened at Easter?*

14:45 Rev Dr Rodney Holder, The Faraday Institute for Science and Religion  
*God, the Big Bang, and the finely-tuned universe*

15:20 Dr Jennifer Wiseman, NASA  
*Habitable exoplanets: the implications for human significance*

16:00 *Refreshments and depart*

Time allowed for short talks will be 15 minutes. An extra 5 minutes is available for discussion.

**Room: Old Kitchens**

- 16:00 Dr Rhoda Hawkins  
*Attitudes to science and faith today in different countries*
- 16:20 Dr Malcolm Buchanan \*  
*Current perspectives on science and faith in Tanzania*
- 16:40 Laurence Hawkins  
*Test of faith: how it can be presented to sixth-formers*
- 17:00 Short break
- 17:10 Haley Main  
*Faith in action: engaging the Church in conservation*
- 17:30 Dr Pablo de Felipe  
*Is Christianity historically retreating in a conflict with science?*

**Room: Armitage Room**

- 16:00 Dr Clare Foster  
*Ethics in medical research – a Christian perspective*
- 16:20 Daniel Button  
*Where time and eternity meet*
- 16:40 Dr John Lockwood \*  
*Sustainability in crisis: some Christian reflections*
- 17:00 Short break
- 17:10 Michael Newton  
*Origins of faith: evolutionary, neurological, personal, divine?*
- 17:30 Revd Dr Philip Bligh  
*All in the mind? The reality of conceptual thought*
- 17:50 Dr Ruth Bancewicz  
*Science, theology and beauty*

**Room: Bowett Room**

- 16:00 Dr Hugh Reynolds\*  
*What the Bible says about the Created Order - a basic introduction*
- 16:20 Dr Jonathan Foster  
*The origin of life*
- 16:40 Perry Enever \*  
*Archaeopteryx as an origin's controversy icon*
- 17:00 Short break
- 17:10 Prof Sam Berry  
*Disputing evolution encourages environmental neglect*
- 17:30 Bethany Sollereeder  
*Not a tame lion: evolutionary evil and the openness of God*

\* indicates poster presenter

**Room: Old Kitchens**

*CiS - looking to the future*

Chaired by Professor Keith Fox

**Room: Armitage Room**

*Physical Sciences – general discussion*

Chaired by Professor Andrew Briggs and Professor Lionel Tarassenko

**Room: Bowett Room**

*Creation Care, Biology - panel discussion with plenary speakers*

Chaired by Professor Sir Colin Humphreys

**Room: Fitzpatrick Hall**

*Neuroscience, Ethics, History and Philosophy of Science - panel discussion with plenary speakers*

Chaired by Revd Dr Rodney Holder

## **Science and the Christian faith: seeing the big picture**

Prof Alister McGrath

*King's College London*

This lecture sets out a personal overview of the field, exploring the major themes of the dialogue between the natural sciences and the Christian faith. The lecture identifies and examines some of the major debates and discussions in the field, reflecting on their broader significance. Finally, the lecture considers how Christians working in the natural sciences can further their own reflections on the relationship of science and faith.

## Science and religion in history: overviews and underviews

Prof John Hedley Brooke

*Oxford University*

Historians often find themselves invited to give a historical overview of the relations between science and religion as a prelude to the discussion of pressing contemporary issues. Despite their willingness to oblige, the task is beset with problems. To compress centuries of sophisticated philosophical and theological discussion into a brief compass runs the obvious risk of trivialisation. Nor can there be a single privileged overview when so many are possible and when each may critically depend on the sympathies of the historian. Even the choice of historical examples may tacitly reflect ulterior commitments and interests. The sheer diversity of the meta-narratives is striking – ranging from the claim that science and religion have always been in conflict to the contrary thesis that, without a religious foundation (as, for example, provided by Christianity) there would have been no modern science. When the focus is sharpened, similar contrarities still appear. There is a familiar thesis to the effect that advances in scientific understanding have progressively shrunk the jurisdiction of a supernatural deity. This might be countered with a history showing that, until the middle of the nineteenth century at least, scientific knowledge was routinely seen as spiritually edifying, providing corroboration of the wisdom of the Creator. Overviews have sometimes taken the form of comparisons between one form of religious belief and another, with the attendant claim that the one has been more propitious for the sciences than the other. With various degrees of refinement, the meta-narrative that Protestantism was more conducive than Catholicism to the expansion of the sciences remains a prominent view.

During the last twenty-five years, historical scholarship on science and religion has switched in emphasis from overviews to what might be called underviews, the latter grounded in the detailed examination of particular events and debates, locating them in specific local and political contexts that are seen as shaping the attitudes of protagonists. I shall argue in this presentation that historical scholarship can be at its most revealing when it examines the failure of overviews. One, among many, lessons learned from such studies is that there are no simple relations of entailment between new scientific theories and consequences for religious belief, no simple relations, for example, between science and secularisation. The cultural meaning ascribed to new forms of science usually depends on the prior cultural presuppositions of the interpreter, as with the diversified responses to the mechanistic philosophies of seventeenth-century Europe, the science of Newton, and the evolutionary biology of Darwin and his successors. Moreover, receptivity to particular scientific innovations has varied significantly even within one and the same religious tradition. I shall conclude with a brief reference to the most recent historiographical innovations in the field of science and religion and their implications for a critical understanding.

## The reception of Darwinism in 19th century Britain and U.S.

Prof Edward J. Larson

*Pepperdine University*

*Malibu, CA USA*

*ELarson@pepperdine.edu*

Surveying the scientific scene in 1868, British naturalist and science leader Thomas Henry Huxley congratulated Charles Darwin, “You will have the rare happiness to see your ideas triumphant in your lifetime.” Most likely, Huxley referred solely to the basic concept advanced (but not originated) by Darwin that organisms of one species evolve from those of another by some sort of process involving descent with modification. Largely due to Darwin’s advocacy of it, by 1868, this concept was well on its way to routing the doctrine of special creation within mainstream scientific thought.

At the time, however, the term “Darwinism” could mean either descent with modification in general or Darwin’s more particular theory of evolution by the natural selection of organisms with inborn beneficial variations, with the two ideas viewed quite differently. Further, for non-scientists, Darwinism had become shorthand for evolution as applied specifically to humans. Darwin argued for both natural selection and descent with modification in his epoch 1859 book, *Origin of Species*, but never conflated them. “Personally,” he noted in 1863, “I care much about Natural Selection; but that seems to me utterly unimportant compared to the question of *Creation or Modification.*” While *Origin of Species* did not exempt humans from these processes, Darwin left the elaboration of that idea to others for over a decade.

Without an understanding of how heredity worked, late Victorian-Era scientists raised increasing doubts about the sufficiency of natural selection to account for evolutionary change without some means to supply directed variation within species. Various proposed means of direct variation tended to diminish both the role of natural selection in evolutionary development and the tensions between evolutionary science and Western religion. Darwinian theories of natural selection continued to lose ground among scientists in the final two decades of the 19<sup>th</sup> Century – so much so that by 1900, biologists were speaking of its eclipse or demise. The concept of evolution through descent with modification never faltered, though, and became ever more widely accepted by scientists. The theory of human evolution, meanwhile, advanced as it related to the development of the human body but not as Darwin wanted as to the emergence of human mental and moral characteristics. This lecture will trace the history of these three versions of ‘Darwinism’ during the late 1800s in Britain and the United States.

## Secular mythology about Christianity and science

Dr Allan Chapman

*Faculty of History  
University of Oxford*

One of the remarkable features in the so-called 'conflict between science and Christianity' is the way in which many advocates of secularism both generate and perpetuate myths. Indeed, it never ceases to amaze me how many anti-Christian scientists who, in their 'day jobs', are accustomed to observing standards of the utmost rigour and thoroughness in the handling of experimental evidence, can uncritically trade in myth, urban folklore, and a Grimm Fairy Tale world of legend when speaking about religion. Myths and legends, moreover, which invariably crumble when examined under the hard light of recorded historical evidence.

In 2010, for example, Richard Dawkins obtained permission and secured funding to erect a one-metre-high stone plinth outside the Natural History Museum, Oxford, to commemorate the 150th anniversary of the 'Great Debate' between Bishop Wilberforce and T.H. Huxley which allegedly took place there at the British Association meeting in June 1860. A world – changing 'Debate', indeed, which scarcely left a trace in the contemporary press and thinking, and was only elevated to pivotal iconic status in the hands of 20th-century anti-Christian propagandists and 'atheo-myth' makers. When I suggested in a magazine article at the time that the stone should at least state 'Samuel Wilberforce, F.R.S.' – for Bishop Wilberforce had been an F.R.S. for fifteen years in 1860 – it was ignored by the anniversary promoters. For after all, you cannot confuse the simple myth of a daring young evolutionary David ritually slaughtering a reactionary old episcopal Goliath by introducing historical fact, can you? Indeed, the 53-year-old Wilberforce had a First in mathematics, and many scientific friends. I was glad to see that when the stone did appear, however, its inscription contained no more than a date and two names. Nothing over the top!

Yet the Oxford 'Debate' is only one of the many historical distortions devised and perpetuated to convince the wider world that science and religion are axiomatically in conflict, with one fated to succumb, and the other to triumph. Indeed, there are dozens more.

What about the hoary tales that the medieval Church persecuted science; that Copernicus only dared publish his heliocentric theory when he was dying; and that Bruno and Galileo were martyrs to scientific truth? (And naturally, omitting the fact that Galileo's first, 1604, brush with the Inquisition came about because he cast horoscopes.)

And then there are the myths that say how the 'Enlightenment' liberated European civilisation from Church oppression – while conveniently forgetting that it was Evangelical Christians, not socio-scientific ideologues, who had abolished the slave trade and pioneered education for working people, along with many other social reforms.

In my lecture I want to explore a range of science-derived anti-Christian myths, covering a historical span from the early Middle Ages to the 21st century. And to ask how scientists of the highest academic distinction in their spheres of expertise can believe and perpetuate so many old wives' tales when it comes to Christian belief.

## How scientists view religion and ethics

Dr Elaine Howard Ecklund, Associate Professor of Sociology

*Rice University*

*ehe@rice.edu*

From 2005-2009 Rice University sociologist Elaine Howard Ecklund completed the most comprehensive study to date of how US scientists at top universities understand religion, spirituality, and ethics, surveying nearly 1700 of them and doing in-depth interviews with 275. During the Christians in Science lecture she will discuss her book on this topic, *Science Vs. Religion: What Scientists Really Think* (Oxford University Press). She will compare this work with recent interviews she has completed among biologists and physicists in the UK. Finally Ecklund will discuss a new study she is beginning that will survey 10,000 biologists and physicists at different points in their careers at top universities and research institutes in the United States, the United Kingdom, Turkey, Italy, France and China to determine how scientists in different national contexts understand the relationship of science and religion (and, where relevant, spirituality) and how religion and spirituality influence their research agendas, daily interactions with students, and ethical decisions and discussions.

**Neuroscience and mental causation: do beliefs matter?**

Prof Bill Newsome

*Department of Neurobiology  
Stanford University School of Medicine*

The 'central dogma' of neuroscience is that all our behavior and mental life—including our sense of a conscious, continuing self—is inextricably linked to the biology of the brain. Neuroscience 'explanations', therefore, tend to account for mental phenomena such as thought, emotion and belief in terms of the basic elements of cellular communication within the brain—action potentials, synapses and neuromodulation. Such mechanistic accounts, which appear increasingly powerful, have been cited as evidence that 'folk psychological' explanations of behavior—including beliefs, values and personal responsibility—will be replaced ultimately by deeper and more accurate neuroscientific explanations. In contrast, I argue that the deepest and most accurate accounts of behavior necessarily involve multiple levels of explanation. Within neuroscience itself, the best explanations are inherently multilevel, appealing simultaneously to behavioral, circuit-level, cellular and genetic insights. Outside the domain of neuroscience proper, human behavior depends additionally on multiple levels of social and cultural organization. Each level of explanation complements and corrects, but does not replace, the others. More than ever in our world, beliefs and values matter.

**Neuroscience and the soul**

Dr Peter G H Clarke

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There is currently a triple debate about the soul, at the levels of philosophy, theology and neuroscience. The Cartesian/neoplatonic notion of a mind (or soul) interacting with the brain is unpopular, but there is still debate, and current positions vary between the extremes of interactive dualism and materialistic monism. Many Christians adopt the intermediate position of dual aspect monism, according to which objective neuroscientific accounts of brain function and subjective accounts of personal experience are complementary descriptions of a single entity, the human being. This view is supported by many biblical scholars, who argue that the biblical conception of man is holistic and monistic, but some argue for dualism. Other support for dualism is sometimes adduced from near death experiences and from metaphysical problems with monism. Among neuroscientists, only a tiny minority supports interactive dualism, but it is sometimes argued that quantum indeterminism may leave an opening for mind-brain (or soul-brain) interaction, or that mind (or spirit) may be capable of interacting with the brain. In my talk I shall summarise the ongoing debate at the levels of philosophy and theology, and address the contributions of neuroscience. I shall argue in favour of dual aspect monism, while admitting that moderate forms of interactive dualism cannot be rigorously excluded.

## Studying the religious brain in neurological disease

Rev Dr Alasdair Coles

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The classical approach to understanding the higher functions of the human brain is to observe what happens when it is focally damaged. For instance, key understandings of the temporal lobes and of the frontal lobes came from the patients “HM” and Phineas Gage respectively. Most of what we currently know about the neurophysiology of human language came from studying patients with strokes and tumours affecting the various language pathways.

The advantages of this traditional neurological approach over imaging of the healthy brain is firstly that patients with brain injury can be repeatedly examined in real-life situations (in the case of “HM” over decades!). Secondly, in the case of diseases which stimulate the brain (epilepsy and migraine) causality can be inferred (in brain imaging, at best, a behaviour is associated with a particular activation pattern).

The first writers on the neurology of religion, for instance William James and James Leuba, focused on the manifestations of temporal lobe epilepsy. Wilder Penfield explored the function of the temporal lobe further by stimulating it in awake patients during epilepsy surgery. More recently, people with fronto-temporal dementia have given some clues to the role that the frontal lobes subserve in the religious brain. People with Parkinson’s disease have been examined by one group to date.

From such work emerges the unsurprising conclusion that different components of religious life are mediated by varied brain pathways. Defining these further has implications for the pastoral care of people with neurological disease as well as exploring the neuroanatomy of religiosity.

**‘Be joyful though you have considered all the facts’:  
the Bible and creation care**

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The present century will be defined by our success or failure in addressing human-caused ‘environmental’ challenges unprecedented in their scope and magnitude, reflecting the outsized role that we as a species now play within the biosphere. The enormity of our task understandably leads many to despair; and many more simply ignore or deny the reality of what we face. Christians nonetheless have no excuse but to consider ‘all the facts’ carefully and honestly and to enter into the hard work and transformative living that is required if we are today to be faithful followers of Christ. Scientists are often among those best qualified to understand and communicate the relevant issues and so have a particular responsibility—no matter what their own discipline—to help others regain appreciation for the created world, to articulate clearly the limits and the potential of science and technology, and to call the church to active, faithful witness in caring wisely and well for the earth.

When we turn to the Christian Scriptures to learn about ‘creation care’, we admittedly are asking questions that these ancient texts were not written to address. Yet, if we take seriously what the biblical narrative reveals about God, what it is to be human, the value of non-human creation, and God’s purposes for creation in Christ, we will find that nothing less than a radical environmental ethos is demanded of us today. The Bible portrays a richly diverse creation, full of life that is valued by God and exists for his glory. Within this community of creation, human beings are just one land animal among others and yet are set apart as God’s image bearers, servant-rulers whose role is defined ultimately in Christ. If Darwin helped recall us to a more biblical understanding of the humble place of humanity within creation, the recent labelling of our age as the ‘Anthropocene’ should remind us of the profound responsibility that we nonetheless have for creation’s near and medium-term future. Scripture also tells us, however, that creation’s future lies finally in the hands of God, who in Christ renews and reconciles to himself all things.

If we are today to love God and neighbour, we must care for all that God has made and values, including the non-human creation; and we cannot in any case love our human neighbours without caring for the earth too. If we place our hope for the future in Christ, our orientation towards creation in the present must reflect God’s purposes for its ultimate liberation from the ruin that it so often suffers at our hands. Yet we are not the saviours of the planet. Rather, we are enabled by the Spirit to live as children of God, reconciled to each other and the earth, becoming instantiations of the kingdom of God inaugurated in Christ, signposts to the new creation to come and members of a resistance movement against the powers that would destroy the earth.

In the light of this hope, there is no place for apathy or despair. Our lives and our work to care for the earth will be marked by joy in our fellowship together, joy in a created world that yet bears witness to the glory of God, joy in the Spirit who binds us to Christ and gives new life now and in the future, and joy in the risen Christ in whom all our labour is not vain.

**Christians and bio-diversity: why theology matters to tree frogs**

Revd Peter Harris

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In recent years the realisation that many ecosystems around the world are in crisis, and debates about climate change, have pushed the care of creation onto the Christian agenda. However our own biblical faith, and the evident impact of rapid environmental degradation on the world's poorest populations, might have persuaded us towards action long before the secular media caught our attention. However even as a belated phenomenon, the rise of Christian environmental concern coincides with widespread questioning in the wider conservation community about the role of human and societal values in determining environmental policy and outcomes. At the level of analysis there is a considerable convergence between secular and Christian commentators and practitioners about the problems that we face as we imagine a sustainable future for human communities on earth and for biodiversity. There are an increasing number of case studies which demonstrate the potential value of considering the role that belief, and the Christian church world wide, could play in designing ways forward. Even so, current arguments for biodiversity conservation, such as valuing ecosystem services, raise questions for Christians and so we will look at how a Christian approach is distinctive, and consider the potential global impact of the growing creation care movement.

## **Are natural disasters acts of God?**

Prof Robert (Bob) White

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We live in a world where the same natural processes that make it habitable can turn round and bite us, killing thousands or even hundreds of thousands of people at a stroke. Natural disasters pull us up sharp and make us face head-on the hard questions of life and death. For atheists and agnostics they challenge humankind's hubris that we can control our environment – or that our cleverness can keep us from suffering. For Christians they raise the hard question of why an all-powerful, all-loving God allows such things to happen. Natural disasters bring into sharp focus the relationship between the creator God, his creation and humans made 'in his image'.

I shall address the issues of what causes natural disasters, and to what extent they are exacerbated or in many cases even caused by human actions. I will then go on to look at what scripture says about natural disasters and about the relationship between the creator God, his creation and humans made in his image. This will be illustrated by examples of the responses of three biblical figures to disasters: Joseph, Job and Jesus.

The Christian gospel is shot through with hope not just for the present but also for the future. In the incarnation, death and resurrection of Jesus, God has defeated the powers of death and has inaugurated his restored rule over all of his creation. This provides a radically different perspective than the secular world can offer on the problem of natural disasters. In the face of a disaster, the secular world can only shake its head and say 'we must do better next time'. That is not much comfort to the bereaved and suffering. And when the next time comes and is even worse, it leads to frustration, to disappointment and to despair.

The Christian perspective sees the reality of the brokenness of this world, but also the truth of God's sovereignty over it and of his ultimate plans for a new creation. That does not mean that we need not strive to improve things now. Rather it points in the opposite direction, that we should work for better scientific understanding of disasters, that we should enable communities to build resilience against them, that we should strive to remove the unjust disparities in wealth and resources that mean it is so often the poor who suffer most. The gospel is radical in its challenge and promise of transformation and renewal that begins now and points us toward the future. It should centre our thinking on the cross and resurrection of Christ. The cross reminds us of the cruciform life to which we are now called; the resurrection confirms and displays to us God's purposes for all of his creation

**The non-political truth about climate change and  
a Christian response**

Prof Katharine Hayhoe

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Our planet is currently warming at a rate unprecedented in human history. The finger of evidence clearly points to increasing heat-trapping gases from human activities as the main cause, and harm to the poor, the disadvantaged, and the vulnerable as the main impact. Despite extraordinary scientific consensus on the cause and effects of global warming, however, disagreement continues: on the reality of this issue, its severity, and the viability of actions to reduce dependence on fossil energy and adapt to future change. Psychology, partisanship, scientific complexity and even theology contribute to building barriers that impede action. Our Christian faith is key to defining our perspective on this critical issue that is already transforming our world.

## **A few evolutionary myths ...**

Prof Simon Conway Morris

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Myths are not fairy tales, nor are they make-believe. All science is underpinned by assumptions that have to be taken for granted on a day-to-day basis, and in certain cases must simply be accepted as given. Evolution is no exception. And anybody out there who tries to hijack this for “intelligent design” or some equal rubbish, could you please expend your undoubted energies elsewhere?

Here I will take a new look at old favourites such as missing links, mass extinctions, sub-optimal states, etc and suggest they could benefit from reappraisal. “Missing links”? Of course they exist, but the fossil record gives an interesting new slant. “Mass extinctions”? Very nasty, but do they redirect evolutionary history? “Sub-optimal”; tell that to enzyme or sensory systems. Then there is the big one, that grave-yard of endeavour: consciousness.

## Genetics and human identity

Dr Denis Alexander

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Genetics has often been seen as a threat to human value and autonomy, not least due to the sad history of eugenics during the course of the 20<sup>th</sup> century. Over this same period attitudes toward the inheritance of behavioural characteristics have swung wildly between viewing the new-born's mind as a 'blank slate', ready to be shaped by the environment, and the opposing view of seeing human nature as shaped entirely by our genes. Such attitudes have often been more influenced by social and political factors than by the science of genetics. The advent of human genomics during the past decade has led to frequent media reports of the discovery of genes "for" a particular human trait, helping to shape the contemporary public discourse within a framework of genetic determinism. In reality, however, contemporary molecular and developmental biology have done much to subvert such simplistic thinking, revealing the 20<sup>th</sup> century tendency to think about 'nature' and 'nurture' as two distinct entities as being both unnecessary and misleading. Today genetics impacts on questions of human identity in a whole range of different ways. Sequencing of thousands of human genomes has shown that human individuals are genetically more different from each other than was known only a few years ago, highlighting our individual uniqueness as those made in God's image. Population genetics has confirmed that 'race' is a political and historical construct with no basis in genetic differences. Epigenetic regulation, the chemical modifications that cause genes to be switched on or off, has been found to be exquisitely responsive to changes in the environment; epigenetic modifications can be brought about by human choice and even be inherited by subsequent generations. Perhaps most important of all is the insight that human identity is shaped not by the interaction between 'nature' and 'nurture', but as the result of a long process of development which starts with the fertilisation of the egg and continues until the grave. We inherit from our parents a DNA-RNA-protein-lipid system and it is this biological system which develops within its microenvironments and macro-environments to generate unique human individuals. There is nothing in contemporary genetics which threatens our sense of human freedom and moral responsibility before each other and before God, with the exception of those rare and sad situations in which gene mutations disrupt normal development near the very beginning of life, or where development is affected to the extent that the ability to assess the consequences of actions becomes significantly diminished. Just as genetic variation enables evolution to occur, rendering our existence as unique human individuals possible, so also that same variation is the cause of thousands of rare monogenic diseases inherited according to classical Mendelian laws. In addition genetic variation contributes polygenic risk factors in the generation of major diseases, such as heart disease, cancer and diabetes, which numerically make up the bulk of human disease. A huge amount of genetics research is rightly directed towards the diagnosis and healing of such disease. Yet, however efficient genetic medicine may become, the same genetics that contributes to the flourishing of human lives, endowed with the benefits and challenges of free-choice, is also the genetics that eventually ensures the beginnings of our own transition to the new heavens and the new earth, where with non-carbonaceous resurrection bodies we will no longer be constrained by the limitations of our DNA-RNA-protein-lipid systems.

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## Ethical issues raised by cognitive and moral bioenhancement

Prof D Gareth Jones

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The notion of enhancing ourselves technologically has been in vogue for a number of years. Unfortunately, the very concept of enhancement is far from clear, with definitions veering from the everyday (drinking a cup of coffee) to the excessively grandiose (improving fundamental human traits to transform mere humans into super-humans). While many facets of these debates are intensely speculative and appear far removed from reality, they present disturbing challenges to Christian thinkers since they espouse a profoundly reductionist view of human existence. Allied with this concern is a range of ethical concerns, especially when the enhancement centres on the brain. Consequently, one encounters calls for moral enhancement via various forms of biological manipulation, including use of an increasing range of drugs, changes to the levels of various hormones and neurotransmitters, or through stimulation of selected brain regions. Examples of crude moral enhancement are already with us, and the intention of more sophisticated approaches is to enable individuals to demonstrate improved moral behaviour. What if it becomes feasible to make individuals more self-sacrificial, empathic, and altruistic, or decrease their impulses towards violence and aggression? Perhaps they (and we) could be made more intelligent, more loving and even more spiritual (more prayerful and more mission-minded). Perhaps the level of plagiarism and fraud would decrease, along with the incidence of marital infidelity. If trends such as these could be brought about by a pill (or many pills in practice) what would this tell us about human freedom, and the ability to choose good over evil? Is there virtue in being free to fall, or is this no more than an antiquated (theological) notion that pre-dates the era of 'moral' technology? The vistas held out for the contemporary world are eerily reminiscent of those envisaged by Aldous Huxley in *Brave New World*. The challenge for those with a theistic world view is to formulate an ethical perspective capable of addressing the pressures emanating from a 'morality in a bottle' mentality, a mentality that we have to some extent already bought into.

## **Dying well in a technological age**

Prof John Wyatt

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The arguments in favour of the legalisation of assisted suicide and euthanasia are no longer focussed on unbearable suffering. Instead there is a rising demand for choice and control over the time and manner of our death, coupled with fears about the social and economic consequences of increasing numbers of elderly and dependent individuals, and the inappropriate use of life-sustaining technology at the end of life. There are strong medical, legal, social and theological reasons to oppose the drive for suicide and euthanasia. The potent modern myth of the autonomous individual fails to match with the inescapable realities of our embodied human nature, of human dependence and interrelatedness. What does it mean to die well in the context of the options which medical technology offers?

## Science and the imagination

Dr Mike Clifford

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This talk explores the apparent tension between objective science and creative thought. The scientific method can be said to be based on observation and classification, but without the audacious use of a renewed imagination, there can be no significant breakthroughs or new theories to explain the wonder that is experienced when observed data challenges our existing models and world-view.

As well as reading God's "book of works", we are to think God's thoughts, and to dream God's dreams. Examples of subconscious inspiration through dreams and visions will be discussed along with imaginative use of scientific knowledge in disparate scientific fields from pure mathematics to engineering. Concepts such as genius and inspiration will be unpacked in sympathy with a Christian world-view.

**GM crops and food security**

Prof John Bryant

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Since their introduction to the market place in 1996, GM crops and the products made from them have had a bad press in much of the EU, including the UK. Even 16 years on, there is still a good deal of antipathy and the only EU country to have adopted GM crops on a significant scale is Spain. Indeed, as I write this abstract I am waiting to be interviewed on local radio about yet another act of vandalism against a crop variety bred by GM techniques

In the first part of the talk, I will examine the reasons for negative attitudes to GM crops and develop my view that evaluation of new crop varieties should focus primarily on the genetic traits and not on the method by which those traits have been delivered. The GM crops that are grown widely outside the EU will be discussed in the light of this view.

I will then move on to consider the problems we will face in feeding the growing population of the world in a changing climate and ask what targets plant breeders need to work on in order to improve food security. I will argue that in relation to hitting those targets, GM and associated techniques must be allowed in the plant breeders' 'toolkit'. Denying them these tools would be a serious handicap to their work.

**GM crops: evaluating safety**

Prof Joe N. Perry

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New technologies present new potential risks. Indeed, it was the scientific community itself, during the 1980s, that recognised that GM technology required risk assessment and, for any risks demonstrated, risk management. Risk assessment within the EU will be compared to that in the USA. How much data do we require to form an opinion regarding safety. Socio-economic concerns will be contrasted with scientific issues.

What role does a Christian have in such a controversial area? Truth is paramount for Christians – is true objectivity possible for those with an agenda, either pro- or anti- GMOs?

Risk assessment for food and feed is contrasted with that for environment. Associated challenges abound for Christians: doesn't agriculture always harm the environment? can GMOs ever be consistent with our stewardship responsibilities? why should organic agriculture be mutually exclusive to the use of GMOs? bearing in mind that organic agriculture is far less efficient than conventional agriculture, how do we balance our needs to feed the world with our desire to protect farmland ecosystems?

The assessment of food and feed risks of GM crops are summarised. Recent examples of environmental risk assessments of GM crops are given. Recent advances in guidance for risk assessment are described, focussing on false positive and false negatives and how the risk of a wrong opinion is balanced between producer and consumer. Finally, if there is time, some future issues will be discussed that are likely to prove as controversial as those already encountered!

## **Endowing computers with human capabilities – where next?**

Prof Lionel Tarassenko

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The concept of artificial intelligence was first proposed by the British mathematician Turing more than sixty years ago. We now live in a world full of intelligent machines: fuel injection systems in cars use adaptive algorithms; every mobile phone call is routed using artificial intelligence. It is more than a decade since the best chess player in the world was beaten by an IBM computer. A major strand of artificial intelligence research has been concerned with endowing computers with human capabilities, for example the ability to learn. This talk will trace the evolution from neural networks with simple learning rules to machine learning with complex algorithms. We will end by considering consciousness, which is seen by many as the final link in an evolutionary chain of more and more intelligent computers, from the perspective of systems theory applied to biology, and from a Christian world-view.

## **Computation of emotions in man and machines**

Prof Peter Robinson

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The importance of emotional expression as part of human communication has been understood since the seventeenth century, and has been explored scientifically since Charles Darwin and others in the nineteenth century. Recent advances in Psychology have greatly improved our understanding of the role of affect in communication, perception, decision-making, attention and memory. At the same time, advances in technology mean that it is becoming possible for machines to sense, analyse and express emotions. We can now consider how these advances relate to each other and how they can be brought together to influence future research in perception, attention, learning, memory, communication, decision-making and other applications.

This talk will survey recent advances in theories of emotion and affect, their embodiment in computational systems, the implications for general communications, and broader applications. The combination of new results in psychology with new techniques of computation on new technologies will enable new applications in commerce, education, entertainment, security, therapy and everyday life. However, there are important issues of privacy and personal expression that must also be considered.

<http://www.cl.cam.ac.uk/emotions/>

## **Astronomy and the truth of the gospels: what happened at Easter?**

Prof Sir Colin Humphreys

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Apparent inconsistencies in the Gospel accounts of Jesus' final week have puzzled Bible scholars for centuries. Matthew, Mark and Luke clearly state that the Last Supper was a Passover meal, whereas John asserts that it occurred before the festival. The Gospel narratives also do not seem to allow enough time for all the events recorded between the Last Supper and the Crucifixion, whilst indicating that Wednesday was a "missing day" on which Jesus did nothing. This talk will show how astronomy can be used to reconstruct Jewish calendars in the first century AD. Clues in the Gospels will then be used to determine the exact date of the Crucifixion. Finally, it will be shown how the apparent inconsistencies in the Gospels referred to above can be explained.

There were a number of different Jewish calendars in use in Israel in the first century AD, and so different Jewish groups celebrated Passover on different days. We have a similar situation today with the date of Easter: Catholics and Protestants celebrate Easter on a different date from Greek and Russian Orthodox Christians, because they calculate the date of Easter using different calendars (Gregorian and Julian, respectively). In his description of the Last Supper, John uses the official Jewish calendar, in which the Last Supper came before the date of the official Passover. However, Jesus chose to hold his Last Supper on the date of Passover using a different Jewish calendar, the pre-exilic Jewish calendar, which is what Matthew, Mark and Luke report. So all four Gospels in fact agree.

Reconstruction of these ancient calendars shows that the Last Supper was on a Wednesday, with the Crucifixion on the traditional Friday. This provides just the right amount of time to fit in the large number of events recorded in the Gospels between the Last Supper and the Crucifixion. In this talk science and the Bible will be used hand-in-hand to unify the supposedly contradictory Gospel texts.

## **God, the Big Bang, and the finely-tuned Universe**

Revd Dr Rodney Holder

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How did the universe begin and how has it evolved? Does a scientific explanation mean that we can do without God? Why are the laws of nature so special ('fine-tuned') as to produce a universe with intelligent creatures like us in it in the first place? Can the existence of a multiverse, a vast or infinite collection of universes, explain the specialness of this universe? This talk will explore whether and how, in the light of the discoveries of modern cosmology, we can still speak of a divine mind behind the creation.

## **Habitable exoplanets: the implications for human significance**

Dr Jennifer Wiseman  
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In recent years, astronomers have detected over 600 planets outside of our own solar system, and many more are being identified as possible planets. Thus very rapidly the study of these "exoplanets" has moved from being in the realm of science fiction to being a top priority of the world's astronomical programs. Actual images of extrasolar planets are now being revealed for the first time. The NASA-ESA Hubble Space Telescope is already characterizing the atmospheres of Jupiter-like planets and "super-Earths" in other systems.

And the NASA Kepler space telescope is enabling the first statistical assessment of how common solar systems like our own really are.

Will we find planets like "Earth"? How will we know if there is life beyond Earth? And what will finding (or not finding) other life-friendly planets mean for our understanding of human significance, religious teaching, and our relationship to God? As we begin to characterize these "other worlds" and assess their habitability, the question of the significance and uniqueness of life on Earth will impact our society as never before. I will provide a comprehensive overview of the techniques and status of exoplanet detection, followed by reflections as to the societal impact of finding out that Earths are common, or rare. Will finding other potentially habitable planets create another "Copernican Revolution"? Will perceptions of the significance of life on Earth change when we find other Earth-like planets?

I will discuss the intriguing implications for humans of searching for life elsewhere.

## **Attitudes to science and faith today in different countries**

Dr Rhoda Hawkins, Lecturer

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In this talk I will discuss and compare current attitudes to science and faith found in different countries. My comments will be partly based on my own experiences of living and working as a scientist in different countries (the UK, the Netherlands, France and South Africa). I will also comment on countries I have visited as a scientist (including Senegal, the US and Iran). As well as my own direct observations, I will present opinions of international colleagues about attitudes in their home countries. The international nature of my topic demands comments not just on Christian faith but also on other religions. In addition to discussing common attitudes I will mention existing relevant activities, resources or groups I am aware of. In conclusion I will share some ideas as to how we can all learn from each other to ensure an enduring partnership between science and faith globally.

## **Current perspectives on science and faith in Tanzania**

Dr Malcolm S. Buchanan, Senior Lecturer

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Tanzania, in East Africa, is one of the world's least developed nations. Spiritism continues to have a strong hold on Christians (and Muslims) because African traditional beliefs permeate all parts of life from family to the community and political life. St. John's University of Tanzania (SJUT) located in Dodoma, the capital of Tanzania, was started by the Anglican Church of Tanzania in 2007 and has the vision "to be a centre of excellence for developing humankind holistically to learn to serve". The interaction between science, theology and culture is an area of interest and a course I am developing on "Science, Faith and Culture" is planned to start in the first Semester of the 2012/2013 academic year. Therefore, in order to better understand current beliefs in the relationship between science and religious faith a survey was carried out on Tanzanian staff and students at SJUT. The Tanzanians surveyed were from a spread of ethnic groups, predominantly Christians (from a range of denominations) and some Muslims, and were from the disciplines of Science, Theology and Humanities. The results of this survey will be presented along with some valuable conclusions.

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## Test of Faith: how it can be presented to 6<sup>th</sup> formers

Laurence Hawkins MSc

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and a Reader in the Anglican Church  
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The Test of Faith series is an excellent resource which can be readily adapted for sixth form students in secondary schools. I will outline my approach to adapting the Test of Faith materials to suit various sixth form audiences and situations, in a variety of schools.

For instance I have delivered Test of Faith seminars with groups of A level students who are studying Theology and/or the sciences. I have used it with assembled upper and lower sixth forms in their P.S.H.E. lessons and have led follow-up discussion sessions with students following the functional skills NOCN faith and religion courses. As an ex-Deputy Head and having worked in curriculum development; I am keen to build these sessions into the post 16 curriculum at strategic points when it corresponds to syllabus and coursework requirements. I am now working with some RC schools; planning their A level Theology, PSHE and NOCN faith & religion schemes of work.

In this short talk I will have advice on how to get invited to schools, how to adapt the Test of Faith materials, how to deliver them to various age groups, how to encourage the students to discuss, ask questions and think for themselves about the big issues raised by the course.

## Faith in action: engaging the Church in conservation

T. Haley Main – Education Coordinator, Audubon New York  
*National Audubon Society – New York State, USA*

The natural world is dying. However, as Christians, we are promised life and life abundant, and are called to choose life so that we and those after us may live. How, then, do we reconcile living and promoting abundant life in a world daily subjected to destruction, largely at the hands of humanity? The answer is found in the summation of our faith: loving God and loving our neighbours. This demands action, and the Church has been called and empowered to take such action, beginning with the natural world. When the Church actively connects with nature, worship is brought to fullness (loving God) and we bring life into a dying world, life that benefits everyone (loving our neighbour). Many successful models of these connections are found when faith and science groups join forces. For example, through TogetherGreen, a partnership between National Audubon Society (USA) and Toyota, I designed a project to allow people of faith (fellow congregants) and people of the environment (Audubon) to focus on a common goal: helping their local natural environment. Entitled "Faith in Action", this project has forged partnerships between faith and environmental groups to build and install bird boxes for local native species; joined with national Christian environmental organizations (including leading scientists) to pray for the world's ecosystems and lobby for greener standards from US political leaders; participated in Sunday school and pulpit messages on the subject of earthly stewardship; and sponsored outdoor activities and projects where church members learn more about their surrounding natural environment and work with green organizations to enhance and support these natural areas. As a result of these initiatives partnerships have been forged, increasing conservation impact; funds have been raised to support conservation; and perhaps even more important, there has been a strong sense of unity cultivated between faith and environmental audiences, two traditionally separate groups now working together- offering testimony to the power of choosing life.

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## Is Christianity historically retreating in a conflict with science?

Pablo de Felipe, PhD, *Adjunct Professor of Science and Faith*

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As early as 1860, T. H. Huxley already used the metaphor of not just science and Christianity being in conflict, but also a historical narrative of faith being “forced to retire from the lists, bleeding and crushed if not annihilated; scotched, if not slain”.

This has become the standard interpretation of the historical relations between science and Christian faith since the late 19<sup>th</sup> century. With the rise of the history of science in the 20<sup>th</sup> century as an academic discipline, and the recent surge on historical studies on the relations between science and Christianity in the last decades, I wonder if this is an adequate portrait of the general historical trend.

This warfare metaphor has been established by tracing a continuous historical line using mainly four key examples: the defence of a flat earth by Lactantius, Cosmas Indicopleustes and other ancient Christians, the denial of the existence of the antipodes by Augustine and the medieval church, the trial of Galileo by the Inquisition in the 17<sup>th</sup> century and the rejection of evolution by creationists/ID since the 19<sup>th</sup> century. The conclusion is that Christians have always been in the wrong side of the argument, and therefore, “forced to retire”. Here I will argue that this is a rhetorical strategy, which manipulates the history of science by ignoring that in all those debates there were Christians on both sides of the argument. In addition, it can be seen that, in some of these cases, there were sound scientific reasons for the rejection of the innovative scientific ideas that were presented, at least initially (in particular regarding the existence of antipodes and antipodeans, and the heliocentric cosmology).

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## Ethics in medical research – a Christian perspective

Dr. Clare Foster, Research Facilitator

*West Anglia Comprehensive Local Research Network,  
Addenbrooke's Hospital, Cambridge*

'An ethics committee is a group of people that tells you that you can't do research'

'Why do I need ethical approval for my research ? All I want to do is stick needles into people - and they'll be unconscious anyway...'

'I don't need my study to be peer reviewed. My boy, did you not hear me before ? I'm the world leading expert in my field...I have no peers.'

There are enormous amounts of paperwork that need to be completed before medical studies are allowed to proceed. Why is it so important that these studies gain ethical approval ? This talk will cover a brief history of ethics (and the lack of ethics) in medical research, from Hippocrates, via the atrocities of World War 2, to the Alder Hey organs scandal. I will consider ethical principles that should be adhered to in clinical research: confidentiality, veracity, beneficence, non-maleficence, justice, fidelity and autonomy. How do these principles fit into a Christian ethical framework? As Christians, are there any other factors that we should contemplate when considering medical research?

### Where time and eternity meet

Daniel Button, Head of Theology

*Redcliffe College, Gloucester  
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Is God in time or outside of time? Or is time actually in God? Is eternity limitless time, or the absence of time? Did God create time, or does time simply exist as a contingent property of God's existence? How can a timeless being exist in time? Questions of time and eternity comprise some of the most complex and intractable problems within philosophy, theology, and science, all the more so when trying to combine the insights of each discipline in an integrated discussion. How can the physical, measured time of science, (with innumerable relative inertial reference frames) relate to the linear time of human experience, and what does it mean for theology to posit an 'end of the age' and a future eternity in a new creation?

The way we answer such metaphysical questions highlights fundamental differences not only between science and theology, but between major worldview systems and religions in use today. Is there any hope of finding resolution? What is the way forward, and where does one even begin?

This presentation will suggest a way of framing the options in an organisational matrix, such that discussion can take place within mutually agreed parameters and with clearly defined objectives and terminology. Insights of each discipline may then enlarge or constrain the arguments without trivializing alternative perspectives.

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## **Sustainability in crisis: some Christian reflections**

Dr John Lockwood, Retired Senior Lecturer

*School of Geography, University of Leeds  
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The Sustainability in Crisis Conference held at Murray Edwards College, Cambridge, in September 2011 marked a key stage in the growing understanding of the environmental problems facing humanity, and the Christian responses. A major problem is that the nature of the 'crisis' is not simple. Some aspects are global, while others are local but can aggregate to a global scale. Others are concerned with the exhaustion of resources or extinctions. In the second case there is no prospect of reversal. The various types of 'Crisis' are classified and briefly described, together with suggested Christian responses. Most pollutants released into the atmosphere have very short residence times, often just a few days. Clouds or rainfall washes out the common ones, such as sulphur dioxide, or the larger particles settle out rapidly. Such pollutants tend to be local in effect. In contrast the lifetime of anthropogenic carbon dioxide is controlled by the carbon cycle and may be considered as 300 years, plus 25% that lasts for a very long time. The long life of the anthropogenic carbon dioxide released into the atmosphere makes stabilization difficult, and at present nearly impossible in the short term, for levels below the present atmospheric concentration. Atmospheric carbon dioxide concentrations are now at their highest levels for at least 600,000 years. The consequences of this are considered together with the Christian responses.

## **Origins of faith: evolutionary, neurological, personal, divine?**

Mr Michael J. Newton, Doctoral Student, Integrative Neuroscience

*Cardiff University, School of Biosciences, Museum Avenue, CF10 3AT, Wales,  
NewtonMJ@cardiff.ac.uk*

At least four categories of response can be given to the question "what are the origins of faith?" Cognitive psychologists may argue that faith has its origins in our evolutionary past; "Neurotheologians" trumpet that faith is essentially nothing but a neurological quirk; many people of faith treasure a personal narrative by which they came to faith; and yet, faith can be considered a gift of God. These responses may each be deployed by one side or another in polarized debates of Science vs. Religion, but following a brief overview of each category, I shall argue that, when both science and Christian theology are done well, these multiple narratives can operate in partnership to form an enriched whole: Natural or mechanistic explanations of the origins of faith do not in principle exclude God's purpose lying behind events, whether they be evolutionary, neurological or personal, all can in principle be regarded as the extraordinary means by which the divine intention has been fulfilled. In other words, we could answer the question in this talk's title with: "Yes".

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## All in the mind? The reality of conceptual thought

Rev Dr Philip H Bligh, Previously Head of Applied Physics

*Kingston Polytechnic/University, Rector of Holy Cross Anglican Church, Canberra, Australia, now in the Diocese of Norwich, Member of Christians in Science and the Science and Religion Forum  
philipbligh752@btinternet.com*

Scientific reductionism challenges the value of metaphysical ideas and concepts. Its materialistic outlook sees science as based on sense data and tangible concepts such as brain, body, force and energy rather than on mind, spirit, soul or self. Much of this 'parting of the ways' find roots in Cartesian dualism and the unbridgeable gulf between *res extensa* - the substrate of science - and *res cogitans* the ephemeral nature of the spiritual world. This paper argues that recent research and developments in understanding are challenging this hard and fast separation into two immiscible 'Magisteria' (Gould). Much of the problem has to do with certain attempts to use science to fortify arguments against Christian belief. These tend to drive a wedge between the two. The paper seeks to show how metaphysical/spiritual concepts can play a part in the scientific understanding of nature and of the nature of reality and help form a link between epistemology and cosmology.

## Science, theology and beauty

Dr Ruth M. Bancewicz, Research Associate & Test of FAITH Project Leader  
*The Faraday Institute for Science & Religion,  
St Edmund's College, Cambridge, CB3 0BN rmb67@cam.ac.uk*

In recent decades the dialogue between science and religion has often focused on refuting conflict myths and tackling difficult issues. Responding to arguments is very important, but it's essential that we also start conversations on our own terms. Every scientist-believer has something positive to say about faith in the lab, and beauty is one of the common themes in this conversation.

It appears to be a universal experience for a scientist to find their experimental system and the insights they receive from it beautiful. Long hours of observation and careful scrutiny of data reveal a particular kind of beauty. This scientific beauty is more easily appreciated by the specialist, but is increasingly communicated through scientific art and popular science writing. Encountering beauty in nature can be a spiritual experience for some, and often brings Christians closer to God. So how can a Christian in the sciences interpret their experience of beauty in the lab?

Current popular expressions of natural theology focus on the evidence for God, but there is a rich Christian tradition of experiencing something of God in his works. The early Christian theologians deliberately spent time delighting in the beauty of creation, and this habit was continued throughout the Middle Ages. The Catholic Church has stewarded this area of theology and spiritual practice particularly well, and Protestant theologians have more recently begun to write on the subject. This seminar will draw on the above themes in science and theology and ask what we can say of substance on the subject of beauty.

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## What the Bible says about the Created Order – a basic introduction

Dr Hugh Reynolds, Visiting Research Scientist

*Institute of Psychiatry, King's College London  
HLReynolds2000@googlemail.com*

In the science-faith debate the assumptions underpinning our use of the Bible tend to be taken for granted, but there can be major unstated differences of approach and understanding. These lie behind some of the disagreements and tensions between Christians. The aim in this presentation is to give a basic account of what the Bible is and how it is to be interpreted, according to mainstream evangelical teaching. What scripture is will be covered briefly: for us to know about God accurately it has to be he who communicates with us – indeed we cannot know what he requires of us unless he tells us. Jesus said that the scriptures testify of him. God wants us to understand him, and to know and love him, through Jesus Christ, being reconciled to him through his blood shed on the cross. The different types of writing in scripture need to be interpreted on their own terms, informed where appropriate by other parts of scripture, and not fitted into man-made schemes (ancient or modern) that may look reasonable but are derived from outside scripture. The simple literal meaning is taken but in the context and for the purpose that the writer had in mind (what Packer calls literal but not literalistic). Creation of all things by God is simply stated in the first few words of Genesis but not explained, but its implications are found throughout the Bible and are remarkably wide-ranging. We find that God (in Christ) upholds and sustains all things moment by moment, and is far from being an absentee owner that set the universe going and sits back. The created order (the material universe), although basically just “stuff”, is bound up with God’s wisdom and praise, purposes and character. Further reading will be suggested.

### The origin of life

Dr Jonathan Foster, Postdoctoral Researcher

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Whilst a number of theories have been put forward to explain the origin of life on earth, none have achieved widespread acceptance in the same way as evolution or big bang theory. Explaining the transformation of inanimate chemicals into complex, responsive and self-sustaining organisms through natural means certainly poses some challenging questions. This ‘gap’ in our scientific understanding leaves open a range of different theological responses. However, developments in systems chemistry and synthetic biology mean open philosophical speculation may soon become constrained by evidence. How would our understanding of God as creator be affected if we are able to create life in a test-tube? How would our understanding of Jesus as saviour be affected if life turned out to be ubiquitous in the universe? I will argue that as Christians we must develop a coherent theology which can meet such developments in our scientific understanding as well as providing guidance on ethical issues which arise.

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## ***Archaeopteryx* as an origin's controversy icon**

Mr Perry Enever, Associate Lecturer

*The Open University, The OU in the South East, St.James's House, 150 London Road, East Grinstead, RH19 1HG  
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In the 150 years since it was first discovered, *Archaeopteryx lithographica* has been a controversial fossil species, displaying both bird-like and 'reptilian' features. It played an important part in the battle between Richard Owen and T.H. Huxley and has been a central piece of evidence in support of evolution ever since. Such significance has been compounded by its place in the public conscience.

Fossils play an important role in understanding the principle and the pattern of evolution as they can help people to see and understand macroevolution. *Archaeopteryx* does this very effectively, since non specialists have a good idea of what modern reptiles and birds look like.

In the last twenty years the general public have been made increasingly aware that current evidence implies that *Archaeopteryx* and all birds are a specialised form of dinosaur. This intriguing idea merely adds to its status.

Despite all of this, much of the historical debate and discussion about *Archaeopteryx* has furnished Young Earth Creationists and Intelligent Designers with useful facts to cast doubt on it as a 'transitional form' denying it as indicating kind of evolutionary pathway leading from dinosaurs and birds. In this context *Archaeopteryx* is viewed as an icon for anti-evolutionists too. This talk will take up these issues and explain why *Archaeopteryx* will continue to be a complex player in the origins debate.

## **Disputing evolution encourages environmental neglect**

R.J. Berry, Professor of Genetics

*Department of Genetics, Evolution and Environment,  
University College London, London WC1E 6BT, UK  
rjberry@ucl.ac.uk*

Christian debates about evolution rumble on interminably, despite virtual unanimity in the scientific community about the main features of evolutionary change and their mechanism(s). Such debates almost certainly alienate outsiders – as Augustine pointed out sixteen centuries ago. But much worse is the possibility that they spawn an inadequate doctrine of creation and distract attention from the biblical mandate of creation care. If so, it is crucially important that we follow Paul's injunction and "instruct certain people to give up... devoting themselves to interminable myths and genealogies." Has the time come to boldly go and take more seriously the admonition of Charles Darwin in the *Origin of Species* (quoting Francis Bacon) that "no-one out of a weak conceit of sobriety should think or maintain that he can search too far or be too well studied in the book of God's word or in the book of God's words [divinity or science], but that all should endeavour an endless proficiency in both"?

**Not a tame lion: evolutionary evil and the openness of God**

Miss Bethany Sollereder, PhD Candidate

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"I cannot persuade myself," wrote Charles Darwin "that a beneficent and omnipotent God would have designedly created the Ichneumonidae with the express intention of their feeding within the living bodies of Caterpillars." Darwin's question strikes at the heart of natural theology. If God created the world, then what sort of God is it that created this world of violence, suffering, and ubiquitous death? This talk will investigate how Open Theism can contribute to the discussion of evolutionary evil by extending a version of the free-will defence to the natural world. In openness theology, God's action in the world is not expressed through the imposition of intended evolutionary outcomes, nor only through a simple and passive co-suffering with creation, but rather through a risk-filled love relationship. This is a relationship that prizes the freedom of the creation to turn life into a tragedy or a triumph and the priority of God to respond creatively and actively to life's decisions.

### **A trinitarian Biblical scientifically-integrated Gospel**

Rev Ian Elliott Benson, Coordinator

*The Missionary Training Service, 5/40 Buckingham Gate, London SW1E 6BS  
coord@missionarytraining.org*

There is a strong need to present a Gospel message that is integrated with current scientific understanding so that Western people can see that the Christian faith is believable. Essential to this is knowing God as Father, Son and Holy Spirit, and keeping faithful to the Bible.

In synthesis: God our Father of absolute goodness creates the universe and, through His sacrificial Love fully incarnate in our Lord Jesus Christ, and by His lifegiving Holy Spirit, brings to birth His family who freely turn to Him to worship and serve Him for ever. The absolute goodness of God requires that this universe is the best that it can be, consistent with this purpose. The granting of free-will to creation leads to suffering and disobedience. This dissonance is harmonised and the gap is bridged by God's love incarnate in our Lord Jesus Christ, by His death and resurrection. The use of the Greek word "dei" – "it is necessary" in the New Testament, where suffering is obligatory for the Lord Jesus - and also for His followers who share in and alleviate the suffering of the world. The necessity of revival – the power of the Holy Spirit energising God's people. Genesis 1-3 as overview of the human condition. We have a matrix, a metanarrative, to relate to God serving Him in the world, following the way of Jesus in serving others with the help and power of the Holy Spirit. Human beings, in responding to the love of Christ, are raised from the status of perishable animals to become participators in the imperishable life of God. Jesus calls us to become children of God and part of His new society, the Church.

### **Offensive apologetics: evangelism**

*Mr Daniel Holt, First Year Physics at the University of Birmingham*

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The wonderful thing about CIS are all these minds gathering together to solve the conflicts between faith and science. Are we here just to defend our faith with apologetics? Can we go further, more on the offensive, explaining the gospel to those who don't understand its relevance? We are called to working in the scientific community, we have been given a passion for understanding creation. Currently we're in a position where a lot of people in this country are surprised we exist, there is an expectation from some very influential people that Christianity and Science cannot exist side by side. That is the importance of this conference, to strengthen each other and discuss our beliefs in order to defend them. However we are in a position where we can go so much further than this, much further than answering the arguments of Richard Dawkins. What I will be talking about is taking the message of Jesus and the good news of who God is to the unreached. Those we can reach are not isolated by any geographical difficulty, but by misunderstanding and misconceptions. In the sphere of science we are the church, and we are the minority, which is a very exciting prospect!

### Impact of ICTs

*Sara Lumbreras, Assistant Researcher*

I.I.T. (Institute for Research in Technology) Comillas Pontifical University  
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Impact of the information and communication technologies on human cognitive processes. Implications for human nature. This work is part of Human Nature 2.0, a project currently being carried out by Comillas Pontifical University in Madrid which aims to study thoroughly the contemporary philosophical debate about human nature and to constructively participate in it.

The impact of ICTs on human nature from the perspective of a poetic human being are explored. The starting point is the seemingly constantly growing realm of activities that can be achieved by machines, therefore facilitating our accomplishment of increasingly complex tasks. However, they might be having other effects. For instance, according to Parker and others, the ability to memorize could have been already reduced in only a couple of generations. It is important to note that biological and external memory are not equivalent: only biological memory is apt for creative activities and critical thought, as well as a support for individual and cultural identity. Valkenburg and Christakis prove that the distraction patterns in multimedia processing challenge reflection and increase impulsivity. Moreover, independent solution problem ability could be already damaged by the immediate availability of answers online. Are we creating a “just google it” generation, with a shorter attention span and less able of critical and creative thought? The consequences for human nature will be discussed. Are ICTs somehow reducing the scope of what used to be exclusively human, or pointing to what is essential in human nature?

### **Marine conservation, poverty alleviation, and blessing the nations: a new project at A Rocha Kenya**

*Dr Robert D Sluka, Benjamin Cowburn, and Colin Jackson*

A Rocha Kenya  
Mwamba Field Study Centre, PO Box 383, Watamu, 80202, Kenya  
bobsluka@hotmail.com

In the past decades there has been a steady increase in the number of Christians and Christian organisations involved in conservation. However, very few have focused on marine conservation, despite the ocean covering 71% of our planet's surface. A Rocha is an international Christian conservation organisation which has national programmes in 20 countries. We have recently begun a focused marine research and conservation program at our field study centre in Kenya. The project focuses on Watamu Marine Park, one of the oldest marine protected areas in the world. Marine protected areas are portions of the ocean which are protected from some or all forms of extractive activities. Recent research has shown that marine protected areas are one of the few conservation measures which have been proven to positively impact both biodiversity conservation and poverty alleviation. Additionally, the primary beneficiaries of the poverty alleviation where we work are predominantly Muslim. This presents an opportunity to bring blessing in the name of Jesus in a way that is relevant to these fishing communities. This poster presents background on the project and the park, our research aims, some recent results, and opportunities to get involved. In addition, a major part of this project is to develop theologically - and ethically - based resources related to marine conservation and the ocean in general. Several of these products are described.

### **The search for speech recognition - genes vs technology**

*Dr Roger Tucker, Founder & MD*

Sonocent Ltd  
Beracah House, Gloucester Rd, Chepstow, NP16 7DH  
roger@sonocent.com

Technology research and evolution can both be viewed as search processes exploring a space of possible solutions. Although the spaces they explore are quite different, and the search methodologies even more so, in the case of speech recognition the two searches ideally produce equivalent functionality, so the search processes are to some degree comparable.

Although the evolution of spoken language is not well understood, it is a capability associated with homo sapiens, the final stage of development probably taking well under 100,000 years/ 5,000 generations. The technological search for speech recognition emulating this human capability has been intense. The two decades of research across academia and industry up to the late '80s developed the core knowledge and techniques and produced the first deployments. Their capability at this point was broadly comparable to the likely capability of homo sapiens' nearest predecessors. Since then a large global research community has worked together, monitored by the US NIST annual benchmark competitions, to arrive at today's still rather limited capability.

Having been part of that history, it is hard not to ask difficult questions as to why the global technology community has not been able to find a satisfactory solution, whereas the genetic search process was able to put together all the component parts so effectively in less than 5,000 generations.

### **Additional Poster Abstracts**

Posters will also be presented by those listed below, whose abstracts appear in the short talks session, namely:

Malcolm Buchanan  
Perry Enever  
John Lockwood  
Hugh Reynolds

### God, brain and evolution

*Eric David Zandrino Baker. MD Psychiatrist.*

ICMDA, CAPS (USA), Public Hospital L. Pasteur

To look to the very beginning of the Human Brain we have to travel to the dark nights of time when reptiles dominated the earth. After their massive extinction, in the Mesozoic era, mammals were the masters of the earth. The brain evolved progressively and mammals developed a Neocortex. Almost two and a half million years ago we found the first Homo in Africa, the Homo Habilis, with a brain very similar to the human brain. Then came the Homo Erectus and later the Homo Sapiens. One of the latest stages of development of the human brain involved a neurotransmitter: the Dopamine. Fred Previc says in - *The Dopaminergic Mind in Human Evolution and History* (2009) – "...the emergence of intellectually modern humans around 80.000 years ago arguably represented the beginning of what I will refer to as the "dopaminergic mind". On the other hand in the Bible in Genesis chapter two we read that God created the human being and we find the account of an anthropomorphic figure made of dust and water. At this point God makes use of the Breath of Life, His Spirit, the Pnuma and gives this very valuable gift to Man. This is a powerful image of creation. Teilhard de Chardin, the anthropologist and Jesuit Priest, looking into the relevance of Evolution/ God's creation, says in - *Le Groupe Zoologique Humain* ( 1956) - that we need some criteria to measure the evolution and level of complexity of living beings: " the level of vitality" of the species. He found that the major level of vitality that we know in nature is in the development of the Central Nervous System and its vast complexity. The human being is by far, the owner of that privilege. Finally, in this abstract, I want to mention Eric R. Kandel (Nobel Prize). In his article -*A New Intellectual Framework for Psychiatry* (1998) he says – "All mental process, even the most complex psychological process, derives from operations of the brain". Since the relevance of neuroscience is enormous and its influence in vast fields of science and culture is progressive I would like to raise some questions to think about and to debate: Does the Spirit of God exist in us or is it just a metaphor?, Is our spirit just brain functions that derive from the process of evolution?, And, could future discoveries of neuroscience deny the presence of our soul?

## Biographies of Invited Speakers (alphabetical)

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### Denis Alexander

Denis Alexander is Director of the Faraday Institute for Science and Religion at St. Edmunds College, Cambridge, where he is a fellow. He was previously an open scholar at Oxford University where he read biochemistry before carrying out research for a PhD in neurochemistry at the Institute of Psychiatry, University of London. Following this he spent 15 years in academic positions in the Middle East, latterly (1981-86) as Associate Professor of Biochemistry at the American University of Beirut, Lebanon, where he helped to establish the National Unit of Human Genetics. Upon his return to the UK he worked at the Imperial Cancer Research Fund (now Cancer Research UK) and since 1989 at The Babraham Institute where he was Chair of the Molecular Immunology Programme and Head of the Laboratory of Lymphocyte Signalling and Development, before leaving in 2008. Dr Alexander is Editor of the journal *Science & Christian Belief* and contributes papers as part of the Cambridge Papers writing group. He is the author of the critically acclaimed book *Rebuilding the Matrix - Science and Faith in the 21st Century* (Oxford: Lion, 2001) which provides a general overview of the science-religion debate. More recently he has edited *Can We Know Anything? Science, Faith and Postmodernity* (Leicester: Apollos, 2005), co-authored (with Bob White FRS) *Beyond Belief - Science, Faith and Ethical Challenges* (Oxford: Lion, 2004), published *Creation or Evolution - Do We Have to Choose?* (Oxford: Monarch, 2008, 4th printing 2010), and co-edited with Ronald Numbers *Biology and Ideology - From Descartes to Dawkins* (Chicago University Press, 2010). His most recent book, *The Language of Genetics - an Introduction* [Templeton Foundation Press] was published in Spring 2011. Dr Alexander will be giving the Gifford Lectures at St. Andrew's University in December 2012.



### Professor John Hedley Brooke

From 1969-1999 John Hedley Brooke taught at Lancaster University, becoming a member of the International Academy of the History of Science in 1993. In 1995, with Professor Geoffrey Cantor, he gave the Gifford Lectures at Glasgow University. From 1999 to 2006, he was the first Andreas Idreos Professor of Science & Religion at Oxford University, Director of the Ian Ramsey Centre and Fellow of Harris Manchester College. Following retirement, he spent time as a "Distinguished Fellow" at the Institute of Advanced Study, University of Durham (2007). He has lectured worldwide and in November 2001 gave the "Distinguished Lecture" of the History of Science Society. From 2000 to 2003 he directed the European Science Foundation's Network on "Science and Human Values". A former Editor of the *British Journal for the History of Science*, he has been President of the British Society for the History of Science, President of the Historical Section of the British Science Association, President of the UK Forum for Science & Religion and of the International Society for Science and Religion. Among his books are *Science and Religion: Some Historical Perspectives* (Cambridge 1991), *Thinking About Matter* (Ashgate, 1995); and (with Geoffrey Cantor) *Reconstructing Nature: The Engagement of Science & Religion* (Edinburgh 1998). He is co-editor of *Science in Theistic Contexts* (Chicago 2001), *Heterodoxy in Early Modern Science and Religion* (Oxford 2005), and *Religious Values and the Rise of Science in Europe* (Istanbul 2005). His most recent book, co-edited with Ronald Numbers is *Science & Religion around the World* (New York 2011).



## Biographies of Invited Speakers (alphabetical)

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### Prof John Bryant

John obtained a 1<sup>st</sup> class degree and completed a PhD in Plant Biochemistry at the University of Cambridge. He did post-doctoral research at the University of East Anglia and then held academic posts at the University of Nottingham and University College, Cardiff. In 1985 he was appointed to the newly established Chair in Cell and Molecular Biology at the University of Exeter. He was Head of Biological Sciences from 1986-1991 and Director of Research/Deputy Head of Biological Sciences from 1991-1998. Since 2002 he has been Professor Emeritus. He was also Visiting Professor of Molecular Biology at West Virginia State University from 1999-2007.



In addition to running an active research group, John has taught Biochemistry and Molecular Biology at all levels from first-year undergraduate to MSc. He also introduced one of the first Bioethics courses for Biology students in a UK university. Since 2002, John has been **co-Chair of the HE Academy Special Interest Group on Teaching Ethics to Bioscience Students**. He has run workshops for Bioscience academics on Teaching Ethics to Bioscience Students in the UK, in Ireland, in Belgium and in the USA.

John was **Chair of Christians in Science**, 2001-2007 and **President of the Society for Experimental Biology**, 2003-2005. He was elected to the International Society for Science and Religion; in 2006 and 2008 he was nominated for the Bioscience Federation award for Science Communication. He speaks frequently, in churches, to church-associated groups, to student groups and to secular groups on issues in bioethics and in the science-religion debate. He also writes on bioethics, both in a specifically Christian context and for 'secular' readerships.

### Dr Allan Chapman

Dr Allan Chapman is a historian of science at Oxford University. His main areas of research lie in the history of astronomy and of medicine, along with an established interest in the history of science and its relation with Christianity. In addition to teaching in Oxford, he lectures across the British Isles and in the United States, and broadcasts for television and radio: his *Gods in the Sky* (Channel 4, 2003), for example, argued that modern science could only have developed out of monotheistic cultures. Currently he has in press *Slaying the Dragons: Destroying Myths in the History of Science and Christianity* (Lion Hudson, early 2013).



### Peter G H Clarke

After a career in neuroscience, Peter Clarke retired this year from his position as Associate Professor at the Department of Cell Biology and Morphology, University of Lausanne, Switzerland. Following a first degree in Engineering Science (1968) at the University of Oxford, he did a PhD with philosopher-neurobiologist Donald MacKay at the University of Keele (UK), then postdoctoral jobs in Oxford and St. Louis



## Biographies of Invited Speakers (alphabetical)

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(USA), before moving to Lausanne in 1977. His research focused on neuronal death - occurring naturally in development, or pathologically in cerebral ischemia and hypoxia, and he received two international prizes for it. Since retirement, his main project is to write about the philosophical and theological implications of neuroscience.

Peter is Associate Editor of the journal *Science and Christian Belief* and lectures widely on science and religion, mainly on questions relating to the brain. He is very active promoting science-religion dialogue in the French-speaking world and is a founding member of the Réseau des Scientifiques Evangéliques. He is a member of an evangelical church in Lausanne.

### Mike Clifford

Dr Mike Clifford is an Associate Professor in the Faculty of Engineering at the University of Nottingham and a volunteer with Tearfund, a Christian international relief and development charity. His research interests are in sustainable and appropriate technologies, including the development and dissemination of improved wood-burning cooking stoves.



In 2009, he was voted "engineering lecturer of the year" by the Higher Education Academy for his innovative teaching methods involving costume, drama, poetry and storytelling.

### Alasdair Coles

Rev Dr Alasdair Coles is a lecturer in neuroimmunology (study of the nervous and immune system together) at Cambridge University and an honorary consultant neurologist to Addenbrooke's and Hinchingsbrooke Hospitals.

He is involved in research into new treatments for multiple sclerosis.

His research interest, in the neurological basis for religious experience, came from managing a small cohort of patients with spiritual experiences due to temporal lobe epilepsy (seizures in the parts of the brain that are involved in speech, memory and hearing). He is now running a project, funded by the Templeton Foundation, on the spirituality of people with neurological disease.

Alasdair was ordained in the Church of England in 2008 and is now a chaplain to the staff at Addenbrooke's Hospital and assistant minister at a church in Cambridge.



## Biographies of Invited Speakers (alphabetical)

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### Simon Conway Morris

Simon Conway Morris is a Professor in the University of Cambridge and a Fellow of St John's College. He is well-known for his work on the Burgess Shale and the Cambrian "explosion", but in recent years his interests have shifted to some wider issues in evolution, notable convergence. The former topic is addressed in *The Crucible of Creation* (Oxford), whilst the role of convergence is reviewed in *Life's Solution* (Cambridge).



He delivered the Royal Institute Christmas Lectures in 1996, and in 1990 was elected to the Royal Society. When undisturbed he can usually be found reading G.K Chesterton or something by the Inklings, with a glass of wine within easy reach.

### Peter Harris

Peter Harris co-founded A Rocha [www.arocha.org](http://www.arocha.org) in 1983 when he moved with his wife Miranda and family from an Anglican parish in Liverpool to establish a field study centre and bird observatory on the Alvor estuary in Portugal. In 1995 the work was given over to national leadership and he moved to France where together with national colleagues he oversaw the establishment of two other centres while travelling to resource the growing global movement of Christians active in nature conservation. A Rocha field projects are now operational in nineteen countries worldwide. The story is told in Peter's books *Under the Bright Wings* (Regent College Publishing, 2000), and *Kingfisher's Fire* (Monarch, 2008)



### Katharine Hayhoe

Katharine Hayhoe is an atmospheric scientist, associate professor and director of the Climate Science Center at Texas Tech University, and founder of a scientific consulting company, ATMOS Research. She has a B.Sc. in physics from the University of Toronto and an M.S. and Ph.D. in atmospheric science from the University of Illinois.



Katharine is an expert on high-resolution climate projections and regional climate impacts. She has led assessments for a number of U.S. regions and is currently serving as a lead author for the upcoming 2013 U.S. National Climate Assessment. Her work has been used to develop state and federal policies, presented before the U.S. Congress, and highlighted by media outlets ranging from *Scientific American* to *Sports Illustrated*.

Together with her husband Andrew Farley, a pastor and author, she wrote "A Climate for Change: Global Warming Facts for Faith-Based Decisions," a book that untangles the complex science and tackles many long-held misconceptions about global warming. Her work as a climate change evangelist has been featured in a number of venues, from PBS documentaries to *Sojourners Magazine*. She frequently speaks and writes on communicating the reality of climate change to faith-based communities.

## Biographies of Invited Speakers (alphabetical)

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### Revd Dr Rodney Holder

The Revd Dr Rodney Holder is Course Director of the Faraday Institute for Science and Religion, St Edmund's College, Cambridge, and was formerly Priest in Charge of the Parish of the Claydons, Diocese of Oxford. Dr Holder read mathematics at Trinity College, Cambridge, and researched for a D.Phil. in astrophysics at Christ Church, Oxford. He remained at Oxford for a further two years as a post-doctoral fellow in the Department of Astrophysics researching accretion of intergalactic gas by the galaxy. After 14 years working for UK Ministry of Defence clients as an operational research consultant with EDS (formerly Scicon), he returned to Oxford, and took a first class degree in theology in 1996. Completing his ministerial training the following year, Dr. Holder then worked for four years as a curate in South Warwickshire, followed by a seven month sabbatical period as chaplain of the English Church in Heidelberg, before appointment to the Claydons in 2002.



Dr Holder explored ways in which science and faith may complement each other in *Nothing But Atoms and Molecules?* (Monarch 1993, reprinted, Faraday Institute, 2008). In his second book, *God, the Multiverse, and Everything* (Ashgate 2004), Dr Holder examined the fine-tunings of natural law that were necessary for life to evolve in our universe and used Bayes' theorem, a classic tool for determining probability, to assess their metaphysical significance. Dr Holder's most recent book, *The Heavens Declare* (Templeton Press, May 2012), seeks to reinstate the enterprise of natural theology in dialogue with its severest opponent, Karl Barth, and a group of significant theologians who have reacted to Barth's critique in various ways. His 1998 paper on miracles won a Templeton Foundation Prize as an exemplary paper in humility theology. Dr Holder is Reviews Editor of *Science and Christian Belief* and is on the national committee of Christians in Science. He is a member of the International Society for Science and Religion, the Society of Ordained Scientists, and the Science and Religion Forum, and is a Bye Fellow of St Edmund's College.

Photo: Nigel Bovey/The War Cry

### Elaine Howard Ecklund

Elaine Howard Ecklund's research focuses on the myriad ways science and religion (together and alone) intersect with other life spheres, such as public life, immigration, and gender. The author of two books with Oxford University Press and over thirty research articles, she has received grants and awards from the *US National Science Foundation*, *Russell Sage Foundation*, and *John Templeton Foundation*. Her latest book, *Science Vs. Religion: What Scientists Really Think* was chosen by *Times Higher Education* as book of the week and named a book of the year on religion by the *Huffington Post*.



Her research has been covered in national and international news media, including *USA Today*, *Nature*, and *Xinhua News*. Ecklund is an associate professor of sociology at Rice University, where she is also Director of Graduate Studies, Director of the Religion and Public Life Program and a Rice Scholar at the Baker Institute for Public Policy. She received a PhD in 2004 from Cornell University, where she was the recipient of the Class of 2004 Graduate Student Baccalaureate Award for Academic Excellence and Community Service. In 2011 Ecklund was named among the top five percent of junior faculty teachers at Rice

## Biographies of Invited Speakers (alphabetical)

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University. Ecklund's next research project is a three-year study that will examine how scientists in six different nations understand religion and ethics.

### Professor Sir Colin Humphreys, CBE FEng FRS

Colin Humphreys is Professor of Materials Science and Director of Research in the University of Cambridge and a Fellow of Selwyn College, Cambridge. He is a Fellow of the Royal Society and a Fellow of the Royal Academy of Engineering. He founded and directs the Cambridge Centre for Gallium Nitride. This Centre is developing energy-efficient lighting which is so efficient it will enable the UK to close (or not build) eight power stations. A light bulb will also last for 60 years of typical use! He is also researching a new way to purify water in the developing (and developed) world, which will save millions of lives, and to kill hospital superbugs. He founded and directs the Cambridge/Rolls-Royce Centre for Aerospace Materials, which is developing next generation materials for Rolls-Royce jet engines to make them more energy efficient. He is involved in the public understanding of science, and has given public lectures on science throughout the world. He frequently appears on TV, radio and in the national and international press. He has received many national and international medals for his research. He has been the President of the Institute of Materials, Minerals and Mining and the Master of the Armourers and Brasiers' Company in London. He is interested in dating and reconstructing ancient historical events, and he has written a book, *The Miracles of Exodus*, about the Exodus from Egypt. His latest book, *The Mystery of the Last Supper: Reconstructing the Final Days of Jesus*, was published by Cambridge University Press in April 2011. He was Knighted in the Queen's Birthday Honours in 2010 for services to science.



### D Gareth Jones

Gareth Jones is Director of the Bioethics Centre and Professor of Anatomy at the University of Otago, Dunedin, New Zealand, where he was Deputy Vice-Chancellor (Academic and International) from 2005-2009.

Recent books include *Clones: The Clowns of Technology?* (Paternoster, 2001), *Designers of the Future* (Monarch, 2005), and *Bioethics* (ATF Press, 2007). He is coauthor with Alastair Campbell and Grant Gillett of *Medical Ethics* (Oxford University Press, 4th edition, 2005), and is coauthor with Maja Whitaker of *Speaking for the Dead: The Human Body in Biology and Medicine* (Ashgate, 2nd edition, 2009). He is editor with Mary Byrne of *Stem Cell Research and Cloning* (ATF Press, 2004), and with John Elford of *A Tangled Web: Medicine and Theology in Dialogue* (Peter Lang, 2009), and *A Glass Darkly: Medicine and Theology in Further Dialogue* (Peter Lang, 2010).



### Edward J Larson

A prolific writer and public speaker, Larson is University Professor of History and holds the Darling Chair in Law at Pepperdine University. He is serving as a visiting professor of law at Stanford University in 2012 and was a visiting professor teaching American Constitutional Law at the University of



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Melbourne in 2011. Recipient of the 1998 Pulitzer Prize in History, Larson taught for twenty years at the University of Georgia before accepting his position at Pepperdine and continues to serve as a Senior Fellow at the University of Georgia's Institute of Higher Education.

The author of eight books and nearly one hundred published articles, Larson writes about issues of law, science, and politics from an historical perspective. His books include *A Magnificent Catastrophe: The Tumultuous Election of 1800, America's First Presidential Campaign* (2008), *Evolution: The Remarkable History of a Scientific Theory* (2004), *Evolution's Workshop: God and Science in the Galapagos Islands* (2001), *Sex, Race, and Science: Eugenics in the Deep South* (1995), *Trial and Error: The American Controversy Over Creation and Evolution* (1985, 1989, and 2002 expanded editions) and the Pulitzer Prize winning *Summer for the Gods: The Scopes Trial and America's Continuing Debate Over Science and Religion* (1997). His latest book, *An Empire of Ice: Scott, Shackleton, and the Heroic Age of Antarctic Science* (2011) was a finalist for the 2012 Hessel-Tiltman Prize in History. Larson's articles have appeared in such varied journals as *American History*, *Nature*, *Atlantic Monthly*, *Scientific American*, *Isis*, *The Nation*, *Wall Street Journal*, *Wilson Quarterly*, *The Georgia Review*, *Constitutional Commentary*, and *Virginia Law Review*.

Larson also lectures widely and participates in conferences and academic programs. He has delivered endowed or named addresses at dozens of colleges or universities, including Duke University, California Institute of Technology, Yale University, and Vanderbilt University. Larson was a resident scholar at the Rockefeller Foundation's Bellagio Study Center in 1996, delivered the Fulbright Program's John Adams Chair in American Studies for 2001; participated in the National Science Foundation's Antarctic Writers and Artists program in 2003-04; and received an honorary doctorate degree from Ohio State University in 2004. From 2006 to 2009, he was a panellist on the National Institutes of Health's Study Section for Ethical, Legal, and Social Issues of the Human Genome Project.

### Prof Alister McGrath

Alister McGrath is Professor of Theology, Ministry and Education at King's College London, having previously served as Professor of Historical Theology at Oxford University. McGrath studied chemistry at Oxford, and gained his D.Phil. in molecular biophysics under the supervision for Professor Sir George Radda. He then began the study of theology, and developed his interest in the relation of Christian theology and the natural sciences. McGrath has been a leading critic of the uses of science in the «New Atheism», and has written extensively on issues of science and faith. His most recent books include his 2009 Gifford Lectures at the University of Aberdeen, published as *A Fine Tuned Universe : The Quest for God in Science and Theology* (2009), and his 2009 Hulsean Lectures at the University of Cambridge, published as *Darwinism and the Divine : Evolutionary Thought and Natural Theology* (2011). He is currently working on a major new biography of C. S. Lewis, to be published in March 2013.



### Jonathan Moo

Jonathan Moo (PhD, University of Cambridge) is Assistant Professor of Biblical Studies at Whitworth University in Spokane, Washington. He holds graduate degrees in both Theology and Wildlife Ecology. His research and writing is



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focused in the New Testament, ancient Judaism and ecology and the Bible. His recent publications include a book on a first-century Jewish apocalypse (Creation, Nature and Hope in 4 Ezra [Vandenhoeck & Ruprecht, 2011]), an essay on salvation ('The Few who obtain Mercy: Soteriology in 4 Ezra' in This World and the World to Come: Soteriology in Early Judaism [T&T Clark, 2011]), an article on biblical hope and the environment ('Continuity, Discontinuity and Hope: The Contribution of New Testament Eschatology to a Distinctively Christian Environmental Ethos' [Tyndale Bulletin, 2010]) and an essay co-authored with Robert White ('Environmental Apocalypse and Christian Hope' [Ethics in Brief, 2011; Bioethics Research Notes, 2011]), with whom he is also writing a book tentatively entitled Radical Hope in an Age of Despair: The Gospel and the Future of Life on Earth. Moo is an associate of the Faraday Institute for Science and Religion, a member of the Society of Biblical Literature and a fellow of the Institute for Biblical Research. He was a Research Associate with Faraday and an Affiliated Lecturer in New Testament at Cambridge prior to taking up his current post. At Whitworth, he teaches New Testament, Greek, hermeneutics and environmental studies. Moo lives in Spokane with his wife Stacey and enjoys reading, hiking, backpacking, fly-fishing, snowshoeing and cross-country skiing.

### William T Newsome

Bill Newsome is an Investigator of the Howard Hughes Medical Institute and Professor of Neurobiology at the Stanford University School of Medicine. He received a B.S. degree, *summa cum laude*, in physics from Stetson University and a Ph.D. in biology from the California Institute of Technology. Dr. Newsome served on the faculty of the Department of Neurobiology and Behaviour at SUNY Stony Brook before moving to Stanford in 1988. Dr. Newsome is a leading investigator in the fields of visual and cognitive neuroscience. He has made fundamental contributions to our understanding of the neural mechanisms underlying visual perception and simple forms of decision making. Among his honours are the Rank Prize in Optoelectronics, the Spencer Award for highly original contributions to research in neurobiology, the Distinguished Scientific Contribution Award of the American Psychological Association, the Dan David Prize of Tel Aviv University, the Karl Spencer Lashley Award of the American Philosophical Society, and the Champalimaud Vision Award. He has given numerous distinguished lectureships, including the 13th Annual Marr Lecture at the University of Cambridge the 9th Annual Brenda Milner Lecture at McGill University, and most recently, the Evnin Lecture at Princeton University. He was elected to membership in the National Academy of Sciences in 2000, and to the American Philosophical Society in 2011.



### Joe Perry

Joe N. Perry worked for Rothamsted Research for thirty years, researching quantitative methods applied to ecology. From 1990 – 2006 he developed the SADIE system for measuring spatial pattern in ecology. From 1999 – 2005 he was jointly responsible for the design and analysis of the UK Farm Scale Evaluations of GM crops; during that time he also developed an interest in the ethics of genetic modification. He was awarded a DSc degree by the University of Reading in 1989 and in 1994 was appointed as Visiting Professor of Biometry at the University of Greenwich. In 2006 he retired from Rothamsted.



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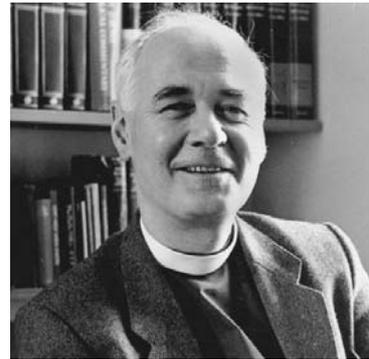
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Since then he has sat on the Genetically Modified Organisms Expert Panel of the European Food Safety Authority, of which he is now vice-chair. He also sits on the Scientific Advisory Committee of the Game & Wildlife Conservation Trust.

Joe was brought up in the Jewish faith, was agnostic from his teens and became a Christian in 1996 in his mid-forties. He has recently learnt the organ and plays every week in his local Anglican church in South Norfolk, which is a delight. He also likes gardening, singing, and playing cricket, but not usually together.

### Rev Dr John Polkinghorne

John Polkinghorne worked for twenty-five years in theoretical elementary particle physics, holding a chair at Cambridge University, 1968-79. After ordination as an Anglican priest and five years in parish ministry, he returned to Cambridge, eventually retiring in 1996 after seven years as President of Queens' College. He has served on a number of committees advising the United Kingdom Government on ethical issues relating to scientific advances, particularly in the area of human genetics. He is a Fellow of the Royal Society and was knighted in 1997. The author of many books on science and religion, including *Science and Christian Belief*, *Exploring Reality and Science*, and *Religion in Quest of Truth*, Polkinghorne was awarded the Templeton Prize in 2002.



### Peter Robinson

Peter Robinson is Professor of Computer Technology in the Computer Laboratory at the University of Cambridge, where he leads the Rainbow Research Group working on computer graphics and interaction.

Professor Robinson's research concerns problems at the boundary between people and computers. This involves investigating new technologies to enhance communication between computers and their users, and new applications to exploit these technologies. The main focus for this is human-computer interaction, where he has been leading work for over 20 years on the use of video and paper as part of the user interface. The idea is to develop augmented environments in which everyday objects acquire computational properties through user interfaces based on video projection and digital cameras. Recent work has included desk-size projected displays and tangible interfaces.



With rapid advances in key computing technologies and the heightened user expectation of computers, the development of socially and emotionally adept technologies is becoming a necessity. He has led investigations of the inference of people's mental states from facial expressions, vocal nuances, body posture and gesture, and other physiological signals, and also considered the expression of emotions by robots and cartoon avatars. He has also pursued a parallel line of research into inclusive user interfaces. Collaboration with the Engineering Design Centre has investigated questions of physical handicap, and research students have considered visual handicaps. This has broader applications for interaction with ubiquitous computers, where the input and output devices themselves impose limitations.

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### Robert (Bob) White

Professor Robert (Bob) White is Professor of Geophysics in the Department of Earth Sciences at Cambridge University and is Associate Director of the Faraday Institute for Science and Religion. He is a Fellow of both the Royal Society and the Geological Society. He is co-author of *Christianity, Climate Change and Sustainable Living* (SPCK, 2007) and editor of *Creation in Crisis* (SPCK 2009). His scientific work is published in over 300 papers and articles.



Bob's research interests centre on the volcanism that is produced when continents rift apart, and currently include the continental margins of northwestern Europe and the many active volcanoes in Iceland. During the summer months he is usually to be found driving a 4WD vehicle across lava flows in the remote interior of Iceland, installing and servicing seismometers (earthquake detectors). He leads a research group of a dozen PhD students and postdocs at Cambridge University and has in his career had the pleasure of supervising over 40 PhD students.

His scientific and Christian perspectives on the world come together in his interest and writing on climate change and sustainable living, and in natural disasters.

### Jennifer Wiseman

Dr. Jennifer Wiseman is an astronomer, author, and speaker. She studies star-forming regions of our galaxy using radio, optical, and infrared telescopes, and currently serves as the Senior Project Scientist for NASA's Hubble Space Telescope. She previously served as Chief of the Laboratory for Exoplanets and Stellar Astrophysics at NASA's Goddard Space Flight Center. She also directs the Dialogue on Science, Ethics, and Religion (DoSER) for the American Association for the Advancement of Science. She received her B.S. in physics from the Massachusetts Institute of Technology (MIT), discovering comet Wiseman-Skiff in 1987, and continued her studies at Harvard University where she earned a Ph.D. in astronomy in 1995. She continued her research as a Jansky Fellow at the National Radio Astronomy Observatory and as a Hubble Fellow at the Johns Hopkins University.



Dr. Wiseman also has an interest in public science policy and has served as a Congressional Science Fellow of the American Physical Society, working with the staff of the Science Committee of the U.S. House of Representatives. Dr. Wiseman is a Fellow and former Council President of the American Scientific Affiliation, a network of Christians in the Sciences. She has also served as an adult Sunday school teacher and lay speaker at her church. She has authored several essays addressing the relationship of astronomy, science, and Christian faith, and frequently gives talks to churches, schools, and campus groups on the excitement of scientific discovery and the complementarity of science and faith. She grew up on an Arkansas farm enjoying late night stargazing walks with her parents and pets.

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### John Wyatt

John Wyatt is Emeritus Professor of Neonatal Paediatrics at University College London. He worked for more than 25 years as an academic neonatologist at a major neonatal intensive care unit in London.

His main research work has been in the prevention and treatment of brain injury in newborn babies. He has a long-standing interest in contemporary ethical debates on advances in medical technology and the beginning and end of life, and has frequently engaged in public and media debates about controversial issues in medical ethics.



He is Chair of the Medical Study Group of the Christian Medical Fellowship and board member of the London Institute for Contemporary Christianity, the Kirby Laing Institute for Christian Ethics and Biocentre.

His book *Matters of Life and Death* is published by InterVarsity Press.