

Science, Religion and Big Questions

Does and should the advance of human like machines and AI change how we understand human significance?

Keynote Address by Professor Berry Billingsley:

Cosmic causality: How to evaluate our uniqueness in the Universe

A talk which focuses on causality and order in the Universe and how it relates to us as humans.

Learning objectives

- Raise questions about the relationships between science and religion
- Explore links between human uniqueness and uniqueness in nature
- Evaluate perspectives and models of personhood

Lecture Description: We tend to take our uniqueness for granted. You look around and you see lots of 'other' people and some of them have things in common with you – but none of them are you. This deserves a second look. The physics of the universe has been used to suggest that there are patterns underpinning everything we see and everything that happens in the Universe – and in that case we might suppose that we would eventually see repetition (the same mile of rocky coastline, the same path of a falling leaf). But in practice our experience of the world, and of each other, is that each person and each rock and each mile of coastline is unique. In this talk I will explain why this conundrum attracts my attention and what it suggests about the type of universe we live in. While holding onto this idea, I will look at some ways to think about who we are – individually and collectively. I will consider what consciousness seems to mean in practice and pragmatically and will offer some ideas about our relationships with the material and the intangible – and then I will wonder about what all of this means for science and for how we understand ourselves.

Speaker biography:

Berry Billingsley is Professor of Science Education at Canterbury Christ Church University. She is also the principal investigator of the LASAR (Learning about Science and Religion) Research Project. Berry's interests include young people's engagement in science, technology enhanced learning, science and technology via the media. Berry's first career was with the BBC where she produced and presented television and radio programmes including BBC World Service's 'Science in Action', BBC TV's 'Tomorrow's World' and BBC Education's 'Search out Science'. She then travelled to Melbourne, Australia, to become a senior project manager with the Department of Education. In this role she produced television and online resources to support science teaching in schools.

Workshops:

Can a robot be more than a robot?

A workshop focusing on emerging AI technologies and the impact they might have on our unique status as humans.

Learning objectives:

- Learn about new developments in robotics
- Assess whether advances in robotics and artificial intelligence trivialise or illuminate human significance
- Compare ways that scholars in different disciplines and those working across disciplines describe and explain what it means to be human

Workshop description: In this workshop we start by looking at some of the most advanced human-like robots currently available. We then move into considering the implications of these advances for how we can and should understand ourselves. Are we as smart, not as smart, smarter or just differently smart when we compare ourselves with smart technology? Can a robot ever experience the world the way we do? Would, could, should a robot fall in love? Should robots be responsible for their actions? And finally 'Can an artificial, invented entity one day achieve personhood?'

Speaker Biographies:

Revd Jennifer Brown is a priest in the Church of England and has held both parish and chaplaincy posts. She is currently Tutor for the Cuddesdon School of Theology & Ministry at Ripon College Cuddesdon, an Anglican theological college, and Science Missioner in the Churn Benefice group of churches in south Oxfordshire. As Science Missioner, she is tasked with opening conversations between the church community and the science and technology community. Jennifer has a BSc in Psychology and Master's degree in the Psychology of Religion, and is currently working towards a PhD in the Psychology of Religion. Among her interests is the understanding of human and animal sentience, and questions about what makes a being a person.

Kepler and his theological vision of astronomy

A workshop looking at inherent order in Mathematics and Astronomy.

Learning objectives:

- Consider examples of order and patterns in the Universe
- Propose and evaluate ways to account for order

Workshop description: In this workshop students find out about Johannes Kepler and how he viewed astronomy, mathematics (in particular geometry) and theology as intrinsically intertwined. Kepler once said of working in science that it is like

“thinking God’s thoughts after him.” Students discover for themselves the geometric ideas underpinning Kepler’s work and how he came up with his famous three laws of planetary motion. They find out how to draw geometric shapes found in nature using only circles – and will tackle the mystery of why particular patterns recur in nature.

Speaker Biography:

Dr Elisabetta Canetta is a nanobiophysicist who studies the properties of natural and engineered biomaterials which are used to make human tissues and organs for implant in the human body. Elisabetta graduated from the University of Bologna (Italy) with an MPhys in theoretical nuclear physics after which she did a PhD in Experimental Biophysics at the University of Grenoble (France). After gaining her PhD, Elisabetta moved to the UK and held a series of postdocs at the University of Abertay Dundee, Surrey University and St Andrews University. In 2013 Elisabetta moved to London and she is currently a senior lecturer in Applied Physics and Programme Director of the BSc (Hons) Applied Physics degree at St Mary’s University – Twickenham, London. Besides her scientific interests, Elisabetta has a very keen interest in the Physics and Theology interface and how physics ideas and reasoning can be used to study theological concepts and vice versa. Elisabetta is also interested in the mathematical and physical framework underlying the order that we see in Nature and the Universe.

All you need is science, or is it? Being fully human in the modern world.

A workshop looking at Science’s epistemological limitations

Learning objectives:

- Identify what makes a question characteristically ‘scientific’ and whether science has limitations
- Form a response to the statement that science and science alone provides valid information about the universe

Workshop description: This interactive workshop will give you the chance to explore how you make sense of the universe: Who or what are you? Is ‘science’ the only way to answer this question? Are there other ways of making sense of existence? And if so, how might all these answers fit together in an emerging Universe? Expect to be challenged and to give your point of view!

Speaker Biography:

Revd Mark Laynesmith is Anglican Chaplain at the University of Reading. He is trained in theology and history, and is interested in the interface between the modern world, theology and spirituality, and questions about the relationship between information and wisdom. His hobbies include beer- and bread-making.

Can Science make better humans?

A workshop looking at technological enhancement and its implications for humanity.

Learning objectives:

- Learn about ways to intervene with human life such as genetic engineering
- Identify and explore their ethical and social implications
- Form a response to the question: Can science make better humans?

Workshop Description: Modern science, from information technology to genetics, has given us great power to intervene in human life. Indeed, some have claimed that we can now improve the human species (or at least individual members of it). We will focus on the genetic features of these claims. Can we really make ‘better humans’ and, if so, should we?

Speaker Biography:

Dr John Bryant was formerly Professor of Cell and Molecular Biology and Head of Biosciences at the University of Exeter and is now Professor Emeritus of Biosciences. His research has mainly focused on the biochemistry of DNA and the workings of genes. He has an active interest in the ethical aspects of biomedical research and has been a Bioethics advisor to the Higher Education Academy since 2002. John was Vice-President of the Society for Experimental Biology from 2001 to 2003 and President from 2003-2005; Visiting Research Associate at the Brookhaven National Laboratory USA 1992-1997 and Visiting Professor of Molecular Biology at West Virginia State University USA 1999-2007. He was Chair of Christians in Science from 1999-2006 and is a Fellow of the International Society for Science and Religion. He is an active member of Matts@5, a church planted by Exeter Network Church.

Beyond Descartes: futureproofing how we think about the soul

A workshop looking at mind/body duality and its continuing impact on modern views of what it means to be human.

Learning objectives:

- Evaluate Descartes claims of dualism
- Consider a typology of accounts of the soul
- Analyse impacts that Descartes’ vision has had on the modern world.

Workshop Description: It’s an exciting or slightly scary world – depending on how you feel about the options that science and technology are making possible. Gene editing, brain-chemistry and psychotherapy, autonomous robots: it is a tense and confusing age for those wondering who they really are and what to say about the soul. Descartes’ understanding of reality created a division between material objects

and thinking things. Despite difficulties with this approach, our current engagement in questions surrounding the soul seem inextricably tied in to Descartes' view of reality. This division between matter and the mind is reflected in the design of the school curriculum which puts enquiry by science in one subject compartment and, in another, enquiry through the humanities. In this workshop students gain the epistemic insight and critical thinking skills they will need to bridge this divide and to explain why belief in a soul can be consistent with what we know from science and about technology.

Speaker biographies:

Finley Lawson is a LASAR Research Fellow focusing on ways to think about the soul, science and religious education and outreach. He is also a part-time PhD student at Canterbury Christ Church University. His PhD thesis examines science, religion and identity building on previous work on the nature of theological and scientific descriptions of time/eternity. Before joining LASAR, Finley was an Advanced Skills Tutor for the Brilliant Club, working with disadvantaged primary and secondary students exploring philosophy, science and identity. Alongside this, he worked as an education support worker in local secondary schools and as an external examiner for King's College London on the King's Experience Research Award.

Tom German is a Project Co-ordinator and Research Assistant on LASAR with a particular focus on Communications. Tom's background is in Teacher Education and also teaching Religious Studies A level. His areas of interest include Big Questions, virtue ethics and the interface between Religion, Secularism and Science which he is exploring in doctoral research.

Spaghetti & Personality

A hands-on workshop which examines the notion of the power and limitations of science when thinking about what it means to be human.

Learning objectives

- Order questions according to their amenability to science
- Form a response to the key question: will science one day explain and explain away what it means to be human

Workshop description: Students are invited to design and investigation to test the strength of a strand of spaghetti while also discovering what they can about each other's personalities. The workshop exemplifies the value of 'epistemic Insight' and a capacity not only to answer a question – but also to question. Within this interactive presentation we also test connections between scientific knowledge and 'Big Questions', including that key question of what it means to be human.

Speaker Biography:

Dr Mehdi Nassaji is working on the LASAR project as a researcher. His BSc was in Control Engineering; he then completed an MA degree in Education and another MA in Philosophy of Science. His focus in his PhD at the University of Hull was on the idea of Plurality of Truth, arguing that there can be a number of different true claims, including religious truths that are not necessarily reducible or translatable to Science. He also has a background in teaching.

Dr Marc Brown is a LASAR research fellow at Canterbury Christ Church University and is developing the STEM pathway for the educational doctorate. Marc has currently been working on material for teaching evolution as well as developing engineering outreach proposals. Prior to joining LASAR, Marc was a teacher in a United Westminster Foundation secondary boarding school where he was in charge of the KS2 science curriculum as well as a senior and boarding tutor for the KS2 pastoral team. Marc has a Ph.D. in physics and a B.Sc. in chemical physics with a year in industry and has been employed as a research scientist with BP, and Proctor and Gamble.