

Science Frontiers

Our aim is to go where no man has gone before! And already we've achieved it – being part of the team that discovered the long-sought Higgs boson in July 2012. The incredible discovery is one of the ways our researchers work to challenge our understanding of the universe, its laws and fundamental characteristics.



We have world-leading research programmes that reach from the smallest to the largest scales, from quarks to galaxies, through to challenges of pure mathematics.

Our particle and nuclear physicists are probing what happened an instant after the Big Bang; our astronomers and astro-seismologists are leading the quest to find gravitational waves and 'see' inside the sun and other stars.

Our quantum physicists are developing new quantum materials – metamaterials – changing the way materials respond to light and microwaves; our computer scientists are establishing the mathematical foundations of

computation and programming languages.

At the Centre for Computational Neuroscience and Cognitive Robotics, our scientists are conducting research on human cognition and robotic systems, leading to a better understanding of both brain function and advanced robotics.

Making important discoveries in fundamental science is exciting, but transferring them to the marketplace is always the goal. That is what we do at the College of Engineering and Physical Sciences – and will continue to do. We have the opportunity to revolutionise manufacturing processes and product design to transform the way we live. It's an opportunity we relish.

Research areas:

- [Astronomy \(/university/colleges/eps/research/science-frontiers/astronomy.aspx\)](/university/colleges/eps/research/science-frontiers/astronomy.aspx)
- [Combinatorics \(/university/colleges/eps/research/science-frontiers/combinatorics.aspx\)](/university/colleges/eps/research/science-frontiers/combinatorics.aspx)
- [Particle physics and Nuclear physics \(/university/colleges/eps/research/science-frontiers/particle-nuclear.aspx\)](/university/colleges/eps/research/science-frontiers/particle-nuclear.aspx)
- [Quantum matter and Metamaterials \(/university/colleges/eps/research/science-frontiers/quantum-matter-metamaterials.aspx\)](/university/colleges/eps/research/science-frontiers/quantum-matter-metamaterials.aspx)

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