

College of Engineering
and Physical Sciences

What do Birmingham postgraduates do?



School of Physics and Astronomy

First destinations of postgraduates

- Analysis of first employment destinations for the College of Engineering and Physical Sciences
- Employability data for Physics and Astronomy postgraduates, 2009–13
- Illustration of the range of occupations undertaken by our postgraduates

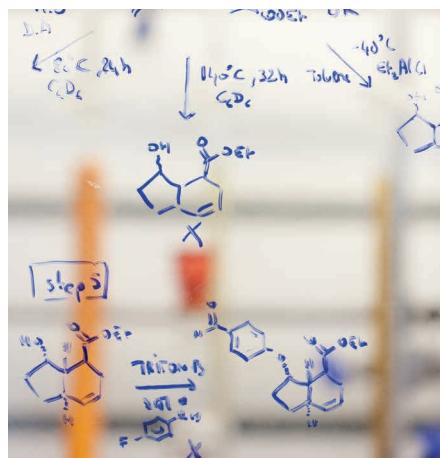
Foreword

I AM DELIGHTED TO INTRODUCE 'WHAT DO BIRMINGHAM POSTGRADUATES DO?' WHICH LOOKS IN DETAIL AT THE FIRST DESTINATIONS OF OUR PHYSICS AND ASTRONOMY POSTGRADUATES AND AT EMPLOYMENT PROSPECTS FOR ALL POSTGRADUATES WITHIN THE WIDER COLLEGE OF ENGINEERING AND PHYSICAL SCIENCES.



In addition to providing accessible information on employment destinations, this publication is also designed to give an insight into the kinds of employment sectors and jobs for which a postgraduate degree at Birmingham can prepare you.

Pursuing a postgraduate degree offers you the opportunity to explore your chosen area of interest in depth, as well as developing your knowledge and understanding in a subject area about which you are truly passionate. Beyond the transferable skills that you will take with you into the workplace, your postgraduate



qualification will give you the chance to engage in critical enquiry, to grow as a scholar and even to become an expert in your field.

Here, we show you how your postgraduate qualification can help you make that knowledge and expertise work for you after graduation. For the school that is most relevant to you in the College (Chemical Engineering; Chemistry; Civil Engineering; Computer Science; Electrical, Electronic and Systems Engineering; Mathematics; Mechanical Engineering; Metallurgy and Materials; or Physics and Astronomy) you will see a snapshot of the achievements of our postgraduates six months after graduation. All data is taken from the results of a 'Destinations of Leavers' survey issued to our postgraduates after this time.

You will be able to see, by school, how many of the postgraduates who replied to this survey successfully entered employment and/or further study within just six months, along with a range of the diverse and exciting career opportunities that will be open to you after studying

for a postgraduate degree in the College of Engineering and Physical Sciences.

Accompanying the data are case studies in which recent postgraduate alumni share their experiences of postgraduate study at Birmingham. Here, our alumni talk about the value inherent in postgraduate study, the knowledge and skills they developed during their degrees and where their qualifications have taken them since graduation.

I hope you find the information presented here useful and our alumni stories inspiring. We very much look forward to welcoming you to our campus soon.



Professor Mark Sterling
Director of Postgraduate Programmes
College of Engineering and Physical Sciences



College of Engineering and Physical Sciences

Employability

The College of Engineering and Physical Sciences is at the leading edge of modern science and engineering, transforming our understanding of the world to make life easier, healthier and more sustainable.

The College covers a broad range of world-leading research, from developing micro-engines to particle physics research at CERN. With a century of excellence in research and teaching, the College offers exciting initiatives in new fields of study and spearheads activities in strategically important STEM subjects – Science, Technology, Engineering and Mathematics.

The College of Engineering and Physical Sciences plays a significant role in creating new knowledge, training new generations of engineers and scientists, and interfacing with industry.

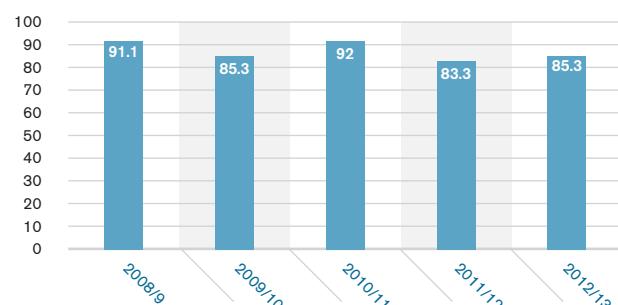
The College consists of the following nine schools:

- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science
- Electronic, Electrical and Systems Engineering
- Mathematics
- Mechanical Engineering
- Metallurgy and Materials
- Physics and Astronomy

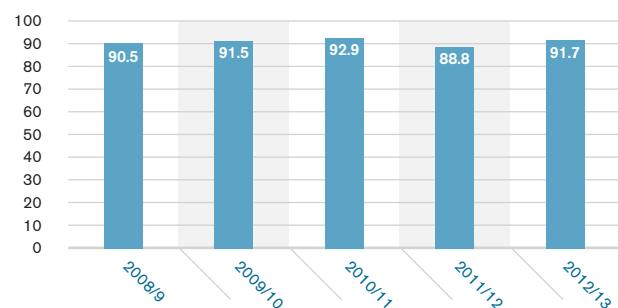
Over the last five years, 90.9% of taught postgraduates and 92.5% of research postgraduates from the College of Engineering and Physical Sciences have been in work and/or further study just six months after graduating.

The two charts to the right show the breakdown of these statistics for each year, for taught postgraduate and research postgraduate respondents.

Percentage of Engineering and Physical Sciences taught postgraduate respondents in work and/or further study six months after graduation



Percentage of Engineering and Physical Sciences research postgraduate respondents in work and/or further study six months after graduation



SOURCE: *Destinations of Leavers from Higher Education Institutions*, Higher Education Statistics Agency, 2009–13



'After graduating from the University of Birmingham I accepted a role as a software developer at a global investment bank in London. After several years in this position, I changed career and retrained as a patent

attorney specialising in intellectual property law. I am now a UK Chartered Patent Attorney and European Patent Attorney authorised to act before both the UK Intellectual Property Office and the European Patent Office.

'It is said that a patent attorney operates at the interface of law, commerce and science, and in my experience this is certainly true. Each day is

totally different and presents unique challenges. One moment you may be discussing some new technological breakthrough with a leading scientist or engineer, while in another moment you may be drafting a new global licence agreement between two corporate entities. This is why a career in intellectual property is varied, diverse and exciting.

'In order to become a qualified patent attorney you must have a degree in a scientific field. Many patent attorneys also have a PhD. The experience and skills obtained from carrying out PhD research, such as time management, independent thinking, ability to handle complex issues, multi-tasking and writing up large volumes of information in a concise and coherent manner are invaluable in many careers.

When I chose to retrain as a patent attorney, I used the resources of the University of Birmingham's career department to learn about the role and then applied for a vacancy that was advertised in their job listings. Without their help I would not have found my current job.'

Mark Thurston, PhD Astrophysics, graduated 2000

Mark is now a now a UK Chartered Patent Attorney and European Patent Attorney with Barker Brettell LLP.

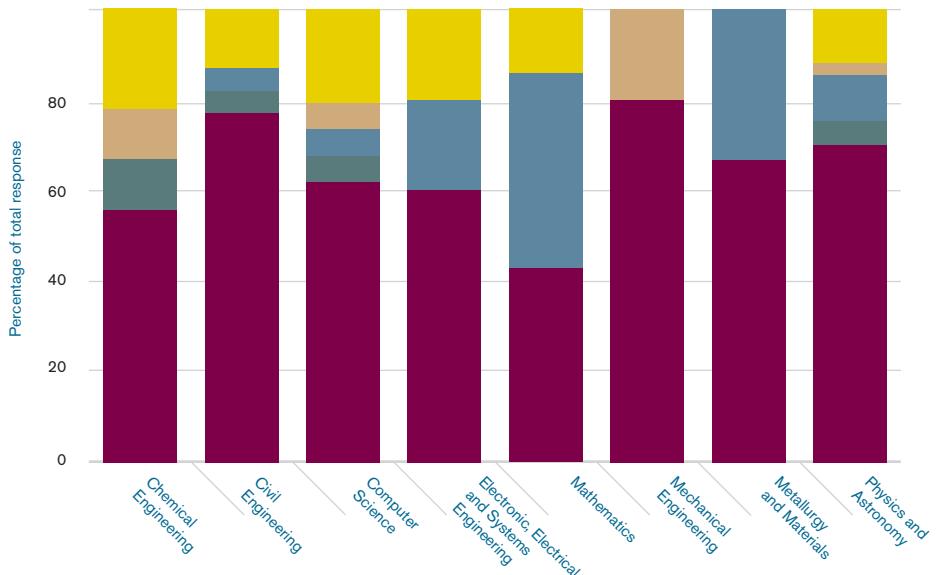
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College of Engineering and Physical Sciences

Postgraduate destinations

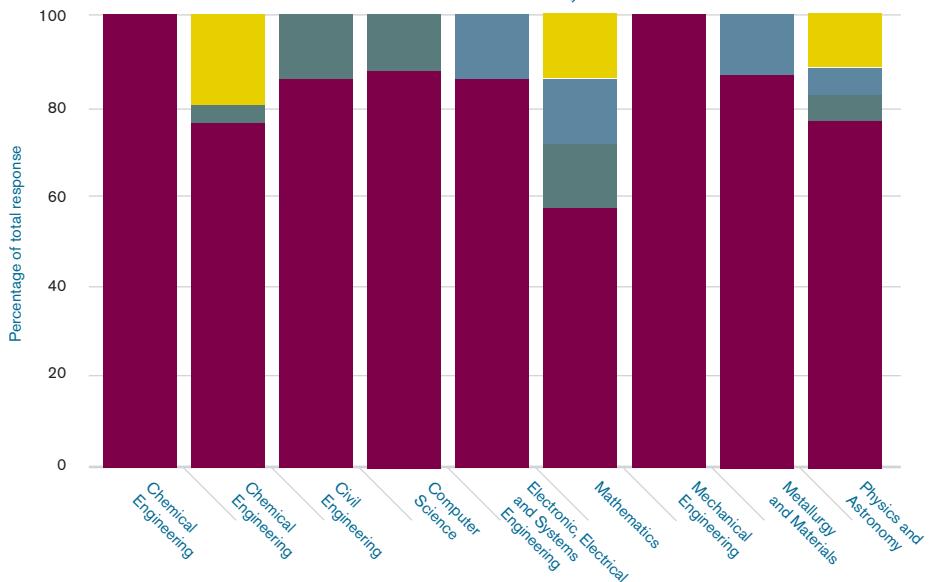
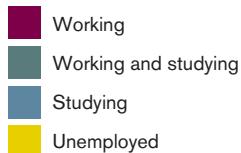
Taught postgraduate destinations

The chart to the right summarises the destinations of Engineering and Physical Sciences taught postgraduates from the 2012/13 academic year, six months after graduation:



Research postgraduate destinations

The chart to the right summarises the destinations of Engineering and Physical Sciences research postgraduates from the 2012/13 academic year, six months after graduation:



SOURCE: *Destinations of Leavers from Higher Education Institutions*, Higher Education Statistics Agency, 2009–13



'The School of Physics and Astronomy, and the Particle Physics Research Group in particular, are friendly and welcoming – through regular seminars and lively discussions over tea and biscuits, there is a strong sense of community. I taught undergraduate physicists in the laboratory and in workshops – something I really enjoyed.'

'My PhD took me to CERN, Switzerland, for 18 months; I was part of the Large Hadron Collider's early physics effort, working with an international collaboration of over a thousand scientists. I have presented my work at conferences and workshops across the world. Due to Birmingham's high scientific impact, I was appointed shift leader during part of the running of ALICE (A Large Ion Collider Experiment) and have had experience writing manuals, editing papers and training others. This responsibility within such a large collaboration has been invaluable for my employability. I thoroughly enjoyed my time

at Birmingham and the many skills I developed during my PhD will continue to be crucial throughout my career.'

Zoe Louise Chater, PhD Particle Physics, graduated 2011

Zoe is now a Postdoctoral Researcher in Nuclear Physics at the University of Liverpool.

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[www.birmingham.ac.uk/
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School of Physics and Astronomy

EMPLOYABILITY

Our Physics and Astronomy postgraduates enter careers across a wide spectrum of education and industry; many of our past students have gone on to occupy senior positions in science.

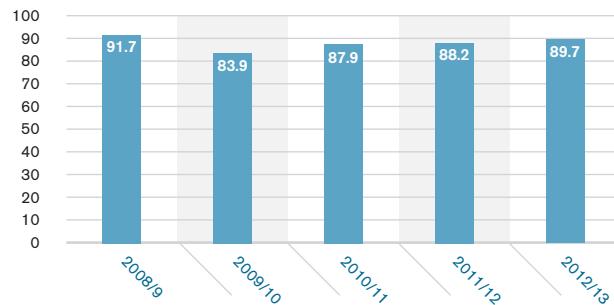
Highlights:

- Over the past five years, 91.9% of taught postgraduate respondents from Physics and Astronomy successfully found work or further study within six months of graduation
- Over the past five years, 90.9% of research postgraduate respondents from Physics and Astronomy were in work or further study six months after graduation

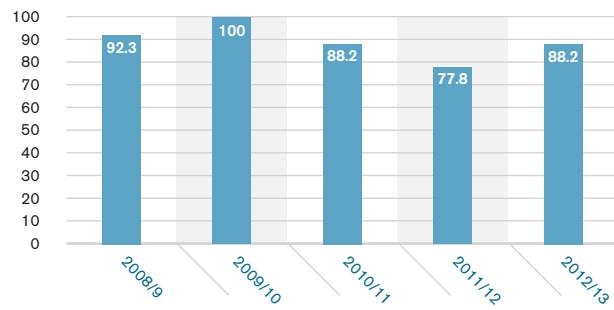
Many of Birmingham's Physics and Astronomy postgraduates follow a career related to the subject in various sectors. After completing their postgraduate studies, our postgraduates in this area enter successful careers in a wide variety of industries, including construction, aeronautics, vehicle manufacturing, consultancy, energy, electronics, professional research and health services.

The two charts to the right show results from 'Destinations of Leavers' surveys for our Physics and Astronomy postgraduates over the past five years.

Percentage of taught postgraduate respondents in work and/or further study six months after graduation



Percentage of research postgraduate respondents in work and/or further study six months after graduation



SOURCE: *Destinations of Leavers from Higher Education Institutions*, Higher Education Statistics Agency, 2009–13

RANGE OF OCCUPATIONS

Below is an overview of the kinds of employment sectors, organisations and professions that recent Physics and Astronomy postgraduates have entered, based on responses to 'Destinations of Leavers' surveys conducted six months after graduation.

Range of employment sectors

- Aerospace industry
- Business and management consultancy
- Computer programming
- Defence
- Engineering and related technical consultancy
- Higher education
- Hospital activities
- Information technology and computer services
- Manufacture of medical and dental instruments and supplies
- Manufacture of motor vehicles
- Manufacture of optical instruments and photographic equipment
- Manufacture of weapons and ammunition
- Monetary intermediation
- Production of electricity
- Secondary education

Range of employers

- Amec
- Atkins
- BAE Systems
- Cardiff University
- CERN
- Citigroup Corporate Risk Associates Ltd
- EDF Energy
- Frazer-Nash Consultancy Ltd
- Jaguar Land Rover
- Laser Quantum
- Los Alamos National Laboratory
- National Institute for Environmental Studies (Japan)
- NHS
- Nuclear Graduates
- Quanta Fluid Solutions
- Rolls-Royce
- Shireland Collegiate Academy
- UK Atomic Energy Authority
- University of Warwick

Range of occupations

- Clinical Scientist
- Criticality Safety Analyst
- Electrical Engineer
- Engineering Consultant
- Graduate Physicist
- Laser Production Engineer
- Junior Java Developer
- Medical Test Technician
- National Waste Programme Coordinator
- Nuclear Physicist
- Post-doctoral Research Assistant
- Radiation Shielding Engineer
- Radiation Transport Analyst
- Ratings Risk Analyst
- Reactor Operator Instructor
- Research Fellow
- Safety and Reliability Engineer
- Software Developer
- Training Medical Physicist