Gatsby Plant Science Summer School 2018

1st - 5th July 2018

The Hawkhills, Easingwold, York

*“An amazing and inspirational opportunity that will open your eyes to plant sciences and your future*", 2014 participant

* **Hear from the UK's top scientists on global challenges and science’s biggest questions**
* **Develop your skills for research, study & work**
* **Get inspiration and insight into future careers**

"*It is an opportunity of a lifetime, such great fun, brilliant for your future career in biology"*, 2014 participant

*"This week will change everything you thought about plants. Hear about cutting edge research from world renowned researchers, gain invaluable information, have a great social time, meet lots of friends and enjoy endless free cake*." 2014 participant

At the Gatsby Plant Science Summer School, each morning begins with a talk by a distinguished scientist, sharing how their research tackles the world’s big questions and challenges. You'll discuss the lecture in small groups, led by an experienced academic tutor, before returning to question the speaker. **Speakers in 2018 will include experts on topics such as synthetic biology, plant disease and responses to climate change.**

After lunch, you'll take part in science practicals designed to give you insights into new developments in the field. These include using confocal microscopes to see live cell development, seeing how pathologists are tackling the spread of disease, and how computer modelling shapes our understanding of developmental biology.

Over the week, you'll also learn how to put inspiration into action. You’ll develop your careers skills, being coached by expert mentors on topics such as how to find work experience, how to get bursaries and studentships, how to make connections with scientists, and how to run a research project.

The social side definitely isn't forgotten - you'll meet fellow biosciences students from across the UK, making new friends in a lively but relaxed environment.

*"I believe this will probably remain the single most important part of my academic life.”* 2017 participant

Grants and how to apply

This opportunity is entirely sponsored by the Gatsby Charitable Foundation, including all science teaching and equipment, all accommodation, and all food for the week - you only need to cover the cost of your travel. Accommodation is in single en suite rooms. Grants towards travel costs are available for students on low incomes.

"*Genuinely interesting, important, possibly life and career-changing, fun and free.*" *2014 participant*

If you'd like to be considered for a place, contact the lecturer at your University known as your Gatsby Mentor, and let them know you're interested (see [www.gatsbysummerschool.org.uk](http://www.gatsbysummerschool.org.uk) for the name of your Mentor). There are 80 student places, selected from 28 UK Universities and your mentor will select up to 3 end of first year (or second year for Scottish universities) undergraduate students from your University for a place on the 2018 course. Don’t be put off that it’s competitive; it’s worth telling your mentor if you’re interested, as they may be able to put other local opportunities your way too.

The 2018 Programme

Lectures and tutorials

‘Thinking without a brain- auxin and the self-organisation of plant form’ Dame Professor Ottoline Leyser, Sainsbury Laboratory, University of Cambridge

‘Engineering Plants for Farming and Pharming’ Dr Nicola Patron, Earlham Institute

‘Action Oak’ Dr Lisa Smith, Defra

‘The sticky business of microbes and plant roots’ Professor Philip Poole, University of Oxford

‘Combining plants, physics and mathematics to unlock the secrets of epigenetics’ Professor Martin Howard John Innes Centre

‘Silicon in plants: novel approaches to crop protection and climate change mitigation’ Professor Sue Hartley, University of York

See selected past years’ lectures at [www.intobiology.org.uk/category/global-challenges/videos/](http://www.intobiology.org.uk/category/global-challenges/videos/)

Practicals

**Cell Biology**

Live-cell imaging using fluorescent reporter proteins is one of the central techniques in modern cell biology. In this workshop, you’ll get your hands on a top-end research quality confocal microscope, followed by computer-based image analysis techniques. You’ll meet young researchers working in this fast-moving area, and find out what excites them.

**Development**

This workshop introduces you to the importance of computer modelling as a research tool for biologists. Designed for both total beginners and more experienced programmers, you’ll relate patterns in living organisms to the underlying biological development processes.

**Pathology**

Find out how the UK protects the health of our forests, crops and environment by preventing the spread of pests and pathogens. You’ll go out into the field to collect specimens of potentially invasive pests, before using high-tech kit for DNA testing. During the workshop, you’ll speak to people working in the area about their experiences and what the work is really like.

**Plant ID**

Whether you’re a skilled ecologist or you can’t tell a dandelion from a daffodil, the Plant ID practical will get you looking at plant families in new ways. Using a specially designed method, we’ll do away with the traditional difficulties of using keys for taxonomy. By the end of the workshop, you’ll be confident in using a key to identify families and you’ll have tested your new skills in the field.

Careers

Throughout the Summer School, you’ll have the chance to meet people with a wide variety of careers in science – many of which you may never have heard of. You’ll hear from people at all stages of their careers, hear their top tips for success and fulfilment, and get practical support with your next steps.