

# Gatsby Plant Science Summer School 2017

## 25 - 30 June 2017

### 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 2017 will include experts on topics including increasing crop yields to using maths to study plant science.**

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.

*"It's been the single most inspirational event I've attended in my life as far as a career in science is concerned." 2015 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 2017 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 2017 Programme

## Lectures and tutorials

“How microbes cause plant disease and how plants fight back” Prof Jonathan Jones, TSL

“Sensing and remembering winter” Prof Dame Caroline Dean, John Innes Centre

“Transforming crop yields with sugar” Prof Matthew Paul, Rothamsted Research

“Autophagy – life and death of a plant cell” Prof Diane Bassham, Iowa State University

“Using maths to understand plant growth” Dr Leah Band, University of Nottingham

“Farming with robots” Prof Simon Blackmore, Harper-Adams University

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.