

# Gatsby Plant Science Summer School 2022

26<sup>th</sup> June - 30<sup>th</sup> June 2022  
The Hawkhills, Easingwold, York

Gatsby  
Plant Science  
Summer School  
**2022**

*"It was one of the most enriching things I've done and it was wonderful to learn for the sake of learning without exam pressure", 2017 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**

*"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 (GPSSS), 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 2022 will include experts on topics such as circadian rhythms, crop domestication and plant health.

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.

*"Life changing. If you're not sure about what you want to do this experience will be amazing for you, so enjoyable, it will shape the rest of my degree and academic career" 2019 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.

*"It has been truly inspiring and, especially in a year of uncertainties like this, it has provided some hope" 2021 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. Your mentor will select the most suitable first year (or second year for Scottish universities) undergraduate students from your University. 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 2022 Programme

## Lectures and tutorials

*'Thinking like a vegetable'* Professor Dame Ottoline Leyser, UKRI (UK Research & Innovation)

*'Breaking the Silence: How to Make Small Plant Mouths that Support Our Sustenance'* Professor Keiko Torii, University of Texas at Austin

*'Ecological monitoring with citizen science'* Dr Chantal Helm, University of Cambridge

*'How and why do plants tell the time?'* Professor Antony Dodd, John Innes Centre

*'Domestication: why do we eat what we eat?'* Dr Mark Chapman, University of Southampton

*'Responding to an increasing threat – protecting the UK's plants and trees from pests and diseases'* Professor Nicola Spence CBE, Defra (Department for Environment, Food and Rural Affairs)

See selected past years' lectures on our YouTube channel:

<https://www.youtube.com/c/GatsbyPlantScienceEducationProgramme>

## 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.

\* Subject to COVID-19 Government guidance.

## 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.