Gill (Wheat breeder): "My degree was in Applied Biology at Nottingham University, which allowed me to do a bit of everything. I really enjoyed plants and especially agronomy. So after my degree I took a masters degree at Harper Adams University College where I learned more about molecular biotechnology as well as diseases and pests. I run a breeding programme to produce the best varieties for different industries, e.g. bread, whisky, animal feed, biofuels".

Why Study Plant Science?

The world is full of questions and challenges which need to be solved by our future generation of scientists.

- The global population will reach 9 billion within our lifetime – how will we feed everyone?
- Phytopharmaceuticals are needed to combat diseases such as malaria – where will we source them from?
- Climate change is affecting the weather – how can we ensure survival and sustainability of food crops?
- Trees are at risk from disease - how can we protect the landscape around us?

Plant scientists study how plants work, the diversity of species in the world and the many ways we can use them in our daily lives. They investigate ways to adapt plants to extreme climates such as drought and flooding, and search for new plant products to help cure human diseases. As well as finding new ways to protect crops, plant scientists also monitor the impact of environmental change on the plants around us.

Many important future technological challenges which affect human survival and quality of life will need plant science knowledge to solve them.

Further Information

Education

Master's degree courses
www.findamasters.com

PhD studentships
www.findaPhD.com
http://ec.europa.eu/euraxess/

Careers information and jobs

Science jobs
http://jobs.newscientist.com
www.naturejobs.com

Research jobs
www.jobs.ac.uk

Environmental jobs
www.environmentjobs.co.uk

Earthworks
www.earthworks-jobs.com/plant.html

Horticultural careers
www.growcareers.info

Plant science Careers
http://www.gatsbyplants.leeds.ac.uk/students.php
http://my.aspb.org/?page=Career_Center

Plant science videos
www.youtube.com/user/ThePSRG?feature=watch

Plant science organisations

UK Plant Sciences Federation (UKPSF)
www.plantsci.org.uk

Society for Experimental Biology (SEB)
www.sebiology.org

Society of Biology
www.societyofbiology.org/education/careers

Science and Plants for Schools (SAPS)
http://www.saps.org.uk/

SEB
Society for Experimental Biology

plant science

Your Future with Plant Science

Getting Ahead with Plant Science

Many universities offer plant science degree courses or modules, and many integrate plant science into courses on general biology, cell and molecular biology, biochemistry, ecology and genetics. Enhance your knowledge of plant science by taking any of these courses at second and third year, selecting a final year research project in plant science and gaining work experience. The following opportunities are available:*

Gatsby Plant Science Summer School

Undergraduates at selected universities with an interest in plant science have the opportunity to attend the prestigious Gatsby Plant Science Summer School.
http://www.gatsbyplants.leeds.ac.uk

Undergraduate Summer Research Training Programme

The John Innes Centre, The Sainsbury Laboratory and The Genome Analysis Centre provide an excellent opportunity for UK and non-UK students to spend the Summer on their research programme.
http://opportunities.jic.ac.uk/summerprogramme/

Undergraduate Placements

- Learned societies (academic charities) offer placements to undergraduate students to help them to improve their research skills. Organisations related to plant science include: Society of Biology, Biochemical Society, Botanical Society of Scotland, Botanical Society of the British Isles, British Lichen Society, British Mycological Society, British Phycological Society, British Society for Plant Pathology.

*Check in which year of study students are eligible to apply as this varies between programmes.

Holly (Team leader): "I chose to specialise in plant science during my degree at Cambridge University because it spans the whole range of biology from the molecular level up to the environment. It meant there was more variety which allowed me to stay broad. After my degree I decided to do a PhD and then, with the skills and expertise I had acquired, I got a job as a scientist working in a company producing cell lines and DNA diagnostic kits for the pharmaceutical industry".

Thomas (PhD student): "I am currently studying for a PhD at Sheffield University investigating the origins of agriculture. The research is being carried out in collaboration with archaeologists who study remains of seeds from the beginnings of agriculture, ten thousand years ago. By looking at patterns across the world and comparing seed sizes (seeds of crop plants tend to be larger than those of their wild counterparts) at these different sites, we are aiming to determine exactly where and how agriculture started. I will complete my PhD in a few months' time, and have already been offered a research post in the US, which is a very exciting prospect".

- Funding councils, research institutes, charitable trusts, museums and companies also support placements and include: BBSRC, NERC, Rothamsted Research, The Carnegie Trust, Nuffield Foundation, KWS, Natural History Museum and Science Museum.

For a comprehensive list of opportunities see:
www.societyofbiology.org/education/careers/placements/undergraduatestudentships

Plant Science at Work

Global challenges are being tackled by people in diverse jobs and with a broad range of skills. Graduates with knowledge of plant science apply their skills to many professions:

Research and development (R&D)

Research is needed to improve global food security, discover new biomedicines, develop sustainable biofuels and deliver new varieties of crops, which can withstand extreme climates and resist disease. This research is carried out by plant scientists working in research institutes, universities and industry, often involving teams of national and international contributors.

Conservation and environmental protection

Plant ecologists and botanists conduct surveys of vegetation and species as part of the planning application or Environmental Impact Assessment process, or for conservation charities to develop management plans for nature reserves. The work involves a mix of surveying, mapping, reporting, negotiating and project management with opportunities to be self-employed.

Agriculture and horticulture

Agricultural consultants carry out a range of activities which include organising and conducting field trials, collecting data and providing information and advice to clients such as farmers and conservation organisations. Horticulturalists and plant breeders grow and cross varieties of commercial plants to improve them for the market, e.g. increasing their nutritional content, adaptation to the environment and other qualities such as scent and colour.

Education and communication

Inspiring the next generation through teaching or communicating your passion for science to the public are highly rewarding careers for those attracted to these professions. Science communicators work in organisations such as museums, botanical gardens, science centres, charities and the media.

Dan (Project manager): "During my degree in Botany at Aberystwyth University I did a placement at Kew Gardens which inspired me to travel the world to look at plants in their habitats. I wanted to pass on my enthusiasm for plants to school students and so I steered my career towards science communication. My initial jobs involved working in an educational institute and science learning centre helping teachers to learn new laboratory techniques. During this time I was able to study part/time for a Master's degree in science education. This led on to my current post at Science and Plants for Schools (SAPS), which focusses on setting up projects to engage with teachers to help them to increase their students' interest in and awareness of plant science".

Science-related careers

Science degrees provide a wealth of transferable skills which will complement your subject interest. You may find you prefer doing tasks which require particular skills such as technical, analytical, problem-solving, communication, organisational or team working. Along with your academic interests, these will also determine your preferred career areas. There is a wealth of careers associated with science such as project management, policy, marketing and administration based in companies, learned societies, charities and not-for-profit organisations.