The School of Life Sciences brings together Warwick's renowned research and teaching excellence to offer an outstanding, diverse and multidisciplinary life sciences learning environment. World-class facilities and internationally-recognised scientists develop pioneering research ideas and innovations in a wide range of disciplines – from the study of single molecules to models of entire ecosystems. We apply our expertise to solving major global challenges in areas such as food security, disease control, bioenergy, systems biology, neurobiology and climate change. Research within the School underpins much of our teaching and we run an innovative Doctoral Training Programme.

RESEARCH DEGREES

MSc BY RESEARCH (MScR)

DOCTOR OF PHILOSOPHY (PhD)

PROFESSIONAL DOCTORATE

TAUGHT MASTER'S DEGREES

MSc BIOTECHNOLOGY, BIOPROCESSING & BUSINESS MANAGEMENT

MSc ENVIRONMENTAL BIOSCIENCE IN A CHANGING CLIMATE

MSc FOOD SECURITY

MSc PLANT BIOSCIENCE FOR CROP PRODUCTION

MSc SUSTAINABLE CROP PRODUCTION: AGRONOMY FOR THE 21st CENTURY

CONTACT DETAILS

Postgraduate Admissions Secretary
School of Life Sciences
Gibbet Hill Road
University of Warwick
Coventry CV4 7AL
United Kingdom

Master's programmes:
msc.lifesciences@warwick.ac.uk

Research programmes:
phd.lifesciences@warwick.ac.uk

RESEARCH AREAS

Biochemistry and Cell Biology

Mechanism of chromosome segregation; plant genomics and novel crops; neural circuits and neural communication; physiology of synaptic transmission and synaptic plasticity; protein transport and trafficking; protein crystallography and structure; molecular cell biology; cell fate; *Drosophila* neurosciences; hormone perception; neuronal and glial signalling; structure and folding of prions; macromolecular assemblies; diabetes and endocrinology; brain synapses.

Environmental Microbiology

Microbial diversity in soils, mycorrhizas; physiology, biochemistry and molecular biology of methane oxidizing bacteria; characterisation of iron- and sulfur-oxidising microorganisms; microbial ecology; microbial degradation of aromatic chemicals; bacterial cell wall biosynthesis and cell division mechanisms; marine microbiology; microbial sulfur cycling in oceans and soils; understanding the ecological roles for specific bacterial activities, including antibiotic production.

Environmental Resource Management

Plant evolutionary genetics; biological pest control and integrated pest management, bee health; Insect biology; biometrics and biosystem modelling; weed ecology and evolution; marine environmental research; molecular anthropology.

Epidemiology

Population ecology and epidemiology; epidemiology of infectious and non infectious diseases in livestock; infectious disease modelling; infectious disease epidemiology; control of infectious diseases.

SCHOOL OF LIFE SCIENCES

(incorporating the Life Sciences Doctoral Training Centre)
www.warwick.ac.uk/go/lifesci
(See MOAC on page 129 and Systems Biology on page 149)

Aaron Abbott, *PhD*
Life Sciences

"My PhD was funded by the BBSRC Crop Science Initiative. The project involved the isolation of flowering time genes in lettuce which were used to manipulate the time of bolting. My research resulted in the production of new late-bolting germplasm which is currently being used by one of our collaborators in lettuce breeding programmes. I gained invaluable experience completing my project at Warwick which has enabled me to obtain the position of Vegetable Plant Breeder at Elsoms Seeds. The expert supervision and relevant training I received along with the modern facilities at my disposal throughout my project helped me achieve high quality results and ultimately assisted me in successfully obtaining a job in a highly competitive area."

Infectious Agents

Viral translation mechanisms; plant viral disease resistance factors; adenovirus immune invasion; infectious disease; molecular biology of viruses; molecular biology of RNA virus replication and evolution; regulatory mechanisms that allow microorganisms to respond to the environment; adenovirus cell and molecular biology.

Plant Regulatory Mechanisms

Host-pathogen interactions; signalling networks in plant senescence; circadian clocks in plants; systems biology of host-pathogen interactions; systems biology of nitrogen-regulated development; understanding the role of ubiquitin in plant stress responses.

Transnational Crop Genetics

Regulation of plant lipid metabolism; seed science and seedling establishment; epigenetic control of plant development; ecological genetics of plant-microbe interactions; molecular control of flowering and plan development; environmental control of plant and crop development; water use efficiency and drought resistance; plant-virus interactions; food security; The Crop Centre; conservation and exploitation of plant genetic resources.

RESEARCH DEGREES

MSc BY RESEARCH (MScR)

Standard Duration: 1 year full time, 2 years part time

This practical course is based on a single research project under the training and supervision of one of our Research Leaders. Research is interdisciplinary and ranges from laboratory-based fundamental science to field-based applied agriculture and ecology. The course will give you hands-on experience of your specialism and can be used in preparation for a PhD. It also prepares you for a career in science or agricultural administration, business, accountancy or law where the products sold involve advanced technology, or as a consultant in many highly skilled sectors.

DOCTOR OF PHILOSOPHY (PhD)

Standard Duration: full-time 3/4 years, part-time 5 years

The course is based on a single research project, under the training and supervision of one of our Research Leaders. You will work in a high-quality, research-focused environment. We have strong links with research institutions, business and industry, both in the UK and overseas, working to develop innovative areas of research and technology.

Research is interdisciplinary, ranging from lab-based fundamental science to field-based applied agriculture and biomedicine.

PROFESSIONAL DOCTORATE

Standard Duration: full-time, 3 years for students already holding an MSc or 4 years for those without an MSc (or equivalent); Part-time 7 years

This is a portfolio-based PhD programme carried out in collaboration with an industrial partner. The programme integrates academic training with a series of shorter research projects. It is equivalent in challenge and status to a standard single project PhD, but its flexibility is more appropriate for those pursuing professional rather than academic careers.

APPLICATION FACT FILE (RESEARCH DEGREES)

Entry Requirements

PhD: At least a 2:i UK honours degree or equivalent

MSc: A 2:ii UK honours degree, or equivalent, is normally required

Professional Doctorate: A first or upper second class UK honours degree or equivalent qualification or, MSc in a relevant science or, other relevant experience with demonstrated abilities deemed equivalent by the programme team to either of the above. The candidate must have an identified industrial project partner, or be engaged in industry with approval to pursue the research work required for this degree.

English Language Requirements

IELTS 6.5, TOEFL (iBT) 92 or equivalent

Application

All applications are made online at **www.warwick.ac.uk/go/pgapply**.

Tuition Fees

(2011/2012 rate; please note that fees for 2012/13 will be published online in spring 2012)

Home/EU: Full-time £3,900, Part-time £2,340

Overseas: (Band 2) Full-time £15,460, Part-time £9,276

Funding

Individually funded PhD studentships are advertised on the School's website when they are available. 3, 3.5 and 4 year Research Council-funded PhD studentships are available. BBSRC/EPSRC fund 1-year taught MSc + 3-year PhD studentships available through the Systems Biology (see page 149) and MOAC centres (see page 129). Both of these centres are closely linked to the School of Life Sciences.

Details of the Chancellor's Scholarships and other funding opportunities are available from: **www.warwick.ac.uk/go/graduateschool**

DOCTORAL TRAINING

The Life Sciences Doctoral Training Programme offers a selection of routes to a PhD in Life Sciences with excellent opportunities for training and research. We promote interdisciplinary research projects involving all departments and centres carrying out Life Sciences research. Chief among these are the School of Life Sciences and Department of Chemistry. Key associated centres include Warwick Medical School, Warwick Systems Biology and the Department of Physics.

CONTACT DETAILS

Professor Colin Robinson
T +44 (0)24 7652 3557
E phd.lifesciences@warwick.ac.uk

LIFE SCIENCES DOCTORAL TRAINING PROGRAMME

Standard Duration: 3 or 4 years

The Life Sciences Doctoral Training Programme has been designed to prepare students for a rewarding and productive PhD as preparation for a successful career. Students work on a project within specific research groups. An updated list of current projects is available on the website. It includes formal training in transferable professional skills taken by al PhD students.

Several types of entry are available; 4 year PhDs incorporating a 9-month training course, 3.5 and 3 year PhDs for those already holding an MSc or other professional qualification or experience or those supported by 3-year funding schemes.

For more details please see **www2.warwick.ac.uk/fac/sci/lifesciencephd/training**

APPLICATION FACT FILE (DOCTORAL TRAINING)

Entry Requirements

Normally a 1st or a 2:i Bachelor's degree in a relevant field are eligible, or equivalent. The following may be considered: 2:ii and an additional Master's degree in a relevant field may be eligible or 2:ii and at least three years postgraduate experience in a relevant field may be eligible. Shortlisted applicants will be invited to an interview.

English Language Requirements

IELTS 6.5, TOEFL (iBT) 92 or equivalent

Application

Before you apply, it is recommended that you contact the supervisor in your area of interest to discuss your eligibility to apply. All applications are made online at **www.warwick.ac.uk/go/pgapply**

Application Deadline

Applications are welcomed throughout the year, however we recommend that you apply before 1 March as most studentships are allocated towards the end of March.

Tuition Fees

(2011/12 fees. Please note fees for 2012/13 will be published online in spring 2012.)

Home/EU: Full-time £3,900, Part-time £2,340

Overseas: (Band 2 – lab-based)
Full-time £15,460, Part-time £9,276

Funding

All applicants: Details of the Chancellor's Scholarships and other funding opportunities are available from: **www.warwick.ac.uk/go/graduateschool**

UK nationals/residents may apply for full BBSRC studentship grants. See website for further details, **www.warwick.ac.uk/go/lifesciencephd**

TAUGHT MASTER'S DEGREES

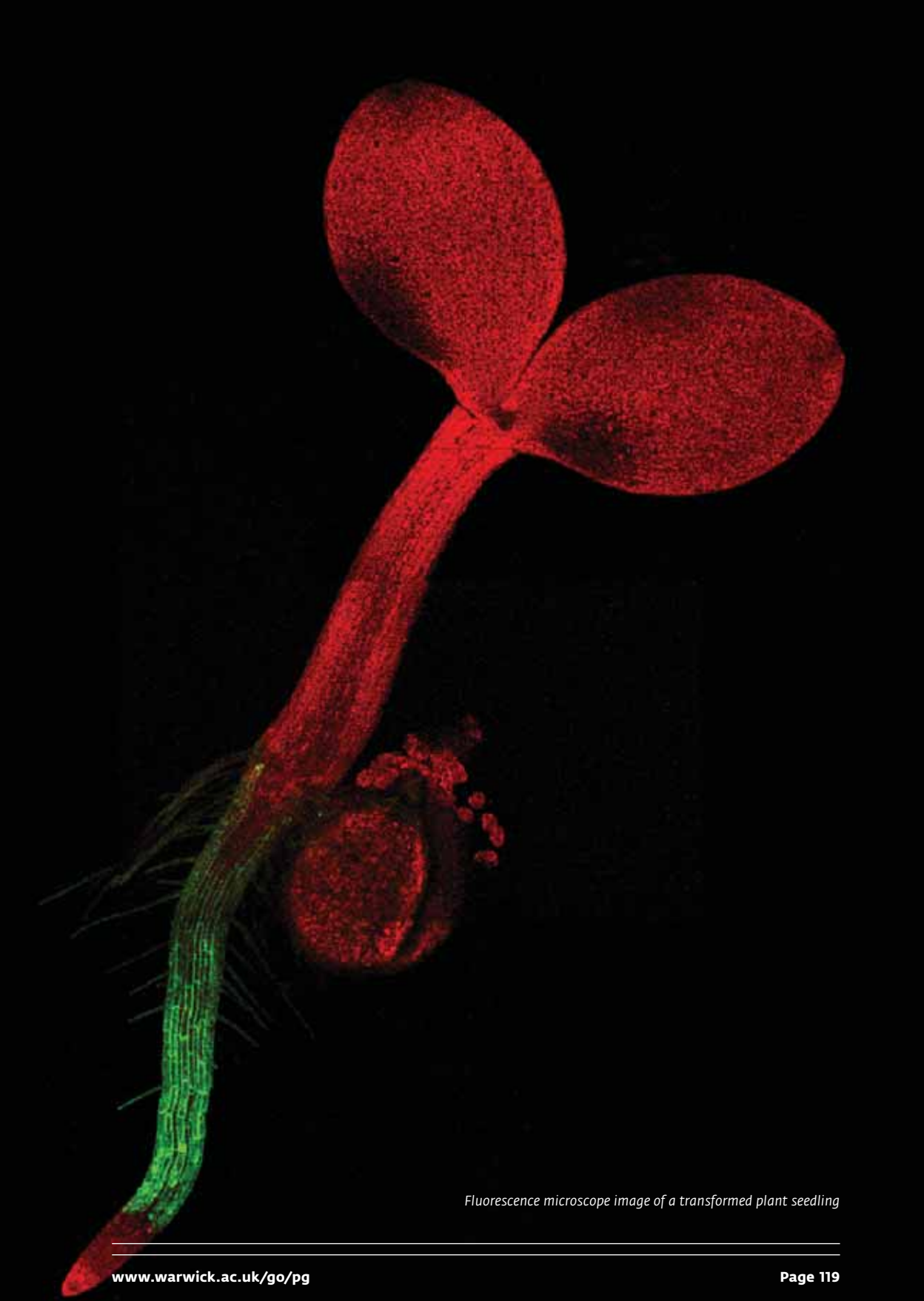
MSc BIOTECHNOLOGY, BIOPROCESSING & BUSINESS MANAGEMENT

Standard Duration: full-time 1 year

This innovative, multidisciplinary course is aimed at biotechnology and bioprocessing business managers of the future. The bioprocessing and biotechnology industries are a major component of global industrialised economies with impacts in medicine, food manufacturing and the fabrication and testing of biopharmaceutical products. The pace of change is high and requires a new calibre of technical specialist; a person capable of analysing and resolving problems in a timely and effective manner. Ideally this specialist will have business acumen and a knowledge base that integrates a broad spectrum of relevant expertise. This Master's will equip you with the necessary tools and expertise to become such a person, offering key business information and industrially-relevant knowledge.

You will gain an up-to-date and broad technical and business knowledge of the biotechnology and bioprocessing industries, learn how to analyse problems and propose solutions, understand how to analyse the market need for technical or product development, propose a technology strategy and manage the development.

The interdisciplinary nature of the course together with the diverse background of fellow students will offer opportunities to stimulate your career and personal development within leading centres of expertise at Warwick.



Fluorescence microscope image of a transformed plant seedling

MSc ENVIRONMENTAL BIOSCIENCE IN A CHANGING CLIMATE

Standard Duration: full-time 1 year, part-time 2 years

Escalating rates of environmental and climate change are forcing us to revise our management of agricultural and natural habitats. This course aims to equip students with the necessary scientific and analytical skills to tackle these increasingly important issues. It provides an integrated perspective on environmental bioscience, environmental management and environmental politics and regulation as these relate to land management for the sustainable production of food, energy and ecosystem services. Global climate change and associated environmental issues are overarching themes throughout the course. Graduates could expect to work in areas related to sustainability in farming systems, rural development, environmental management, environmental policy and environmental consultancy.

MSc FOOD SECURITY

Standard Duration: full-time 1 year, part-time 2/3 years

This course will give you an understanding of the elements that contribute to the food security agenda. Climate change and world population growth put pressure on governments, producers and consumers to plan ahead for food security.

The course draws together critical components such as climate change, the role of biodiversity, water, soil, land use, labour, nutrition transition and urbanisation to prepare you for career paths in academic research and a wide range of public and commercial enterprises, government agencies, policy development and consultancy. Demand for well-qualified people to contribute to food production and the supply chain will increase in line with demand to double food production over the coming decades. Governments require experts who are able to contribute to policy creation and legislation. NGOs need people who work at the interface of natural and social science.

MSc PLANT BIOSCIENCE FOR CROP PRODUCTION

Standard Duration: full-time 1 year, part-time 2 years

This course will enable you to apply cutting-edge science to real and diverse cropping challenges including modern plant breeding and agriculture in a resource-limited world, water-use efficiency, fertiliser uptake and biological control. The latest molecular and strategic bioscience techniques will be taught from a broad spectrum of scientific disciplines and analysed in the context of modern commercial practices. Advanced crop production techniques, molecular science and genomics will be integrated with developments in physiology, pathology, pest and weed ecology along with the latest strategies for optimising soil, water and nutrient use efficiencies.

MSc SUSTAINABLE CROP PRODUCTION: AGRONOMY FOR THE 21ST CENTURY

Standard Duration: full-time 1 year, part-time 2/3 years

This course provides the knowledge and practical skills for the improvement, growing and management of crops. It will give you the understanding to allow you to adapt to future industry changes influenced by climate change, pressure on resources or food shortage. You will learn principles of crop production, the latest advances in plant pathology, integrated pest management and weed control, and ecology.

Modules will explain the importance of the soil for nutrition and water uptake, modern plant breeding techniques and how crop trials are designed and analysed. You will acquire the skills necessary for careers in crop agriculture, agronomy, crop trial management, and as policy development officers, technical commodity specialists and professional advisors. We expect our graduates to become the industry's future managers and leaders.

APPLICATION FACT FILE (TAUGHT MASTER'S DEGREES)

Entry Requirements

MSc Biotechnology, Bioprocessing & Business Management

Second class (minimum) Bachelor's degree in Natural Sciences, Engineering or Business Studies (students from an engineering or business background must be of high calibre and demonstrate an interest in biological sciences). For more details contact **mscbiomanagement@warwick.ac.uk**

MSc Environmental Bioscience in a Changing Climate, MSc Food Security, MSc Plant Bioscience for Crop Production and **MSc Sustainable Crop Production: Agronomy for the 21st Century**

Applicants should have (or expect to obtain) a Bachelors degree in a bioscience, environmental science or another appropriate discipline (minimum second class honours degree from a British university or equivalent from an overseas university). In certain circumstances other qualifications and experience may be considered in lieu of normal entry requirements. For more details contact **msc.lifesciences@warwick.ac.uk**

English Language Requirements

IELTS 6.5, TOEFL (iBT) 92 or equivalent

Application

All applications are made online at **www.warwick.ac.uk/go/pgapply**

Tuition Fees

(2011/2012 rate; please note that fees for 2012/13 will be published online in spring 2012)

Home/EU: Full-time £6,080, Part-time £3,040

Overseas: (Band 2, lab-based)
Full-time £16,000, Part-time £8,000

Funding

Tuition fee bursaries up to £1,500 are available for full-time study on some taught MSc courses. For the MSc Sustainable Crop Production, BBSRC funding is available (tuition fees plus stipend). Details can be found on the School's website.