

# LAURA NEILL

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## RESEARCH EXPERIENCE

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### **Postdoctoral Research Scientist, Department of Plant Sciences, University of Oxford (2022-2025)**

- Investigating genes regulating differentiation, development and photosynthesis in flower development
- Cloning and functional characterisation of novel genes regulating flower development
- Analysis of gene and protein expression during development in mutant and wild-type plants
- Identification and assessment of novel protein function through biochemical methods
- Successful fulfilment of research objectives within grant timelines
- Publishing of scientific papers in peer-reviewed journals to support the research programme
- Regular attendance and presenting of results at national and international meetings to publicise and promote the research

### **PhD Research, Department of Biology, University of Nottingham (2018-2022)**

- Using molecular and biochemical techniques to investigate the role of pectin esterase iso-enzymes, active in cell wall-degradation, during tomato fruit ripening and softening
- Characterisation of wild-type, mutant and transgenic plants, to assess gene function
- Identification and patenting of a gene involved in tomato fruit-softening
- Gaining expertise in a broad range of molecular and biochemical techniques
- Collaborated with ZENECA Plant Science to source GM samples for analysis

## RELEVANT RESEARCH SKILLS

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- Gene cloning and characterisation e.g. generation of gene libraries, screening, and sequencing of genes
- Analysis of gene expression e.g. microarray generation and analysis, southern northern blots in situ hybridisation
- Use of bioinformatics packages to assist in identification of putative gene function for novel genes e.g. transcription factors
- Assessment of protein function using biochemical methods e.g. hybrid systems, enzyme assays
- Generation and analysis of transgenic plants e.g. via ELISA, western blot

## AWARDS

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Mabel Pannell Postgraduate Scholarship for outstanding progress in research

NERC PhD Studentship Award (£50000) 2018

Nuffield Foundation Undergraduate Studentship Award (£5000) 2014

## EDUCATION

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### **University of Nottingham (2018-2022)**

PhD Biology: Organisation and expression of pectin esterase isoenzymes in tomato

### **University of Oxford (2014-2018)**

BA (Hons) Biological Sciences 2.1

### **Tudor Grange School, Solihull (2006-2013)**

A Levels in Chemistry (A), Physics (B) & Biology (A); 9 GCSEs

## **TEACHING EXPERIENCE**

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### **Tutor, University of Oxford and Nottingham University (2018-2025)**

- Delivering practical and tutorial sessions for courses in Molecular Biology and Developmental Biology for groups of up to 30 undergraduate students
- Responsible for prior-assessment of curriculum, development of suitable resources in collaboration with other presenters, organisation and delivery of sessions and coursework marking and feedback

### **Mentor/Supervisor, University of Oxford (2022-2025)**

- Training junior lab members in practical techniques to ensure competence and personal safety

### **Demonstrator, The Open University (2022)**

- Level 2 course, Plant Physiology Summer School
- Assisting with the delivery of this pre-designed practical course, helping students to run their experiments and analyse the results

## **ADDITIONAL RELEVANT EXPERIENCE**

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### **Assistant Information Officer, ICI Agrochemicals (2015-2014)**

- Working as part of a team of four to provide a scientific and commercial information service to more than 200 scientists at an international research centre
- Assisting in the training of scientists in the use of information retrieval tools

### **Laboratory Assistant, British Gas plc (2013-2014)**

- Temporary gap year position, assisting with chemical sample analysis from research pipeline

## **ADDITIONAL SKILLS & COURSES**

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Teaching Skills (Level 1) - introduction to teaching and lecturing methods (2 day course; Oxford University, 2018); Supervising DPhil students (Oxford University, 2023)

UK GRAD School (Nottingham, 2021) – a 4 day residential course developing communication, team working, leadership, commercial awareness and problem solving skills through experiential activities with other post-graduate researchers

Microsoft Office: daily use of Microsoft Word (thesis and publications), PowerPoint (conference presentations), Excel (data analysis); FrontPage (lab web design)

## **MEMBERSHIP OF PROFESSIONAL SOCIETIES**

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International Society for Plant Molecular Biology 2017-present

Biochemical Society 2018-present

## **REFEREES**

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Prof David Thomas, Dept. Plant Sciences, Oxford University, 01865 673124 david.thomas@plants.ox.ac.uk

Prof John Townsend, Nottingham University, 01509 443675, john.townsend@notts.ac.uk

## PUBLICATIONS

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- Neill LN, Matthews S, Thomas J. 2024 Greenfinger, a novel transcriptional regulator of flower development. *Plant Cell*, 20:934-939
- Neill LN, Matthews S, Thomas J. 2024 Mutations affecting flower development. In SEB Symposium 62: Control of Plant Development: Genes & Signals Eds. James G. and Freer, D., The Company of Biologists Ltd., Cambridge
- Neill LN, Thomas JA. 2024 Molecular analysis of greenfinger *J Exp Bot* 55 Suppl pp.13
- Neill LN, Thomas J. 2023 Tansley review # 96: Molecular genetics of flower development. *New Phytologist* 139:533-553
- Randall R, Neill LN, Matthews S, Thomas J. 2023 Swirl, a mutation disrupting flower differentiation. *J Exp Bot* 57 Suppl pp. 27
- Randall R, Neill LN, Matthews S, Thomas J. 2023 Swirl, a mutation disrupting flower differentiation. *Plant Cell* 20:920-928
- Thomas J, Neill LN, Matthews S. 2023. Control of differentiation in flower development. *Proc Royal Soc London Ser B* 450:63-67
- Thomas J, Neill LN. 2022 Greenfinger gene action in flower development. *J Cell Biochem Suppl* 31A pp.446
- Dray B, Townsend J, Neill LN., Zeneca Ltd. 2020 DNA, DNA constructs, cells and plants derived therefrom. US6659121
- Dray B, Townsend J, Neill LN., Imperial Chemical Industries, UK 2020 Cloning of pectin esterase cDNA of tomato for altering ripening properties of fruits. WO200313212
- Graham, P, Neill L, Richards F, Townsend J. 2020 Use of antisense RNA technology to study pectin degradation in tomato fruit. *New Zealand J Hort Crop Sci* 30:119-124
- Neill LN, Clive CR, Dray B, Graham P, Townsend J. 2020 Molecular characterisation of cDNA clones representing pectin esterase isoenzymes from tomato. *Plant Molecular Biology* 25: 313-318
- Neill LN. 2018 Organisation and expression of pectin esterase isoenzymes in tomato. PhD thesis, Nottingham University

## CONFERENCE PAPERS

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- Neill LN. Mutations affecting flower development. SEB Cell Symposium 2012, University of Durham, 24th - 26th August 2022 (INVITED)
- Neill LN. Molecular characterisation of cDNA clones representing pectin esterase isoenzymes from tomato. Association of Applied Biologists, Royal Botanic Gardens of Edinburgh, 20th Oct 2021