

David Alexander Burnett

Date of Birth: 2nd November 1993 Nationality: British
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I am a **biochemist** with research interests in the production and development of plant virus based nanotechnologies. As a PhD student at the University of St Andrews my project focuses on the development of enzyme coated nanoparticles derived from plant virus capsid proteins. I aim to develop a system capable of presenting enzymatic pathways on stable and re-usable particles with the hope of being able to produce these **pathways on a particle** on a large scale.

Education

PhD, University of St Andrews, Scotland, Professor R.J.M Goss & Dr Jens Tilsner

September 2017 (Expected Completion May 2021)

Plant Virus Derived Nanotechnologies and Enzymatic Nanoparticles

Masters in Biochemistry, MBioChem, University of St Andrews, Scotland

2012-2017 Final year project (2016-17): “**Identification and characterisation of adiponectin binding and fatty acid oxidation proteins in adipose tissue form *Trypanosoma brucei***”

Placement year project (2015-16): “**Development of a novel viral RNA imaging system in plants**”

Granted the Dean’s List Award in 2013 and 2014

Pre-University Qualifications, British School Muscat, Oman

2005-2012 A-Level: Biology (A*), Chemistry (A), Geography (A), Mathematics (C)

GCSE: Two A* grades, Six A grades

Employment Record

Assistant Warden, St Regulus Hall, University of St Andrews

September 2017-August 2019

Pastoral care, community development and emergency contact for undergraduate students in halls.

Research Intern, Cell and Molecular Science, The James Hutton Institute

October 2015- August 2016

Research project under the supervision of Dr Jens Tilsner as part of a placement year.

Funding Awarded

2017-2020 PhD Project funding awarded by the University of St Andrews and the James Hutton Institute

2015-2016 Stipend and lab expenses for a yearlong project from the Mains of Loirston Charitable Trust

Research Exposure

Publications

Burnett, D.A., Lichius A., Tilsner, J., (2020). [Forthcoming] RNA imaging with RNase-inactivated Csy4 in plants and filamentous fungi. In: M. Heinlein, ed. *RNA Tagging: Methods and Protocols*. USA, Springer.

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Michailidou, F., **Burnett, D.A.**, Sharma, S.V., Van Lanen, S.G., Goss, R.J.M., (2020). [Forthcoming] Natural Products Incorporating Pyrimidine Nucleosides. In: C. Byrne, R., Boobalan. *Comprehensive Natural Products III: Chemistry and Biology*.

Presentations

Talk- Plant Virus Derived Nanotechnologies-*James Hutton Postgraduate Colloquium*, Perth, 2018

Talk- Plant Virus Derived Nanotechnologies-*Virology Lunches*, St Andrews, 2018

Poster-Viral RNA Imaging and MxA Resistance in Plants-*Crop Protection in Northern Britain*, Dundee, 2016.

Highlighted Skills

- **Protein biology:** Protein expression, purification, enzymatic assay development and ELISA.
- **Microscopy:** Experience with both electron and confocal laser scanning microscopy.
- **Cloning and PCR:** Extensive experience with Gateway, NEBuilder and traditional cloning methods. Practiced with qPCR, RT-PCR and regular PCR techniques.
- **Plant Virus Manipulation:** Purification, agroinfiltration, bombardment and handling of infected material.
- **IT Skills:** Proficient with MS Office suite, ChemDraw, electronic lab books and *in silico* tools for sequence manipulation including VectorNTI, Benchling and SerialCloner. Some experience with Linux based bioinformatics tools.

Additional Skills and Interests

- **Sport:** Competing at national level in Quidditch (Team Scotland). Hobbies include hiking and racquet sports.
- **Driving:** Clean category B driving license.
- **Additional qualifications:** Duke of Edinburgh Gold Award, National Pool Lifeguard Qualification (expired), St Johns Ambulance First Aider (expired).