

Stephen Wallace

Lecturer in Biotechnology

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PROFESSIONAL EXPERIENCE

University of Edinburgh , School of Biological Sciences, Edinburgh, UK <i>Principle Investigator and Lecturer in Biotechnology</i>	2017-present
University of Cambridge , Department of Chemistry, Cambridge, UK <i>Marie Curie International Research Fellow (return phase)</i> , Advisor: Prof. Steven V. Ley CBE FRS FMedSci	2016-2017
Massachusetts Institute of Technology , Department of Chemical Engineering, Cambridge, MA, USA <i>Visiting Postdoctoral Research Associate</i> , Advisor: Prof. Kristala L. J. Prather	2015-2016
Harvard University , Department of Chemistry and Chemical Biology, Cambridge, MA, USA <i>Marie Curie International Research Fellow (outgoing phase)</i> , Advisor: Prof. Emily P. Balskus	2014-2016
MRC Laboratory of Molecular Biology , Centre for Chemical and Synthetic Biology, Cambridge, UK	2012-2014

EDUCATION

University College, University of Oxford , Oxford, UK <i>DPhil. Organic Chemistry</i> , Advisor: Prof. Martin D. Smith	2008-2012
University of Edinburgh , Edinburgh, UK <i>MChem. Medicinal and Biological Chemistry with Industrial Experience</i> , 1st class honors (1st in class)	2004-2008

ADDITIONAL RESEARCH EXPERIENCE

University of Edinburgh , Department of Chemistry, Edinburgh, UK <i>Masters Research Student</i> , Advisor: Dr Alison N. Hulme	2007-2008
GlaxoSmithKline Medicines Research Centre , Discovery Medicinal Chemistry, Stevenage, UK <i>Industrial Placement Student</i> , Advisor: Dr Ian Churcher	2006-2007
University of Edinburgh , Department of Chemistry, Edinburgh, UK <i>Summer Research Assistant</i> , Advisor: Prof. Peter J. Sadler FRS FRSE	2006

AWARDS AND ACHIEVEMENTS

Visiting Research Associate, Darwin College - University of Cambridge	2016
Marie Curie International Postdoctoral Fellowship for Career Development - The European Commission	2014-2017
MRC Postdoctoral Career Development Fellowship - Medical Research Council	2012-2014
AstraZeneca-Sponsored Graduate Symposium Winner - University of Oxford	2011
SET for Britain Finalist for Britain's early-stage researchers in science - Houses of Parliament, London	2011
National Postgraduate Prize in Organic Chemistry - Eli Lilly	2010
National Poster Competition Winner - Pfizer	2010
Younger Members' Poster Symposium Winner - Royal Society of Chemistry	2010
Eli Lilly Prize in Organic Chemistry (<i>for excellence in 1st year postgraduate study</i>) - University of Oxford	2010
Lang Scholarship (<i>for the most distinguished performance in the MChem. degree</i>) - University of Edinburgh	2008
Bronze Award in Medicinal Chemistry - GlaxoSmithKline	2007
Bronze Award in Synthetic Chemistry - GlaxoSmithKline	2007

PUBLICATIONS

- S. Wallace**, E. P. Balskus "Designer micelles accelerate flux through engineered metabolism in *E. coli* and support biocompatible chemistry" *Angew. Chem. Int. Ed.* **2016**, 55, 6023.
- S. Wallace**, E. P. Balskus "Interfacing microbial styrene production with a biocompatible cyclopropanation reaction" *Angew. Chem. Int. Ed.* **2015**, 54, 7106.
- S. Wallace**, E. E. Shultz, E. P. Balskus "Using non-enzymatic chemistry to influence microbial metabolism" *Curr. Opin. Chem. Biol.* **2015**, 25, 71.
- S. Wallace**, J. W. Chin "Strain-promoted sydnone bicyclo-[6.1.0]-nonyne cycloaddition" *Chem. Sci.* **2014**, 5, 1742 (featured on the inside front cover: *Chem. Sci.* **2014**, 5, 1664, cover artwork by **S. Wallace** and P. Margiotta).
- S. Wallace**, E. P. Balskus "Opportunities for merging chemical and biological synthesis" *Curr. Opin. Biotechnol.* **2014**, 30, 1.
- S. Chu, **S. Wallace**, M. D. Smith "A cascade strategy enables a total synthesis of (–)-Gephyrotoxin" *Angew. Chem. Int. Ed.* **2014**, 53, 1 (featured as a "Hot Paper").

- A. Darko, **S. Wallace**, O. Dmitrenko, M. M. Machovina, R. A. Mehl, J. W. Chin, J. M. Fox “*Conformationally strained trans-cyclooctene with improved stability and excellent reactivity in tetrazine ligation*” *Chem. Sci.* **2014**, 5, 3370.
- K. Wang, A. Sachdeva, D. J. Cox, N. W. Wilf, **S. Wallace**, R. A. Mehl, J. W. Chin “*Optimized orthogonal translation of unnatural amino acids enables spontaneous protein double-labelling and FRET*” *Nat. Chem.* **2014**, 6, 393.
- K. Lang, L. Davis, **S. Wallace**, M. Mahesh, D. J. Cox, M. L. Blackman, J. M. Fox, J. W. Chin “*Genetic encoding of bicyclononynes and trans-cyclooctenes for site-specific protein labelling in vitro and in live mammalian cells via fluorogenic Diels-Alder reactions*” *J. Am. Chem. Soc.* **2012**, 134, 10317.
- L. R. Donaldson, **S. Wallace**, D. Haigh, E. E. Paton, A. N. Hulme “*Rapid synthesis and zebrafish evaluation of a phenanthridine-based small molecule library*” *Org. Biomol. Chem.* **2011**, 9, 2233.

ORAL AND POSTER PRESENTATIONS

- S. Wallace** “*From natural product synthesis to slime biology: researching at the interface of chemistry and biology*” Department of Pure & Applied Chemistry, University of Strathclyde, Glasgow, UK, May 2016 (*invited talk*).
- S. Wallace** “*Micelles, microbes and molecules: interfacing non-enzymatic chemistry with engineered microorganisms*” Oxford Chemical Biology Colloquium, Chemistry Research Laboratory, University of Oxford, UK, May 2016 (*invited talk*).
- S. Wallace**, E. P. Balskus “*Biocompatible cyclopropanation*” Boston Symposium on Organic and Biological Chemistry, Merck Research Laboratories, Boston, MA, USA, 2015 (*invited talk*).
- S. Wallace**, E. P. Balskus “*Interfacing microbial styrene production with a biocompatible cyclopropanation reaction*” BIOTRANS, Vienna University of Technology, Vienna, Austria, 2015 (*poster*).
- S. Wallace**, E. P. Balskus, “*Interfacing microbial styrene production with a biocompatible cyclopropanation reaction*” Synthetic Biology: Engineering, Evolution and Design (SEED), Boston, MA, USA, 2015 (*poster*).
- S. Wallace**, E. P. Balskus “*Cyclopropane synthesis using cooperative engineered microbial metabolism and biocompatible transition metal catalysis*” Boston Symposium on Organic and Biological Chemistry, Merck Research Laboratories, Boston, MA, USA, 2014 (*poster*).
- S. Wallace**, E. P. Balskus “*Synthetic chemistry in the presence of microorganisms*” Novartis Institute for Biomedical Research, Cambridge, MA, USA, 2014 (*poster*).
- S. Wallace**, J. W. Chin “*The rapid and site-specific labelling of proteins in live cells*” Protein and Nucleic Acid Chemistry Symposium, MRC Laboratory of Molecular Biology, Cambridge, UK, 2013 (*invited talk*).
- S. Wallace**, M. D. Smith “*A cascade approach towards the gephyrotoxins*” SCI Fine Chemical Group South Region Postgraduate Organic Chemistry Symposium, University of Bath, UK, 2011 (*talk*).
- S. Wallace**, M. D. Smith “*A cascade approach towards the gephyrotoxins*” American Chemical Society National Meeting and Exposition, Anaheim, CA, USA, 2011 (*talk*).
- S. Wallace**, M. D. Smith “*Reaction cascades in the synthesis of bioactive natural products*” SET For Britain final, Houses of Parliament, London, UK, 2011 (*poster*).
- S. Wallace**, M. D. Smith “*A cascade approach towards the gephyrotoxins*” National Pfizer Poster Symposium, Royal Society of Chemistry, Burlington House, London, UK, 2010 (*poster*).

OUTREACH ACTIVITIES

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| Harvard University , Department of Chemistry and Chemical Biology
EXPLORATIONS science day for high school students (<i>talk and lab demonstration</i>) | 2014-2015 |
| LMB Laboratory of Molecular Biology , Cambridge, UK
Science Open Day, Cambridge, UK, 2013 (<i>lab demonstration</i>) | 2013 |
| University of Oxford , Department of Chemistry
Member of the Organic Chemistry Outreach Team (<i>talks, tutorials and lab demonstrations</i>) | 2009-2012 |
| S. Wallace “ <i>Bathrachotoxin</i> ” Royal Society of Chemistry, Chemistry in it’s Element, <i>Series Two</i> (<i>podcast</i>) | 2014 |
| S. Wallace “ <i>Diphenyl Oxylate</i> ” Royal Society of Chemistry, Chemistry in it’s Element, <i>Series Two</i> (<i>podcast</i>) | 2014 |
| S. Wallace “ <i>Phenylthiocarbamide</i> ” Royal Society of Chemistry, Chemistry in it’s Element, <i>Series Two</i> (<i>podcast</i>) | 2013 |

REFEREES

Professor Steven V. Ley CBEFRS FMedSci, Director of Research, Department of Chemistry, University of Cambridge, UK. Email: svl1000@cam.ac.uk. Tel no. +44(0) 1223 336398.

Professor Emily P. Balskus, Morris Kahn Associate Professor of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, USA. Email: balskus@chemistry.harvard.edu. Tel. no. +1(617) 4969921.

Professor Jason W. Chin FMedSci, Director of the Centre for Chemical and Synthetic Biology, MRC Laboratory of Molecular Biology, Cambridge, UK. Email: chin@mrc-lmb.cam.ac.uk. Tel. no. +44(0) 1223 402115.

Professor Martin D. Smith, Director of the EPSRC Centre in Synthesis for Biology and Medicine, Chemistry Research Laboratory, University of Oxford, Oxford, UK. Email: martin.smith@chem.ox.ac.uk. Tel no. +44(0) 1865 285103.