Professor Paul Alan Hoskisson BSc (hons) PhD FRSB

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Employment

May 2018 -	**University of Strathclyde**
Present.	Professor of Molecular Microbiology
September 2016 –	**University of Strathclyde**
April 2018.	Reader in Molecular Microbiology
May 2013 –	**University of Strathclyde**
August 2016.	Senior lecturer in Microbiology
February 2007-	**University of Strathclyde.**
April 2013.	Lecturer in Microbiology
October 2004-	**University of Aberdeen, Aberdeen.**
February 2007.	Post-doctoral Research Fellow.
October 2001-	**John Innes Centre, Colney, Norwich.**
September 2004.	Post-doctoral Research Fellow.
July 1997-September 1998.	**Evans Vaccines Ltd., Speke, Liverpool.**
	Development of Flumist, nasal Influenza vaccine.

Educational Details:

September 1998-	**Liverpool John Moores University,**
October 2001.	Doctor of Philosophy (PhD).
	'Growth, development and antibiotic production in the actinomycete *Micronomospora echinospora*'
September 1995-	**Liverpool John Moores University**,
July 1997.	Byrom Street, Liverpool.
	Upper Second Class (2.i), BSc (Hons) in Applied Microbiology.

Professional memberships, Awards and editorial duties

Elected as a Fellow of the Royal Society of Biology (FRSB) in 2016; Member of the Royal Society of Edinburgh Young Academy of Scotland (elected 2014); Member of BBSRC Pool of Experts; Member of the Microbiology Society, the American Society of Microbiology, Royal Society of Chemistry and the Biochemical Society. Royal Society of Biology Council Member (elected 2017-2021), Microbiology Society governing Council member (2007-2016). Chair of Microbiology Society Communications Committee (2012-2016). Managing editor for *Antonie van Leeuwenhoek International Journal of Microbiology.* Editorial board member for *Nature Scientific Reports, Nature Scientific Data, Microbial Genomics.* Former Editor in Chief of *Microbiology Today* (2008-2012). Fellow of the Higher Education Academy.

Grants awarded

BBSRC Responsive Mode Grant (**Grant No.:** BB/T004126/1; 2019-2022). Re-engineering robustness in to industrial antibiotic producing Streptomyces strains. £430,234 . **As PI.**

BBSRC Responsive Mode Grant (**Grant No.:** BB/T001038/1; 2019-2022). Chance and Necessity: Evolution guided antibiotic improvement and discovery (**Grant No.:** BB/T001038/1). £612,447. **As PI.**

Biotechnology and Biological Sciences Research Council (BBSRC)/IbioIC DTP Studentship (2019-2022). Understanding the development of industrial *Streptomyces* strain lineages. **As Principal Investigator and in collaboration with GSK.** £101,000.

Royal Society Newton Fund (2019-2021). Evolutionary genomics for the sustainable exploitation of microbes from Mexican niches: from biodiversity to application. **As PI** £111,000. **CoI** Dr Francisco Barona-Gomez, Langebio, Mexico.

BBSRC Business Innovation Grant (2018). Sequencing high-value *Streptomyces* strains from industrial lineages. As PI. £9,932 (plus matched funding from GSK)

BBSRC Tools and Resource Development Grant (2018-2020). Grant No.: BB/R022054/1Combatting antimicrobial resistance through new software for natural product discovery. PI -Dr Simon Rogers (University

of Glasgow); CoI – Dr Kate Duncan (University of Strathclyde), **CoI – Dr P A Hoskisson** and CoI Dr Ronan Daly (University of Glasgow). £174, 913.

British Council/Newton Fund Institutional Links Grant (2018-2020). 'MycoChip – A rapid on chip antibiotic susceptibility test for *Mycobacterium tuberculosis*'. As Co-Investigator with Dr Damion Corrigan (Biomedical Engineering). £149,513.

BBSRC Network in Industrial Biotechnology and Bioenergy in Natural products discovery and bioengineering network (2018): 'Can epistasis be exploited to understand industrial antibiotic production in *Streptomyces*?'. £66,747. **As Principal Investigator.**

Longitude Prize - National Endowment for Science, Technology and the Arts (2017-2018): **'**Microplate - shrinking culture plates onto a microchip for a rapid antibiotic susceptibility test'. £10,000. **As Co-Investigator with Dr Damion Corrigan (Biomedical Engineering) & Dr Will Shu (Biomedical Engineering).**

IBiolC Micro-Company Accelerator Grant (2017-2018): 'Global Feedstocks' with 3f bio Ltd. £225,000. **As Principal Investigator.**

Innovate UK (iUK), Industrial Biotechnology Catalyst Grant (2016-2019). 'Enhancing the yield of industrial Actinomycete fermentations' with GSK. £1,550,193. **As Principal Investigator.**

IBiolC Studentship (2016-2018): 'Development of *Streptomyces* strains to utilise sustainable feedstocks in fermentations' **As Principal Investigator.** With GSK. £82,093.

IBiolC Exemplar Project (2016-2017): '3f Diversity' with 3f bio Ltd. £149,859. **As Principal Investigator.**

Tenovus Scotland (2015-2016): Determining the molecular-level origin of Isoniazid susceptibility and resistance in *Mycobacterium tuberculosis* using two-dimensional infrared spectroscopy. £11,000. **As Co-Investigator with Dr Niall Simpson & Dr Neil Hunt (Physics).**

Arthritis Research UK Microbiome Pathfinder Award (2015-2017): For a project entitled 'MIMIC – Do parasitic worms and their secreted immunomodulators protect against musculoskeletal disease by impacting on the host microbiome?' PI -Prof M Harnett (University of Glasgow); CoI – Prof W Harnett (University of Strathclyde) & **CoI – Dr P A Hoskisson**. £296,835

Natural Environment Research Council (NERC)-Responsive Mode Grant (2015-2018). **Grant No:** (NE/M001415/1). 'Clash of the Kingdoms; How the quest for nutrients leads to pathogenicity'. £546, 355. **As Principal Investigator.**

SULSA Drug Discovery Programme Studentship Award (2012-2016) for a Project entitled 'Synthetic biology routes to new Pyrrole amide antibiotics' in collaboration with Dr Glenn Burley (University of Strathclyde, Chemistry Dept) & Dr Daniel Walker (University of Glasgow). £88, 000. **As Principal Investigator.**

EPSRC 'Bridging the gap' Grant (2012; in collaboration with Dr Glenn Burley, Chemistry, University of Strathclyde). Project entitled 'Synthetic biology of Pyrrole amide antibiotics' £19, 000

Biochemical Society Vacation Studentship (2012). For a project entitled 'Ultrafast 2D-IR Spectroscopy of InhA' for 8 weeks; £1800. **As Principal Investigator.**

KIAT (Korea Institute for the Advancement of Technology) For a project entitled 'Discovery of a new class of Antibiotics' In collaboration with Prof Alan Harvey. £27, 000.

KTA Award (2011-2012 – 1 year). 'A multidisciplinary approach to protein function and exploitation' **(KTA with Diamond Light Source Ltd, Oxford). PI** Dr Neil Hunt (Physics, Strathclyde, **CI** Dr Nick Tucker (SIPBS, Strathclyde) and Dr Martin Walsh (Diamond Light Source). £15,379

Leverhulme Trust Research Grant (2011-2014). **Grant No: RPG-248.** 'New Tools for Biomolecular characterisation: Ultrafast 2D-IR Spectroscopy**.** £170, 803. **As Principal Investigator.**

BBSRC Case Studentship Award in collaboration with Diamond Light Source (2011-2015) 'Structural dynamics of bacterial GntR regulatory proteins' £78, 000

Society for General Microbiology International Development fund (2011-2012) for Microbiology capacity building in Sudan. £6000. **As Principal Investigator.**

Medical Research Scotland (2011-2013) **Grant No: 422 FRG**. 'Non-toxigenic *Corynebacterium diphtheriae*; A pathogen of emerging importance in Scotland'. £120,229. **As Principal Investigator.**

BioSkape Studentship Award (2011-2015) for a Project entitled 'Systems approaches to metabolic engineering in Streptomycetes: The PEP-pyruvate-oxaloacetate node of primary metabolism' in collaboration with Professor Iain Hunter (University of Strathclyde) and Dr H Petkovic, Acies Bio (Slovenia). £78,000. **As Principal Investigator.**

Society for General Microbiology President's fund for Research visits (2009) for a Project entitled 'Understanding the role of Mce genes in *Streptomyces;* Do they facilitate plant-*Streptomyces* interactions?' £1980. **As Principal Investigator.**

Society for General Microbiology Vacation studentship (2009) for a Project entitled 'Developing a novel *Caenorhabditis elegans* model to study *Corynebacterium diphtheriae'*. £1900. **As Principal Investigator.**

British Council Research Networks Project No. 7/2008 (2008). For a project entitled In vitro transposon mutagenesis of a Type-II polyketide gene cluster from an Amycolatopsis sp. genomic library in collaboration with Dr Hrvoje Petkovic, University of Ljubljana, Slovenia. £5000. **As Principal Investigator.**

Scottish Universities Life Science Alliance Prize Studentship (2008-2012) for a Project entitled 'Modeling metabolic switching in the differentiating bacterium, *Streptomyces coelicolor*' in collaboration with Professor Maggie Smith (University of Aberdeen) and Dr Steven Webb (Department of Mathematics, University of Strathclyde). £58,000. **As Principal Investigator.**

Society for General Microbiology Vacation studentship (2007) for a Project entitled 'Investigating conserved cell division genes in *Streptomyces coelicolor'*. £1800. **As Principal Investigator.**

Society for General Microbiology Vacation studentship (2005) for a Project entitled 'Characterisation of a dicarboxylate catabolic system in *Streptomyces coelicolor* and its effect of differentiation and antibiotic production'. £1800. **As Principal Investigator.**

Oral Conference Presentations

Hoskisson, P. A. (2019). Evolution of *Streptomyces* – how to cope with life in a complex environment. *Swiss Microbial Ecology Meeting, 29 January – 1st February 2019.*

Hoskisson, P. A. (2018). Expanding primary metabolism provides robustness for survival and antibiotic production by *Streptomyces* in soil*. International Conference of Agriculture and Natural Resources, Bangkok, Thailand 25th-29th April 2018.* Invited Keynote Speaker.

Hoskisson, P. A. (2017). Frogs, Foam and foiling antibiotic resistant infections. *CliniSys Winter User group Conference, Birmingham 10th November 2017.*

Hoskisson, P. A. (2017). Generating metabolic robustness for antibiotic biosynthesis though the expansion of primary metabolism in *Streptomyces. Molecular Microbiology 30th Anniversary meeting/M4 Meeting, University of Birmingham, 14th September 2017.*

Hoskisson, P. A. (2017). Small Talk: Communicating microbiology in the digital age. *Swiss Society for Microbiology Meeting, 1st September 2017.*

Hoskisson, P. A., (2016). Future prospects: inspiring STEM undergraduates to tackle the AMR crisis. *Society for Applied Microbiology Antimicrobial Resistance Meeting, London, 24th November 2016.*

Hoskisson, P. A., (2016). Gene expansion in the Phosphoenolpyruvate-Pyruvate-Oxaloacetate metabolic node as a target for metabolic engineering. *BBSRC NPRONET NIBB Annual Meeting, 25th & 26th October 2016, Manchester.*

Hoskisson, P. A., (2016). Gene expansion in the Phosphoenolpyruvate-Pyruvate-Oxaloacetate metabolic node as a target for metabolic engineering. *13th International symposium on Genetics of Industrial Microorganisms, 16th-20th October 2016, Wuhan, China.*

Hoskisson, P. A., (2016). Why is soil such a good hunting ground for antibiotics? Annual Meeting of the Microbiology Society, Liverpool, 21st March 2016.

Hoskisson, P. A., (2015). Small World Initiative. Society for General Microbiology Annual Meeting, Birmingham 30th March-2nd April 2015.

Hoskisson, P. A., (2014). 2D-IR of cell wall biosynthetic enzymes; In 'New methods workshop' at 16th International Symposium on the Biology of Actinomycetes, Izmir, Turkey. *8-12th October 2014.*

Hoskisson, P. A., (2014). Disruption of a Cell Wall Deacetylase in the Pathogen *Corynebacterium diphtheriae* Affects Overall Cell Wall Architecture. 16th International Symposium on the Biology of Actinomycetes, Izmir, Turkey. *8-12th October 2014.*

Hoskisson, P. A., (2014). Evolution of Publishing. *Society for General Microbiology, Spring Meeting, Liverpool, 14th-17th April 2014.*

Hoskisson, P. A., (2013). Secrets from the genomes of a human pathogenic S*treptomyces*. *Society for Applied Microbiology Summer Meeting, Cardiff, London, 1st-4th July 2013.*

Hoskisson, P. A. (2012). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Actinobacteria within Soils: Capacities for mutualism, symbiosis and pathogenesis Symposium October 25th-28th 2012, Muenster, Germany.*

Hoskisson, P. A., (2012). Shifting trends in pathogen dynamics on a changing planet. *Society for Applied Microbiology Winter Meeting, The Royal Society, London, 11th January 2012.*

Hoskisson, P. A., (2011). Secrets from the genome of a human pathogenic S*treptomyces.* 16th International Symposium on the Biology of Actinomycetes, Vallarta Mexico. *11-15th December 2011.*

Hoskisson, P. A., (2011). Duplication and evolution of a key sporulation gene in the differentiating bacterium, *Streptomyces coelicolor. Scottish Phylogeny discussion group, University of Edinburgh 26th October 2011.*

Hoskisson, P. A., (2011). Developing molecular tools for the study of Actinomycetoma. *At the 5th International conference on Mycetoma, Khartoum, Sudan, 1st-4th April 2011.*

Hoskisson, P. A., (2010). Modelling models in models. *University of Edinburgh 26th September 2011. Stochastic Modelling of Microbial Processes Meeting.*

Hoskisson, P. A., (2009). Elucidating the function of the Mce cluster in *Streptomyces*. *Abstract at the Biology of Streptomycetes, Munster, Germany, October 2009.*

Hoskisson, P. A., (2007). Academic snakes and ladders. *160th meeting of the Society for General Microbiology, University of Manchester, Manchester, 28th March 2007.*

Hoskisson, P. A., Moir, L., & Smith, M. C. M. (2006). Bacteria-Phage arms race: Insights from the Phage growth limitation system of *Streptomyces coelicolor* A3(2). *Abstract at the ESF-EMBO Bacterial systems biology meeting, San Fileu de Giuxol, Spain, October 2006.*

Hoskisson, P. A., Moir, L., & Smith, M. C. M. (2006). New Insights in to the Phage growth limitation system of *Streptomyces coelicolor* A3(2). *Abstract at the UK Streptomyces Dissemination Meeting, John Innes Centre, 10th-11th January 2006.*

Hoskisson, P. A., Moir, L., & Smith, M. C. M. (2005). The Phage growth limitation system of *Streptomyces coelicolor* A3(2). *Abstract at the BBSRC Integrated Epigenetics initiative grant holders meeting, Bristol, 16-17th June 2005.*

Hoskisson, P. A., Findley, K., & Buttner, M. J. (2003). A novel transcriptional repressor required for development in *Streptomyces coelicolor* A3(2). *Abstract at the Bacterial Genetics and Phage meeting, University of Wisconsin, Madison, USA, 5th -10th August 2003.*

Hoskisson, P. A., Findley, K., & Buttner, M. J. (2003). A novel repressor required for development in *Streptomyces coelicolor* A3(2). *Abstract at the UK Streptomyces Dissemination Meeting, University of Surrey, 22nd -23rd July 2003.*

Invited Seminars

Hoskisson, P. A. (2019). Aurodox – a Type II secretion system inhibitor from *Streptomyces*. *Seminar at The Quadram Institute, Norwich, 14th November 2019.*

Hoskisson, P. A. (2019). Evolution of *Streptomyces* – how to cope with life in a complex environment. *Seminar at University of Birmingham, 5th February 2019.*

Hoskisson, P. A. (2018). Expanding primary metabolism provides robustness for survival and antibiotic production by *Streptomyces* in soil*. University of Geneva, Switzerland 4th June 2018.*

Hoskisson, P. A. (2018). Linking primary metabolism and antibiotic production in *Streptomyces. University of East Anglia, 30th May 2018.*

Hoskisson, P. A. (2018). Expanding primary metabolism provides robustness for survival and antibiotic production by *Streptomyces* in soil*. Kasetsart University, Bangkok, Thailand 25th-29th April 2018.*

Hoskisson, P. A. (2017). Generating metabolic robustness for antibiotic biosynthesis though the expansion of primary metabolism in *Streptomyces. Seminar at Georgia Institute of Technology, Atlanta, USA, 26th October 2017.*

Hoskisson, P. A. (2017). Generating metabolic robustness for antibiotic biosynthesis though the expansion of primary metabolism in *Streptomyces. Seminar at Imperial College London, 18th September 2017.*

Hoskisson, P. A. (2017). Tackling AMR using high tech and low-tech approaches. *Seminar at Aston University, 11th May 2017.*

Hoskisson, P. A. (2016). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Seminar at Edgehill University, 18th January 2016.*

Hoskisson, P. A. (2014). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Seminar at University of Warwick, 18th November 2014.*

Hoskisson, P. A. (2014). Beyond the Toxin: Genomics of *Corynebacterium diphtheriae*. *Seminar at University of Nottingham, 19th March 2014.*

Hoskisson, P. A. (2013). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Seminar at Napier University, 15th May 2013.*

Hoskisson, P. A. (2012). Genomics of *Corynebacterium diphtheriae*. *Seminar at University of Birmingham, 20th November 2012.*

Hoskisson, P. A. (2012). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Seminar at University of West of Scotland, 14th September 2012.*

Hoskisson, P. A. (2012). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Seminar at University of Aberdeen, 12th March 2012.*

Hoskisson, P. A. (2011). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Seminar at Universidad Nacional Autónoma de México,* 9th December 2011.

Hoskisson, P. A. (2011). Evolution of Virulence in Actinobacteria; the strange case of the *mce* genes. *Seminar at University of Erlangen, Invited speaker at Graduate Student symposium, Banz Castle, Germany* 18th July 2011.

Hoskisson, P. A. (2011). Modelling metabolic switching in *Streptomyces*. *Seminar series at University of Frankfurt*, 24th May 2011.

Hoskisson, P. A. (2010). Understanding interactions in actinomycetes. *Seminar series at Instituto de Agricultura Sostenible (CSIC) Cordoba*, Spain, 17th September 2010.

Hoskisson, P. A. (2009). Phage Growth limitation system of *Streptomyces* and *Vibrio*. *Seminar series at University of Swansea, UK, 14th May 2009*

Hoskisson, P. A. (2009). Bacteria-Phage arms race. *Institute Seminar series at University of Northumbria, UK, 3rd April 2009.*

Hoskisson, P. A. (2009). Bacteria-Phage arms race. *Institute Seminar series at University of Glasgow, UK, February 2009.*

Hoskisson, P. A. (2008). Bacteria-Phage arms race. *Institute Seminar series at University of Dundee, UK, 6th February 2008.*

Hoskisson, P. A. (2006). Bacteria-Phage arms race: Insights from the Phage growth limitation system of *Streptomyces coelicolor* A3(2). *Departmental Seminar series at University of Erlangen, Germany, 31st October 2006.*

Hoskisson, P. A., (2004). The hair-raising complexity of streptomycete developmental biology. *Departmental Seminar series at University of Newcastle-upon-Tyne, 10th June 2004.*

Hoskisson, P. A., (2003) Developmental Biology of *Streptomyces coelicolor* A3(2). *Departmental Seminar series at Liverpool John Moores University, 13th November 2003.*

Grant Panel Memberships

BBSRC Pool of Experts – 2015-2022

BBSRC Panel D member February 2018

Royal Society - Wolfson Laboratory refurbishment Grant Scheme Panel Member 2014

Royal Society – Newton Fellowship Grant Scheme Panel Member 2014-2017

American Philosophical Society – Franklin Research Grants Assessment Panel 2012-onwards.

Italian Ministry of Health Clinical and Biomedical Research Grant Assessment Panel 2015-2018.

Natural Environment Research Council (NERC) College of experts 2014-2017.

European Science Foundation College of experts 2018-2023.