



Colworth Prize Lecture Nomination Form

Awarded annually to an individual who has demonstrated outstanding contribution to translational microbiology

The Colworth Prize Lecture award is a competitive process. Please complete all sections of the form below and attach a copy of the requested supporting documentation required by the rules of the award – see the Microbiology Society website for details: www.microbiologysociety.org/prizelectures

The Microbiology Society supports [Equality and Diversity](#) and asks that those making nominations consider the entire talent pool available.

We appreciate the time and effort it takes to complete a final nomination so please note that, whilst recipients of prizes cannot be nominated again for the same prize, unsuccessful nominations can be resubmitted for one more round the following year.

1. Nominee

I wish to nominate:

Name Sharon Peacock

Address [redacted]

Email [redacted]

Subject area Clinical Microbiology

2. Nomination information

(a) Distinction of candidate's work and contribution to microbiology. If appropriate, please suggest others who might be able to comment authoritatively.

This section should include but is not limited to significant discoveries in the candidate's field, invention or development of new tools and technologies and evidence of great originality or foresight. Max 1000 words.

Sharon Peacock has made a seminal contribution to the application of microbial genomics to clinical microbiology. Initially trained as a clinician, Prof Peacock has previously worked extensively on melioidosis, and its causative agent *Burkholderia pseudomallei*, in South-East Asia. Her contributions included clinical epidemiology; investigation, diagnosis and treatment; routes of infection and preventive guidelines; molecular epidemiology; and environmental sampling.

Prof Peacock's involvement in microbial genomics began when she was the clinical lead on the first study to use next-generation sequencing approaches to analyse the local and global transmission patterns of a bacterial pathogen, in this case *Staphylococcus aureus* (1). Prof. Peacock rapidly realised the power of these techniques in medical microbiology, and led a series of studies demonstrating that microbial genomics could be used in a clinical setting, first demonstrating that sequence data could resolve an outbreak at the ward level (2), and subsequently that it could direct an intervention into an ongoing outbreak (3), all in *S. aureus*.

Prof. Peacock has recognised the potential impact of these techniques in many other transmissible pathogens, and crucially

that realising this potential will require the construction of contextual databases detailing the population structure and antibiotic resistance determinants of many pathogens. She has partnered with the Sanger Institute, and the British Society of Antimicrobial Chemotherapy to generate these databases from systematic surveys, working on *Mycobacterium tuberculosis*, *Enterobacter*, *Enterococcus*, *E. coli*, *Klebsiella*, *Serratia* and many others. She has used this analysis to demonstrate local and national transmission patterns for many of these pathogens (5-10). She has also published new techniques and tools for sample generation, sequencing and antibiotic resistance determination from sequence (11-14).

1. Harris *et al.* 2010 *Science* **327**:469. 2. Koser *et al.* 2012 *N Engl J Med.* **366**:2267. 3. Harris *et al.* 2013 *Lancet Infect Dis.* **13**:130. 4. Raven *et al.* 2017 *Clin Infect Dis.* 64:886. 5. Moradigaravand *et al.* 2017 *MBio.* **8**:e01976-16. 6. Harrison *et al.* 2016 *Genome Med.* **8**:102. 7. Raven *et al.* 2016 *Nat Microbiol.* **1**:15033. 8. Raven *et al.* 2016 *Genome Res.* **26**:1388. 9. Moradigaravand *et al.* 2016 *Genome Res.* **26**:1101. 10. Reuter *et al.* 2016 *Genome Res.* **26**:263. 11. Judge *et al.* 2015 *J Antimicrob Chemother.* **70**:2775. 12. Koser *et al.* 2014 *J Antimicrob Chemother.* **69**:1275. 13. Koser *et al.* 2013 *N Engl J Med.* **369**:290. 14. Reuter *et al.* 2013 *JAMA Intern Med.* **173**:1397

(b) Explicitly outline how the candidate's work is translational and the generation of impact or potential impact of resulting from the work.

This section should include industrial applications, contribution to policy development, a step change in public perception or other aspect that affects the wider society. Max 1000 words.

Microbial genomics is poised to make a significant impact in clinical microbiology; increasing the speed and resolution of both transmission tracking and outbreak analysis, and the direct prediction of antibiotic resistance. The latter will be of considerable importance in tackling the increasing threat of antibiotic resistant organisms, by enabling proper antibiotic stewardship.

Prof. Peacock has not been content to just provide the academic underpinnings for this, but has been actively involved in implementation at the coalface, working with local hospitals and regional microbiology services to implement sequence-based approaches to clinical microbiology. In addition, she has been working at the political level to change policy, both within the public sector, with the Department of Health, and within the charity sector at the Wellcome Trust.

Prof. Peacock is the epitome of a translational microbiologist, and her work has had, and will continue to have, a demonstrable impact at many levels, from patient care, through hospital and regional outbreak investigation, to policy on antibiotic resistance and stewardship.

(c) Any other comments or information you feel relevant to the nomination, for example, contribution to the Society. *Max 1000 words.*

Prof. Peacock was elected to the Academy of Medical Sciences in 2013, the American Academy of Microbiology in 2014, EMBO in 2015, and made a CBE for services to medical microbiology in 2015.

Bibliography – please supply the following data from ISI web of knowledge <http://wok.mimas.ac.uk>.

Number of papers (results found) 401

Sum of the times cited 13788

Average citation per item 34

h-index 49

3. Statement

Full rules of Society awards can be found on our website: www.microbiologysociety.org/prizelectures.

Please read them carefully before confirming that by submitting a nomination you agree to abide by the rules of the scheme.

I confirm that I have read, understood and agree to abide by the rules of the award scheme. *(please put 'X' in*

box to confirm).

4. Nominator(s)

I confirm that I am a Member of the Microbiology Society (*please put 'X' in box to confirm*).

I confirm that the nominee is aware of the nomination and accepts all the terms and conditions of the prizes as set out on the website: www.microbiologysociety.org/prizelectures (*please put 'X' in box to confirm*).

Nominated by:

Name Julian Parkhill Email [redacted]

Date 2nd June 2017

Seconded by:

Name [redacted] Email [redacted]

Date 7th June 2017