PERSONAL STATEMENT

I am a lecturer in microbiology and infectious disease at Swansea University Medical School. My research interests focus on the role for novel antimicrobial agents against pathogenic bacteria found in clinical infections, particularly polymicrobial and chronic infections such as those seen in wounds, diabetic foot ulcers and cystic fibrosis lungs.

I am highly experienced in working with manuka honey and have elucidated the effects of this on cellular morphology, physiology, biofilm prevention/disruption, adhesion/invasion, virulence expression and proteomic/genetic expression profiles of pathogenic organisms including *Staphylococcus aureus* and *Pseudomonas aeruginosa*. The potential for natural antimicrobial agents to improve the efficacy of conventional antibiotics against antibiotic resistant bacteria is also an area I have expertise in.

I currently supervise undergraduate and post graduate students including 2 PhD students a KESS2 MRES student as well as a Postdoctoral Researcher. I have developed a collaborative multidisciplinary approach to research allowing me to work with colleagues in industry, academia and the NHS to address clinical challenges. Since moving to Swansea University, I have begun to investigate the effect of novel antimicrobial agents on biofilms containing both bacterial and fungal wound isolates, as well as the impact of these mixed species biofilms on the host immune response.

EMPLOYMENT

**Lecturer of Microbiology and Infectious Disease**
Swansea University Medical School
October 2017 – current.

**Lecturer of Microbiology**
Cardiff Metropolitan University

**Post Doctoral Researcher**
University of Wales Institute Cardiff/
Cardiff Metropolitan University
October 2009 – Dec 2012

EDUCATION:

2006-2009  PhD – The effect of manuka honey of Staphylococcus aureus, Cardiff Metropolitan University
2004 -2005  MSc – Biomedical Science and Medical Microbiology, University of Wales Cardiff
2001 -2004  BSc (Hons) – Microbiology, University of Wales Aberystwyth

PUBLICATIONS

- Roberts AEL, Powell LC, Pritchard MF, Thomas DW, **Jenkins RE** (2019) Anti-pseudomonas activity of manuka honey and antibiotics in a specialized ex vivo model simulating cystic fibrosis lung infection. Frontiers in Microbiology, 10 1-10.


• Jenkins RE, Cooper RA. (2012) Improving antibiotic activity against wound pathogens with manuka honey in In Vitro. PLOS one, 7 (9) 1-9 e45600.


ORAL PRESENTATIONS

• 2019 ‘Natural product antimicrobials: source and mechanisms’ Antimicrobial Drug Discovery Traditional and Historical Medicine, 29th October.

• 2019 ‘The medicinal potential of honey’ Bristol Botanic Gardens, Bee and Pollination Festival, 1st September.

• 2019 ‘Antibacterial effect of manuka honey’ Leeds University Seminar Series, 3rd April

• 2019 ‘Antibacterial effect of manuka honey - Clinical potential’ British Bee Veterinary Association (BSAVA Satellite Meeting) 2nd April

• 2018 ‘The future use of honey in infection control’ Essex Beekeepers Annual Meeting, Chelmsford, 3rd November

• 2018 ‘Bees in Medicine’ Southampton and District Bee Keepers 15th February

• 2017 ‘The Antibacterial activity of manuka honey’ School of Pharmacy & Life Sciences at Robert Gordon University, Aberdeen 6th December

• 2017 ‘Honey in medical settings’ Winchester Bee Keepers 14th November

• 2017 ‘Honey; a magical medicine’ Bristol Botanic Gardens Science Picnic and Bee & Pollination Festival 24th August and 2nd September.

• 2017 ‘Honey a magical medicine?’ Soapbox Science Swansea 8th July.

• 2017 ‘Ancient honey for modern day infection’ Redesigning Resilience LCEE-NRN conference 4th July.

• 2017 ‘Microbial resistance and antibiotic alternatives’ Science and the Assembly 6th June.
• 2016 ‘Manuka honey as an antimicrobial agent’ DSTL and Public Health England lunch time seminar series 22nd November.
• 2016 ‘A pilot study to investigate the association between antibiotic use and incidence of antibiotic resistant bacteria in diabetic foot ulcers’ FDUK 15th November.
• 2016 ‘From the lab to the clinic – how the science of wound care can improve outcomes of patients’ at Bringing legs to life - The Royal College of Physicians and Surgeons of Glasgow, 7th June.
• 2014 “Antimicrobial overview of Manuka Honey” All Wales CF Club Meeting, 12th November.
• 2014 “Manuka honey as an Antimicrobial Agent” at ithree Institute lunchtime seminar series at University of Technology Sydney 15th July.
• 2014 “Manuka Honey as an Antimicrobial Agent” at the School of Natural Sciences lunch time seminar series at NUI Galway 10th January.
• 2010 “Honey and other products of Bee Colonies” at Bees, food and human health meeting for The Royal Society of Medicine in London 30th September 2010.
• 2008 An overview of the properties of medical honey compared to table honey” at 3rd Congress of the World Union of Wound Healing Societies held in Toronto between 4-8 June 2008”. Invited speaker on Derma Science exhibition stand.
• 2008 “A laboratory survey of the antimicrobial properties of honey-containing dressings” at 18th Conference of the European Wound Management Association held in Lisbon between 14-16 May 2008.

SELECTED POSTER PRESENTATIONS

• Brown HL and Jenkins RJ (2017) ‘Manuka honey reduces viability and virulence in Burkholderia cenocepacia’ at the 40th European Cystic Fibrosis Conference 7-10th June.
• Roberts AEL, Jenkins RE (2016) ‘The viability of Burkholderia cenocepacia isolates is decreased by manuka honey’ at Microbiology Society Annual Conference, Liverpool 21-24th March.

• Roberts AEL, Jenkins RE (2015) ‘Honey for CF’ at Welsh Microbiological Association winter meeting 27th-28th November. **Winner of Best Poster Prize £100.**

• Shreedhar C and Jenkins RE (2014) ‘Effect of antibiotics in combination with manuka honey on Streptococcus pyogenes’ Australian Society for Microbiology Annual Scientific Meeting held in Melbourne between 6th - 9th July.

• Jenkins RE and Cooper RA (2013) ‘Inhibiting biofilms of methicillin resistant Staphylococcus aureus and Pseudomonas aeruginosa using combinations of manuka honey and antibiotics’ Wounds UK Annual Conference held in Harrogate between 11th – 13th November.


• Jenkins RE, Kazimoto T, Cooper RA (2011) ‘Interaction of antibiotics combined with manuka honey on MRSA’ at Society for General Microbiology Spring meeting held in Harrogate between 11-14th April.

**GRANTS AND AWARDS**

• **Waterloo Foundation (£125,292) Award for Postdoctoral Researcher** ‘Manuka honey as a treatment for chronic cystic fibrosis infection’ January 2020.

• **NBIC (£40,919) Award for Postdoctoral Researcher** ‘The effect of electrospun nanofibre diameter and conditioning film on controlling active biofilm formation in wound dressings. January 2020

• **KESS II MRES (£14,587) ‘Novel Anti-Microbial metallic surfaces for infection control’** September 2018.

• **Hodge Foundation (£302,000) Award for Postdoctoral Researcher** ‘The role of Manuka honey in the Management of Cystic Fibrosis’. April 2018.

• **Society for Applied Microbiology, Students into Work Grant (£2496)** ‘Development of a novel antibacterial agent for wound pathogens’ May 2017.


• **NRRN-LCEE Research Development Fund Award (£8910)** ‘Redesigning Resilience; Ancient Remedies for Modern Problems Workshop. February 2017

• **Antimicrobial Resistance (AMR) Interdisciplinary 6 month proof-of-concept project (£25,000)** ‘To characterize the volatile metabolites for bio-profiling infecting organisms in chronic wounds in order to evaluate their potential for use as biomarkers of AMR and biofilm infection’. In partnership with collaborators from Loughborough January 2017.

• **Welsh Crucible small grant scheme (£9720)** ‘Redesigning Resilience’ in partnership with collaborators from Swansea University, Bangor University and Aberystwyth University November 2016

• **KESS II PhD (£52,020)** ‘Application of novel bioactives against commonly isolated wound pathogens’ August 2016

• **Cardiff Metropolitan University Vacation Studentship (£1,996)** ‘Modulating viability and virulence in a zoonotic pathogen using manuka honey’ June 2016

• **Welsh Crucible Alumni 2016 - Welsh Crucible is an award-winning programme of personal, professional and leadership development for the future research leaders of Wales.**


• **Accelerator Fund, Cardiff Metropolitan University (£4910)** ‘Testing the inhibitory efficacy of manuka honey using an ex vivo porcine lung model; an environment that mimics the cystic fibrosis lung’ December 2015.

• **URGO Foundation DFU Innovation award 2015 (£18,000)** ‘A feasibility study to investigate the relationship between antibiotic use and the incidence of two representative bacteria in antibiotic resistance in diabetic foot ulcers’ November 2015.

• **NEEM – Commercial funding (£20,000)** ‘Honey and bioactives against wound pathogens’ October 2015.

• **Microbiology Society Education and Outreach Grant 2015 (£1000)** “Grab and Go Microbiology” October 2015.

• **Cardiff Metropolitan University Employability Scholarship (£2,200)** ‘Optimisation of the Robbins biofilm device to assess the efficacy of antimicrobials against bacterial biofilms’ May 2015.
• **SGM Harry Smith Vacation Studentship (£1,880)** ‘The susceptibility of *Staphylococcus pseudointermedius* and *Staphylococcus hyicus* to medical grade manuka honey alone and in combination with antibiotics’ April 2015.

• **Cardiff Metropolitan University, Capital Equipment Fund (£7449)** ‘Robbins Device system’ February 2015.

• **Jane Hodge Foundation (£161,000) Award** for Postdoctoral Researcher ‘The role of Manuka honey in the Management of Cystic Fibrosis’. October 2014.

• **Waterloo Foundation (£156,000) Award** for Postdoctoral Researcher ‘The role of DNaseI combined with honey or antibiotics in the management of respiratory infections in cystic fibrosis’ October 2014.

• **Health Technology Challenge Scheme (£25,000)** South East Wales Academic Health Science Partnership grant with Cardiff University ‘Development of new delivery system for polyvinylpyrrolidone’. January 2014.

• **SFAM public engagement grant (£2500)** October 2013.

• **Strategic Insight Partnership Award (£3000)** to visit Westway Health Galway November 2013.

• **UWIC Research and Enterprise Fund (£50,000)** Collaborative grant with University of Warwick (Dr. K. J. Purdy) for the characterisation of polymicrobial biofilms at the structural and molecular level September 2011.


**Total Funding secured to date: £912,587**

**PROFESSIONAL DEVELOPMENT**

• I am currently the Editor in Chief for “Microbiology Today” the publication of the Microbiology Society and a member of the Societies Communications Committee.

• Chair at the Microbiology Society focussed meeting on Antimicrobial drug discovery from traditional and historical medicine Oct 2019.

• I am the Secretary for the South Wales branch of the Royal Society of Biology, involved in organising various events for members covering topics such as; infection, synthetic biology, careers, science communication and evolution.

• I have a strong interest in promoting engagement and understanding of science and as such I am an active STEM ambassador, my outreach activities include; multiple presentations to Bee Keeping Society meetings (Avon, Totnes, Southampton, Devon, Western Supermare, Ulster). Debate days for ‘First Campus’ schools and as part of Science in Schools week I have taken a ‘grab and go microbiology kit’ to local primary schools to interact with children on topics such as hand hygiene and antimicrobial resistance. I have presented a stand in the Science tent at the National Eisteddfod 2014, based around the use of honey as an antibacterial agent.

• Invited guest on ‘The Sunday Supplement’ with Vaughan Roderick 2019. (BBC Radio Wales)

• I have written up some of my work for 'The Conversation' which currently has over 28,600 reads. Other media coverage of my research includes:
  - Press release, Society for General Microbiology Spring Meeting, Harrogate - April 2011. Coverage focused on using honey to treat infections with MRSA, Pseudomonas aeruginosa and Streptococcus pyogenes, and appeared in over 100 national and international newspapers and news websites.
  - National Geographic - 2009 “How honey curbs MRSA superbug”