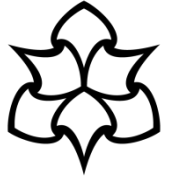




PARTNERSHIP BUILDING WORKSHOP

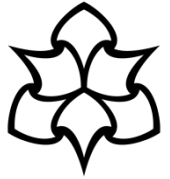
Mark Enright

**Manchester Metropolitan
University**



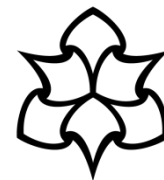
Research Interests and Expertise

- **Antimicrobial-resistant infections (AMR)**
- Genomic evolution and epidemiology – Staphylococci / Klebsiella / Pseudomonas.....
- Novel anti-infective treatments especially bacteriophage, host / pathogen biology
- Wound healing
- Photo- Sono- Dynamic Therapies
- Synthetic phage biology



CV

- 1994 - 1997 Postdoctoral research fellow - University of Sussex, UK
- 1997 - 2000 Postdoctoral research fellow - University of Oxford, UK
- 2000 – 2005 Reader / Senior research fellow, University of Bath, UK
- 2005 – 2007 Reader, Department of Infectious Disease Epidemiology, Imperial College London, UK
- 2007 – 2010 Professor, Department of Infectious Disease Epidemiology, Faculty of Medicine, Imperial College London, UK
- 2008 – 2010 Director, Intelligent Fabric Technologies PLC
- 2010 – 2012 Research Director, AmpliPhi Biosciences Corporation, Colworth Science Park, Sharnbrook, UK and Virginia BioTechnology Research Park, Richmond, USA
- 2011 – 2014 Visiting Professor, University of Bath, UK
- 2013 – 2015 Consultant and Lead advisor to Synthetic Genomics Vaccine Inc. La Jolla, CA. USA
- 2015 – date Professor of Medical Microbiology, School of Healthcare Sciences, Manchester Metropolitan University, UK



Research Interests and Expertise – recent papers. Bacteria.

Correlation between phenotypic antibiotic susceptibility and the resistome in *Pseudomonas aeruginosa*

Magali Jaillard^{a,b}, Alex van Belkum^{a,*}, Kyle C. Cady^c, David Creely^a, Dee Shortridge^a, Bernadette Blanc^a, E. Magda Barbu^c, W. Michael Dunne Jr^a, Gilles Zambardi^a, Mark Enright^d, Nathalie Mugnier^a, Christophe Le Priol^a, Stéphane Schicklin^a, Ghislaine Guigon^a, Jean-Baptiste Veyrieras^a

^a bioMérieux SA, Marcy-l'Étoile, France

^b University Lyon 1, Villeurbanne, France

^c Synthetic Genomics, Inc., La Jolla, CA, USA

^d Manchester Metropolitan University, Manchester, UK



Int J Antimicrob Agents. 2017 Aug;50(2):210-218.

RESEARCH ARTICLE



Phylogenetic Distribution of CRISPR-Cas Systems in Antibiotic-Resistant *Pseudomonas aeruginosa*

Alex van Belkum,^a Leah B. Soriaga,^b Matthew C. LaFave,^b Srividya Akella,^b Jean-Baptiste Veyrieras,^a E. Magda Barbu,^b Dee Shortridge,^a Bernadette Blanc,^a Gregory Hannum,^b Gilles Zambardi,^a Kristofer Miller,^b Mark C. Enright,^c Nathalie Mugnier,^a Daniel Brami,^b Stéphane Schicklin,^a Martina Felderman,^b Ariel S. Schwartz,^b Toby H. Richardson,^b Todd C. Peterson,^b Bolyn Hubby,^b Kyle C. Cady^b

bioMérieux, Marcy l'Étoile, France^a; Synthetic Genomics, Inc., La Jolla, California, USA^b; Manchester Metropolitan University, Manchester, United Kingdom^c

A.V.B., L.B.S., and K.C.C. contributed equally to this work.

MBio. 2015 Nov 24;6(6):e01796-15.

D) Phylogenetic view of integron cassettes

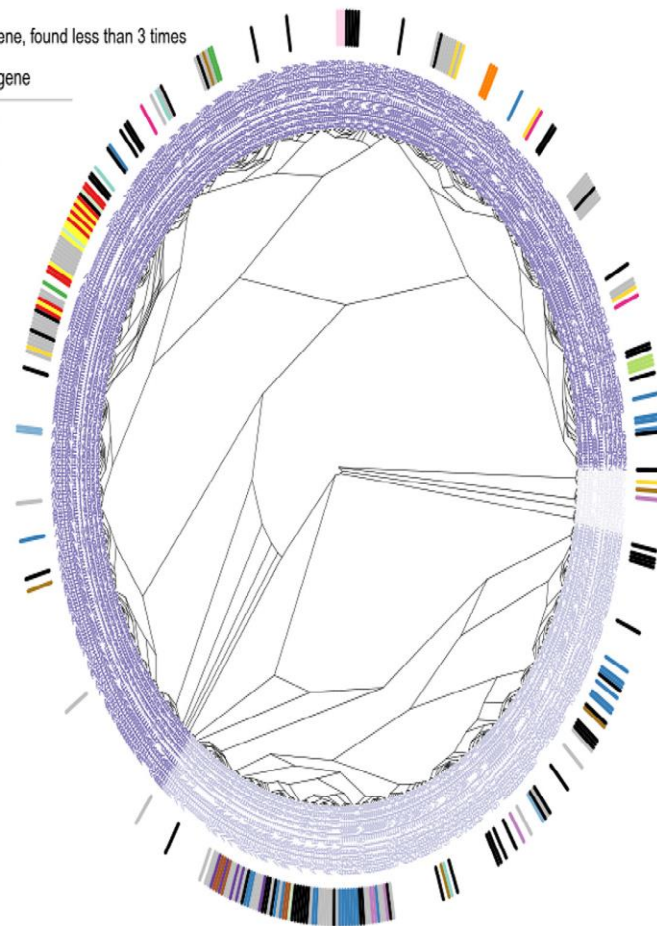
— Integron w/ AR gene, found less than 3 times

— Integron w/o AR gene

■ Group 1 (n=433)

■ Group 2 (n=221)

■ Group 3 (n=18)





Research Interests and Expertise – recent papers. Phage.

1. An essential role for the baseplate protein Gp45 in phage adsorption to Staphylococcus aureus

By: Li, Xuehua; Koc, Cengiz; Kuehner, Petra; et al.

SCIENTIFIC REPORTS Volume: 6 Article Number: 26455 Published: MAY 23 2016

2. A novel bacteriophage cocktail reduces and disperses Pseudomonas aeruginosa biofilms under static and flow conditions

By: Alves, Diana R.; Perez-Esteban, P.; Kot, W.; et al.

MICROBIAL BIOTECHNOLOGY Volume: 9 Issue: 1 Pages: 61-74 Published: JAN 2016

3. Assessing phage therapy against Pseudomonas aeruginosa using a Galleria mellonella infection model

By: Beeton, M. L.; Alves, D. R.; Enright, M. C.

INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS Volume: 46 Issue: 2 Pages: 196-200 Published: AUG 2015

4. Triggered Release of Bacteriophage K from Agarose/Hyaluronan Hydrogel Matrixes by Staphylococcus aureus Virulence Factors

By: Bean, Jessica E.; Alves, Diana R.; Laabei, Maisem; et al.

CHEMISTRY OF MATERIALS Volume: 26 Issue: 24 Pages: 7201-7208 Published: DEC 23 2014

5. Combined Use of Bacteriophage K and a Novel Bacteriophage To Reduce Staphylococcus aureus Biofilm Formation

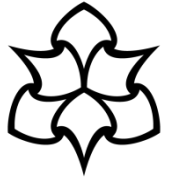
By: Alves, D. R.; Gaudion, A.; Bean, J. E.; et al.

APPLIED AND ENVIRONMENTAL MICROBIOLOGY Volume: 80 Issue: 21 Pages: 6694-6703 Published: NOV 2014

6. Enhancement of the Antimicrobial Properties of Bacteriophage-K via Stabilization using Oil-in-Water Nano-Emulsions

By: Esteban, Patricia Perez; Alves, Diana R.; Enright, Mark C.; et al.

BIOTECHNOLOGY PROGRESS Volume: 30 Issue: 4 Pages: 932-944 Published: JUL-AUG 2014



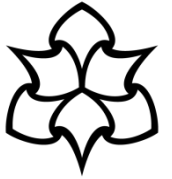
Priority Areas / Possible Future Projects

- Control of Bacterial Infections in Animals and Plants
 - Novel therapies
 - Phage-based biocontrol – phage / phage enzymes
 - Photo- / Sono-dynamic Therapy for Veterinary Applications
- Epidemiology of Bacterial Pathogens of Animals and Plants
 - Bacterial and Phage Genomics
 - Host / Pathogen interactions
 - Resistome
 - Phenotype / Genotype Analyses
 - Molecular Diagnostics



MMU Expertise

- Applied Microbiology
- Biofilm / Surface Microbiology
- Environmental Microbiology
- Genomics and Metagenomics
- Novel Antimicrobials / Surface Coatings / Antimicrobial Fabrics
- Graphene Chemistry
- Novel Diagnostics – Printed Circuits



Issues / Challenges

- Characterisation of bacterial populations in Brazilian settings using genomics
- Virulence and AMR resistome
- Biocontrol of plant pathogenic bacteria
- Phage use in controlling bovine mastitis