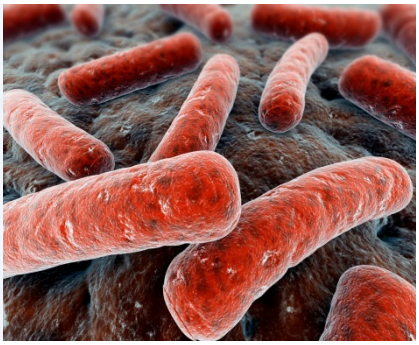
Identifying the Pathway to Diagnostic Development

Hosted by The Medical Research Council UK on behalf of the Joint Programming Initiative on Antimicrobial Resistance

Delegates Information Pack

Monday 11th May 2015

Westminster Conference Centre, 1 Victoria Street, London, SW1H 0ET



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Welcome and Background to the Workshop

Thank you for attending the Joint Programming Initiative for Antimicrobial Resistance (JPIAMR) Diagnostic Workshop hosted by the Medical Research Council (MRC) UK.

About the JPIAMR

Antimicrobial resistance (AMR) is a global and multifaceted problem demanding comprehensive and creative solutions, which require actions from many sectors of society. The JPIAMR was established in 2011 to address the major societal challenge presented by resistant bacteria. This initiative brings together 19 Member Countries, comprising of 17 European countries (Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Poland, Romania, Spain, Sweden, Switzerland, Turkey, the United Kingdom), Canada, and Israel, and 2 observers, Estonia and Argentina.

Based on an agreed vision on how the major societal challenge of AMR can be addressed, the JPIAMR launched its Strategic Research Agenda[1] (SRA) in April 2014. This is a dynamic framework upon which the JPI will launch joint actions and use to guide research activity and investment to reduce the burden of AMR by 2040. Six priority topics are identified in the SRA (*Figure 1*), one of these priority topics being diagnostics.

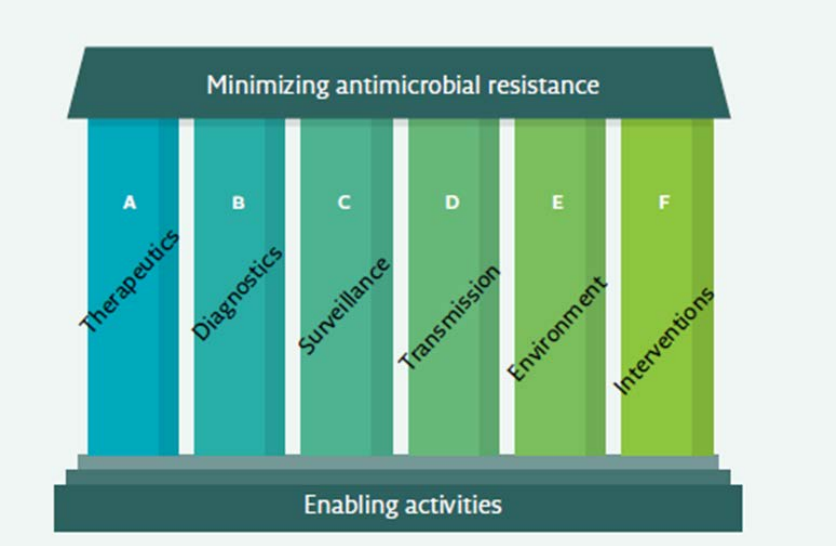

Figure 1: A schematic outline of the priority topics identified in the JPI AMR strategic research agenda.

[1] http://www.jpiamr.eu/wp-content/uploads/2014/05/SRA1_JPIAMR.pdf

About the MRC

The MRC is one of seven research councils responsible for investing public money in research in the UK to advance knowledge and generate new ideas which lead to a productive economy, healthy society, and contribute to a sustainable world. The research councils, along with other UK funders, have been working together to identify a number of research opportunities and challenges to tackle the rise in AMR. A new cross-council initiative[2] was launched in June 2014 and identified four key themes to target current and future investments in AMR. These themes will foster collaboration between diverse disciplines, share information across the public and private sector, allow access to tools, compound libraries, datasets and screens to acquire new insights into the emergence and spread of antibiotic resistant bacteria, the evolution of resistance and to drive the discovery of new diagnostic, preventative and therapeutic strategies for bacterial infections particularly antibiotic resistant strains.

The four themes identified were:

Theme 1: Understanding resistant bacteria

Theme 2: Accelerating therapeutic and diagnostics development

Theme 3: Understanding the real world interactions

Theme 4: Behaviour within and beyond the health care setting

Under Theme 2 of this initiative the UK Research Councils aim to fund research to develop rapid, point of care diagnostics and innovative diagnostic data linkages for community settings to monitor spread.

The MRC represent the UK on the JPIAMR and is an active member of its management board and steering committee.

Background to the Workshop

The MRC and the JPIAMR are committed to coordinating and disseminating research into AMR. As part of this, we organised this joint workshop focussing on 'Identifying the Pathway to Diagnostic Development'. There have already been a number of global scientific meetings on this subject plus there are a number of on-going funding initiatives. Therefore, the focus of the workshop will be on how to bring this funding and research together to get potential new diagnostics into use, and to identify the challenges and opportunities along the way. Participating on the day will be experts in diagnostics, from academia, industry, regulation, policy, and funding organisations.

We have structured the workshop around 3 main sessions; Setting the Scene (human, animal, and industry settings), Identifying the Challenges and Potential Solutions Needed for Diagnostic Development, and the Funding Landscape.

[2] http://www.mrc.ac.uk/research/initiatives/antimicrobial-resistance/tackling-amr-a-cross-council-initiative/

Each session will have a Q & A with the Panel and there will be a breakout session to further discuss points raised. To maximise the impact of the event, your attendance at all three sessions and active participation will be greatly appreciated. We encourage you to come armed with questions and ideas.

By identifying future challenges and opportunities in diagnostic development, the JPIAMR members can work together to find ways to address key issues and identify the next steps, for example, development of a road map for AMR diagnostic development.

We thank you in advance for your active participation, and we hope it will be an interesting and useful day for all involved.

Meeting Information

Date: Monday 11th May 2015

Time: 09:30 – 18:00

Venue: BIS Westminster Conference Centre, 1 Victoria Street, London, SW1H 0ET
+44 (0)20 7215 6789

Facilities: Lift access to all of the building. Manned cloakroom – please leave coats and overnight bags with the attendant. No smoking inside the building.

Travel:

BUS: Numbers 11, 24, 148, 211 stop right in front of the building. Other bus routes pass nearby. Visit Transport for London for further information.

UNDERGROUND: 1 Victoria Street in walking distance of Victoria, St James' Park and Westminster stations. Check the TFL website to plan your journey.

RAIL: Victoria, Waterloo and Charging Cross stations are 10 to 20 minutes away by foot or by tube. Schedules are available on the National Rail website.

Queries:

If you should have any queries, please contact:

Ruth Kelly ruth.kelly@headoffice@mrc.ac.uk
Kim Mugford: kim.mugford@headoffice.mrc.ac.uk

Agenda

Time	Item	Speaker / Chair
09:30	Arrival Registration and Refreshments	
10:00	Chairman's Introduction and Welcome	Herman Goossens, *University of Antwerp*
10:20	Session 1: Setting the Scene Presentations: - Good Drugs for Bad Bugs: Can Better Diagnostics Also Make a Difference? (20 minutes) - Current Challenges in Veterinary Clinical Microbiology (20 minutes) - Bringing a Diagnostic to Market- a Story of Success (20 minutes)	Rosanna Peeling, *London School of Hygiene and Tropical Medicine* Peter Damborg, *University of Copenhagen* Jorge Villacian, *Johnson & Johnson*
11:20	Q & A Session (20 minutes)	
11:40	Refreshment Break	
12:00	Session 2: Identifying the Challenges and Potential Solutions Needed for Diagnostic Development Presentations: - Regulation: A Barrier to Diagnostic Development? (20 minutes) - European Regulation: Proposed Changes to the IVD Directive- MHRA's Perspective (20 minutes) - Challenges of Translating Early Stage R&D Towards AMR Diagnostics (15 minutes)	Bryan Allman, *GlaxoSmithKline* Mojisola Ajeneye, *Medicines and Healthcare Products Regulatory Agency* Till Bachmann, *University of Edinburgh*

12:55	Q & A Session (20 minutes) Determine the 4 main challenges and opportunities to discuss in the breakout groups, for example - regulatory challenges - access to resources - challenges in diagnostic validation - new technology on the horizon	Helen Lee, *University of Cambridge*
13:15	Lunch	
14:00 15:00 15:20	Breakout Session (55 minutes) Report Back (25 minutes) Summarise the 4 Key Challenges & Opportunities Across Europe (15 minutes)	Herman Goossens (Chair) Rapporteurs Group Discussion
15:35	Refreshment Break	
15:50 16:35	Session 3: The Funding Landscape Presentations: - Longitude Prize - Conserving Antibiotics for Future Generations (10 minutes) - The Variety of EC Support for Diagnostic Development (15 minutes) - Tackling AMR – A UK Cross Council Initiative (10 minutes) - Innovate UK- Diagnostic Funding (10 minutes) Q & A Session (15 minutes)	 Joshua Ryan-Saha, *Nesta* Arjon Van Hengel, *European Commission* Des Walsh, *Medical Research Council UK* Penny Wilson, *Innovate UK*
16:50	Summary of Next Steps and Close	Herman Goossens
17:00	Drinks Reception - sponsored by JPIAMR	

Delegates Brief

Q & A Sessions with the Panel:

After each session of keynote presentations we will hold a 15-20 minute Q & A session. This is an opportunity to further discuss points raised with the Panel and other participants, but also to raise any new points not previously mentioned.

Breakout Session:

In session 2 we will ask you to discuss the challenges in diagnostic development and highlight the 4 key areas where you believe working across the EU member states could help. This breakout session is an opportunity for delegates to further discuss these challenges and opportunities in diagnostic development and start to identify ways to meet these challenges.

Depending on the discussions, some potential areas for discussion could be:

- Regulatory challenges
- Access to resources: skills/expertise, samples, infrastructure, etc. What else is needed?
- Challenges in diagnostic validation
- New technology on the horizon

Groups will be asked to discuss a particular challenge in more detail. This may well be outside your area of expertise but we are keen to hear a breath of opinions.

Please appoint a member of your group to act as the rapporteur.

Please be clear and concise in your suggestions so the rapporteur can feed this information back to the entire group. Each group has 4-5 minutes to report back on the major issues raised by the group, if a similar point has been mentioned by a previous group please do not repeat it.

Group Discussion:

After the breakout session, there will be a 15 minute group discussion for all groups to come together to develop and further refine the most important ideas on what you think are 'the 4 Key Challenges & Opportunities' in diagnostic development to reduce AMR and how working across the EU may deliver solutions.

Delegates

Mrs Mojisola Ajeneye	
Medicines and Healthcare Products Regulatory Agency Mojisola.Ajeneye@mhra.gsi.gov.uk	
	Moji Ajeneye is a trained Microbiologist, and holds a Post Graduate Certificate in Biomedical Science. In 2002, she joined the Medical Device Agency (MDA) now known as the UK Medicines & Healthcare Products Regulatory Agency – MHRA. She works as a Senior Medical Device Specialist within the IVD team - investigating adverse incidents, providing advice and guidance on the safety, performance and regulation of medical devices. Her role also involves reviewing technical file/dossiers as part of Notified Body Audits. She has also gained experience working with wound care management devices and recently IVF medical devices She enjoys travelling, and is married with two sons.
Dr Bryan Allman	
GlaxoSmithKline bryan.x.allman@gsk.com	
	Bryan Allman's background was the NHS and major IVD companies: development, clinical validation, and trials. He was involved in the development of the European IVD regulations and guidance, and in harmonisation of regulatory requirements through the GHTF (work groups and steering committee). Formerly, he was Director European QA & RA at Abbott Diagnostics, and VP QA & RA at Boston Scientific. He has worked in Belgium, France, Germany, Italy, and the US. After four years as an independent consultant, and course director for an MSc in medical technology regulatory affairs at Cranfield university, he returned to industry as Director Global Regulatory Diagnostics with GSK Vaccines, supporting companion diagnostics programmes.
Professor Dan I. Andersson	
Uppsala University dan.andersson@imbim.uu.se	
	Dan I. Andersson (PhD), Professor in Medical Bacteriology at Uppsala University, Sweden, is a bacterial geneticist and a microbiologist who uses experimental evolution, genetics and mathematical modelling to study bacterial evolution. Current research is focused on the evolution of antibiotic resistance, mechanisms of evolution of new genes by de novo and duplication-divergence mechanisms, constraints on horizontal gene transfer and fitness consequences of mutations. He has supervised 25 PhD students and 10 postdocs and published 150 primary research papers, reviews and book chapters. He is a fellow of the American and European Academies of Microbiology, The Royal Society of Sciences in Uppsala and the Royal Swedish Academy of Sciences.

Dr Till Bachmann
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Till Bachmann is a Reader in Personalised Medicine in Infectious Diseases and Deputy Head of the Division of Infection and Pathway Medicine at The University of Edinburgh. He is an expert in point of care detection of infectious diseases and antimicrobial resistance, conducting research at the interface of biomarkers and novel detection modalities. Currently, he focuses on electrochemical POCTs for CPEs and MRSA, sepsis, UTI, and wound infection, as well as isothermal amplification driven by electrochemistry. Till fulfils a variety of industrial and institutional advisory roles worldwide including the UK Longitude Prize.

Dr Tom Barry
National University of Ireland, Galway, Ireland
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I am the research director of the Nucleic Acid Diagnostics Research Laboratory (NADRL), in Microbiology at NUI Galway. Research interests are primarily focused on the biodiscovery, development and design of platform nucleic acid based diagnostics technologies for the detection and identification of bacterial, yeast and fungal pathogens and contaminants.
I am the lead inventor of the microbial platform nucleic acid based diagnostics, Internal Transcribed Spacer-Probe (bacterial/fungal), RiboSEQ (bacterial), MycoTECH (fungal), MycoSEQ (fungal), MtSEQ (Tuberculosis), RiboTECH (bacterial/fungal) and NucleoSEQ (bacterial) technologies. Many of these technologies are embedded in diagnostics products currently available in the marketplace.

Dr Indra Bergval
Royal Tropical Institute, KIT Biomedical Research
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Indra Bergval, PhD, is a molecular biologist with expertise in microbiology and infectious diseases. Since 2004 she has been working for KIT Biomedical Research, Department of the Royal Tropical Institute (KIT), where her current research focuses on antibiotic resistance in *Mycobacterium tuberculosis*, the etiological agent of tuberculosis (TB). In this curriculum she investigates, amongst others, how and what molecular mechanisms in the bacteria lead to the evolution of (multi)drug-resistant tuberculosis.
Together with (international) colleagues and a Dutch SME she has developed a molecular assay that allows simultaneous detection of multiple informative mutations (e.g. drug resistance and genotype) in the *M. tuberculosis* genome. Currently, several pilot studies evaluating the applicability of this assay for improved tuberculosis control are being performed.

Dr Stefan Börjesson

National Veterinary Institute (SVA), Sweden
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Stefan Börjesson earned his PhD in Medical Microbiology in May 2009 at The Faculty of Health Sciences, Linköping University and his thesis focused on occurrence of Methicillin-Resistant Staphylococcus aureus (MRSA) in wastewater. In August 2009 he got employed at the National Veterinary Institute (SVA), Uppsala where he today holds a position as Senior Researcher and Group coordinator. His research focus on surveillance, epidemiology and zoonotic aspects of antibiotic resistance, with special focus ESBL and pAMpC producing Enterobacteriaceae, MRSA and methicillin-Resistant Staphylococcus pseudintermedius (MRSP). Furthermore, he is involved in the Swedish Veterinary Antimicrobial Resistance Monitoring (SVARM) program.

Dr Arlene C Chua

Medecins Sans Frontieres Access Campaign
Arlene.Chua@geneva.msf.org

Dr Arlene Chua is the Diagnostics Policy Advisor and Antimicrobial Resistance Advisor with MSF Access Campaign based in Geneva. She worked in the field for MSF from 2003 to 2005 and was a board member of MSF HK from 2008-2009. She is an Infectious disease clinician and is Senior Consultant at the Institute of Infectious Diseases and Epidemiology (IIDE), Tan Tock Seng Hospital in Singapore. Her current work in the Access Campaign includes antimicrobial resistance (diagnostics and treatment). Other diagnostics work includes Ebola diagnostics and HIV Genotype Resistance Testing.

Professor William Couet

Inserm and University of Poitiers
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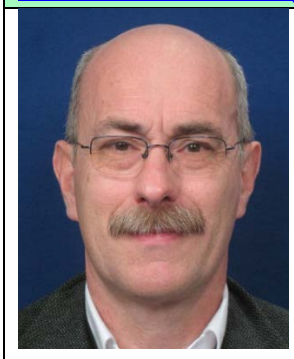

Pr William Couet, is Professor of Clinical Pharmacy and Hospital Practitioner at the Poitiers University Hospital. He is Director of the Inserm Unit U-1070 “Pharmacology of Antimicrobial Agents”. He received his Ph.D. (1985) in pharmacokinetics from the University of Paris XI after conducting his doctoral research with Dr T.N. Tozer at the University of California in San-Francisco. He has co-authored 120 articles and several book chapters and is member of the Editorial Board of Antimicrobial Agents Chemotherapy. He is presently mostly interested in pharmacokinetic-pharmacodynamic (PK-PD) modelling of antibiotics. He is involved in a FP7 European project on colistin (AIDA) and participates to two IMI projects (7^{th} and 9^{th} calls). Pr W Couet has been elected chairman of EPASG (ESCMID PK-PD of Anti-Infectives study group).

Mrs Lisbet Coulton	
Tanwood Consulting Ltd Lisbet.coulton@tanwoodconsulting.com	
	Lisbet Coulton has been in consulting for over 20yrs working with different companies across the healthcare arena. She provides market access services for new medicines, diagnostics and medical devices for use in different therapeutic areas, specialist disease areas and long term conditions. She continues to work with an international network of specialists to deliver projects with both national and global remits. Her early career included commercial roles within pharmaceutical companies, and included launching new anti-infectives for use in both hospitals and the community. She also worked with GR Micro Ltd., specialists in medical and environmental microbiology who provided contract research services for the pharmaceutical industry.
Professor Peter Coyle	
Consultant Virologist Peter.coyle@belfasttrust.hscni.net	
	I am a consultant in clinical virology and past president of the European Society for Clinical Virology. My work supports a broad constituency of health care professionals in the community, hospital sectors and Public Health Medicine. I also have active teaching and research profiles, the latter being both translational and developmental. My research aim is in the development of productive collaborations (clinical, academic & commercial) to address relevant clinical problems and improve patient outcomes. My main field of interest is in the diagnosis and management of respiratory tract infections and of infections related to pregnancy.
Dr Eva Maria Cutiongco- de la Paz	
National Institutes of Health, University of the Philippines Manila ecutiongcodelapaz@post.upm.edu.ph	
	Dr. Eva Maria C. Cutiongco-de la Paz is the Vice Chancellor for Research, University of the Philippines Manila and the Executive Director of the National Institutes of Health. She finished her Doctor of Medicine degree from the UP College of Medicine in 1989 and completed her Pediatric residency at the Philippine General Hospital in 1992. She had her research fellowship in Molecular Genetics at the International Center for Medical Research at the Kobe University Graduate School of Medicine in Japan and took her subspecialty training in Clinical Genetics at The Hospital for Sick Children, University of Toronto, Canada. She was board certified as a fellow by the Canadian College of Medical Geneticists in 2000. She is also the Program Director for the Genomics Health Program of the Philippine Genome Center.

Gregor Czilwik
Hahn Schickard
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Gregor Czilwik studied microsystems engineering, majoring in Life Sciences, at the institute of microsystem technology (IMTEK), University of Freiburg. In 2012 he joined the Lab-on-a-Chip group at Hahn-Schickard. He is working on the development and microfluidic integration of molecular diagnostics for detection of pathogens and antimicorbial resistances on Lab-on-a-Chip-based test carriers at the point-of-care.

Dr Peter Damborg
University of Copenhagen
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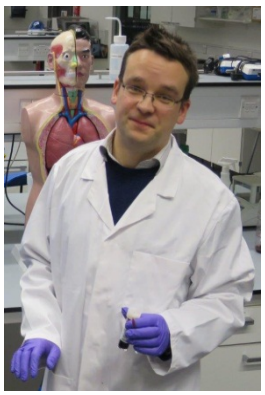
After obtaining the Veterinary Degree in 2004 I completed a PhD on zoonotic enteric bacteria in dogs, and worked as post doc on projects involving antimicrobial resistance in veterinary pathogens. This work and my work as vice head of a veterinary diagnostic laboratory have resulted in several publications on characterization and selection of antimicrobial resistant pathogens of veterinary and zoonotic relevance. Most of my work has been related to companion animals for which limited surveillance of resistance exists compared to humans and food animals. Recently I became secretary of VetCAST, a subgroup of EUCAST aiming to contribute to global standards for antimicrobial susceptibility testing of bacterial pathogens in animals.

Anna Dixon
Atlas Genetics
Anna.Dixon@atlasgenetics.com

Anna Dixon leads several projects at Atlas Genetics including development of novel assays for sexually transmitted infections, hospital acquired infections and oncology as well as research activities aimed at the development of new technologies for rapid nucleic acid tests. A recent focus has been the development of assays for point mutations and SNPs including those relevant to AMR, and particularly related to antibiotic resistance in Neisseria gonorrhoeae an mycoplasma genitalium. Anna joined Atlas in 2007 following a PhD in human genetics at the University of Oxford

Ms Dunja Dreesens	
ZonMw/Maastricht University **Dreesens@zonmw.nl**	
	Funding coordinator of national AMR programme with ZonMw-organisation. ZonMw stands for the Netherlands for Health Research and Development, and is mainly funded by the Ministry of Health. ZonMw also partakes in JPIAMR and in this capacity I lead the Work Package responsible for the Scientific Advisory Board and the Strategic Research Agenda. Before AMR, I my working hours were mainly occupied with clinical practice guidelines. In my PhD research (two days a week) at Maastricht University I still work on guidelines, but then in relation to decisions and choice behaviour. My study background is business economics, social cultural sciences and health sciences.
Mr Stephane Dubreux	
Biomerieux Stephane.dubreux@biomerieux.com	
Dr Alexander Edwards	
University of Reading a.d.edwards@reading.ac.uk	
	Dr Edwards is a co-founder and director of Capillary Film Technology Ltd, a startup established to exploit diagnostic applications for a low cost microfluidic assay platform technology, called Micro Capillary Film. A Lecturer at Reading School of Pharmacy since 2010, Dr. Edwards has 7 years' experience in the field of biochemical engineering (Cambridge, Reading) that follows 8 years background in life science research (CRUK, Cambridge). As well as authoring >20 publications in the fields of immunology, vaccine formulation, and microfluidics, Al is a coinventor of two patent application families currently licensed to UK SMEs, plus co-inventor of a third filed in 2014.

Mr Greg Foster
Enigma Diagnostics
greg.foster@enigmadiagnostics.com

My work at Enigma involves the development of multiplex POC PCR assays for the detection of infectious diseases.

Dr Carmen Galán
INGENASA (INMUNOLOGIA Y GENETICA APLICADA, S.A.)
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Carmen Galán is a Project Manager at INGENASA, currently working on molecular and immunodiagnostics.
She is an experienced molecular biology researcher, with expertise the fields of virology, proteomics, genomics and epigenetics.
Carmen obtained her PhD in 2007 from the Autonomous University of Madrid, working at National Center of Biotechnology (CNB, CSIC) on Molecular Virology & virus-host interaction. Later on she moved for a postdoc in 2009 to Germany, working at Max Planck Institute of Immunobiology and Epigenetics, Freiburg, on genomics and epigenetics. In 2014 she returned to Madrid to complete her education at IE Business School, with an international executive program on Management Fundamentals for Scientists and Researchers. In 2015 she joined INGENASA, a Spanish leading company in molecular and immunodiagnostics.

Dr Sarah Goodchild
Defence Science and Technology Laboratory
sagoodchild@dstl.gov.uk

I have been employed at Dstl since 2004 as a Molecular Biologist with associated expertise in bioelectrochemistry. My research focuses on affinity selection and/or rational design of DNA and protein based reagents for diagnostic and detection platform development. As part of my wider role I am the Project Technical Authority for the Ministry of Defence diagnostics research programme responsible for projects investigating novel platforms and techniques for detection of infectious diseases to inform on delivery of appropriate medical countermeasures.

Professor Herman Goossens
University Hospital Antwerp
Herman.Goossens@uza.be

Professor of Medical Microbiology at the University of Antwerp in Belgium. He published more than 500 full papers in peer-reviewed scientific journals. He is the founder and Chair of the Belgian Antibiotic Policy Co-ordination Committee (BAPCOC). He coordinates several European projects funded by DG Research, DG SANCO, IMI and ECDC, such as RAPP-ID, PREPARE, and LAB-Net of the Combating Bacterial Resistance in Europe project (COMBACTE). He is the founder of the annual European Antibiotic Awareness Day (EAAD). Herman Goossens was elected chair of the Scientific Advisory Board of the Joint Programming Initiative on Antimicrobial Resistance by his peers.

His main fields of research are antibiotic use and resistance, respiratory tract infections, developing rapid and point-of-care diagnostic tests His professional goal is to bridge the gap between basic and clinical research, with a major focus on antibiotic resistance, to enhance the standard of healthcare, public health and professional standards, for the good of the public in large.

Dr Marie Françoise Gros
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Marie-Françoise Gros has a primary degree in Medicine (Grenoble University) and a MBA (Lyon Business School). After a first experience as a medical doctor both in hospital and in private practice (as a General Practitioner), she joined the in vitro diagnostics industry : Abbott Diagnostics where she was in charge of blood banks, and then bioMerieux.
After an experience in strategic marketing (molecular diagnostics/ DNA chip technology), she took the responsibility of Corporate Director of Medical Affairs and Communications.
As Head of Medical Affairs, she is managing a team that is in charge of clinical trials, assessment of medical value of new product opportunities, medical & scientific communication, Medical Scientific Liaison, product safety/ patient risk management and Global Health.
Her primary focus and interest is antimicrobial resistance: she coordinates the AMR initiatives within the company.

Dr Marianne Gunnell

University of Turku
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Marianne Gunell (36 years), PhD (Medical Microbiology), MSc (Biochemistry). Currently I work as Research Scientist in Medical Microbiology and Immunology unit, University of Turku. The focus of my research is in rapid diagnostics of clinically important pathogens, especially antimicrobial resistant bacteria, and antimicrobial properties of different molecular structures.
I have previously worked as an expert on Antimicrobial Resistance in Antimicrobial Resistance unit, National Institute for Health and Welfare and in AMR surveillance unit, European Centre for Disease Prevention and Control (ECDC) and have focused both on antibiotic resistance mechanisms (Enterobacteriaceae) and resistance epidemiology.

Dr Matt Hicks

Linear Diagnostics Ltd
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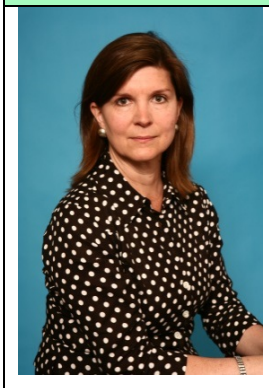
Dr Matt Hicks is the Chief Technology Officer for Linear Diagnostics Ltd (LDL), which he co-founded. He has 20 years' experience in biochemistry and biophysics in academic and commercial sectors. He has published over 40 research papers and patents and has a BSc in Biochemistry (Bristol) and a DPhil (Sussex). Subsequent post-doctoral positions in drug design and molecular interactions led to a Wellcome VIP Fellowship. His research is varied and includes diagnostics development and synthetic biology. Matthew was also Chair of an Interest Group for the RSC (2007-2014) and is on the Executive Committee of the British Biophysical Society. Since October 2011 he has concentrated on the commercial development work in Abingdon Health and LDL.

Professor Alison Holmes

Imperial College London



Alison is a Professor of Infectious Diseases and Director of the NIHR Health Protection Research Unit for HCAI and AMR at Imperial College London. Within the NHS she is a Director of Infection Prevention Control and Associate Medical Director.

Dr Dag Ilver	
Acreo Swedish ICT DAG.ILVER@ACREO.SE	
	Dag Ilver is a senior research scientist and project manager at ACREO Swedish ICT, within the field of bio- and chemical sensors. He received his PhD in 1998 in Medical Microbiology at Umeå University. His research has been focused on studies of receptor-ligand interactions between pathogenic bacteria and host cells and how these interactions promote tissue tropism and development of disease. His post-doc period was spent at Chiron Vaccines in Italy (today a part of Novartis) and Medical Biochemistry at Gothenburg University. He joined the research institute in 2004 and he has published approximately 20 papers in peer reviewed scientific journals or book chapters and is co-inventor to six patents. One company, Helicure, has been formed based on the patents.
Ruth Kelly	
Medical Research Council Ruth.Kelly@headoffice.mrc.ac.uk	
	Ruth is the science project manager for AMR working for the MRC Infection and Immunity Board on the AMR Cross-Council Initiaitve and the Joint Programming Initiative (JPIAMR). http://www.jpiamr.eu/.
Mrs Sophia Kuhn	
JPIAMR sofia.kuhn@muninnscience.com	
	Sofia Kuhn is responsible for the scientific communication of the Joint Programming Initiative on Antimicrobial Resistance. She has extensive experience in managing scientific outreach of EU funded research projects within the fields of health, nutrition and food safety. Throughout her career Sofia has been working with all aspects of science communication from developing branding, writing and producing printed publications and newsletters,strategic communication, web development, promotion at conferences, press writing, PR, social media and networking activities. Sofia has a BSc in Biological Sciences from King's College London and an MSc in Science Communication from Imperial College London.

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	Chairman of Clinetik Limited
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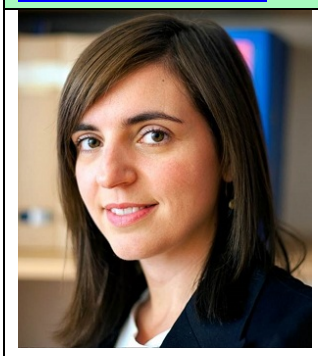
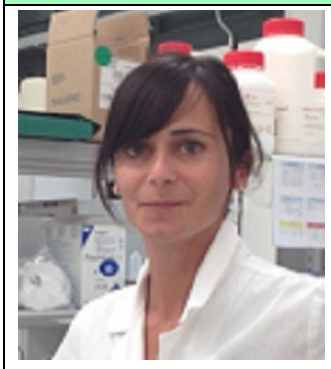
Dr Jay Lewington	
Immunexpress Inc jay.l@immunexpress.com	
	A medical microbiologist and molecular biologist with over 30 years of experience in Life Science research and product development gained at Cardiff University, Amersham International, Merck KGaA, AZUR Environmental, Graseby Dynamics, Smiths Detection Diagnostics and Enigma Diagnostics. Extensive experience of commercialising instruments and assays designed for use by non-technical operatives at the point of need, including Point of Care human diagnostic systems.
Dr Gerd Luedke	
Curetis AG gerd.luedke@curetis.com	
	Dr. Gerd Luedke is able to look back on a twenty-year career in the field of assay development for research and for analytical and diagnostic systems. He has experience in heading up international projects in multiple locations. He has been responsible for the design of molecular diagnostic assays and the development of clinical applications. Prior to co-founding Curetis, Gerd had worked as a project manager for microfluidics systems at Agilent Technologies as well as for test development at Philips Medical Systems. Dr. Gerd Luedke obtained a doctorate in lung cancer tumor biology at Zurich University Hospital and studied Technical Biology at the University of Stuttgart.

Dr Minna Mäki	
Orion Diagnostica Minna.Maki@oriondiagnostica.fi	
	Dr. Maki is an acknowledged expert in molecular microbiology and bioinformatics. She has profound expertise in gene amplification and microarray based technologies. She has published a number of scientific papers in peer-reviewed international journals. Her major scientific breakthroughs include the multi-center evaluation of Prove-itTM Sepsis test, of which the performance results were published in The Lancet 2010. Dr. Maki is an inventor on several patents and in 2013 she was awarded the title of adjunct professor in the field of molecular microbiology at the University of Helsinki. Prior to starting at her current position as Program Leader for the nucleic acid technology (NAT) program at Orion Diagnostica Oy in 2012, Dr. Maki was Chief Scientific Officer and Head of research and development at Mobidiag Oy.
Mrs Laura Marin	
JPIAMR Secretariat laura.marin@vr.se	
	Laura Marin manages the Secretariat of the Joint Programming Initiative on Antimicrobial Resistance. Previously she was responsible for Science Policy and Member Relations at the European Science Foundation. Earlier on she was also team leader of the European Science Open Forum in 2008 in Barcelona (ESOF2008) and Director of Operations at the Catalan Foundation for Research and Innovation. She has several years of experience in managing research and innovation projects at the European Foundation for Quality Management in Brussels and at the Institute for Research and Development at the Fachhochschule Bielefeld in Germany. She holds a M.Litt in Management, Economics and International Relations from the University of St. Andrews (UK) as well as a degree in Political Science from the Universitat Autonoma de Barcelona.
Dr Christian Mittermayr	
Greiner Bio-One Diagnostics Christian.Mittermayr@gbo.com	
	Christian Mittermayr is a chemist and bioinformatician. In the last ten years his research focused on developing in-vitro diagnostics tests based on DNA microarrays and microfluidic based rapid testing. Applications ranged from detection of bacteria, viruses and antibiotic resistance genes. He filed diverse patents in the field of array based diagnostics. He was the coordinator of the FP6 IP DINAMICS.

Dr Francis Moussy	
World health Organization moussyf@who.int	
	Francis Moussy joined the World Health Organization in 2009. He is currently leading projects to facilitate the development, access and use of medical devices, with a focus on diagnostics (e.g. for AMR), that are suitable for Low-and-Middle Income Countries (LMICs). He is also currently the focal point for new Ebola diagnostics. Prior to joining WHO in March 2009, Dr Moussy worked as Professor and Deputy Director in the Brunel Institute for Bioengineering at Brunel University (West London), UK working on biosensors. From 2002 to 2007, Dr Moussy held a position as a tenured Associate Professor of Chemical & Biomedical Engineering at the University of South Florida in Tampa. Dr Moussy also worked for 4 years in Canada after completing his Doctorate in Biomedical Engineering at the Université de Technologie de Compiègne
Dr Monica Neagu	
"Victor Babes" National Institute of Pathology neagu.monica@gmail.com	
	Monica Neagu, Head of Immunobiology Laboratory,"Victor Babes" National Institute and Habilitated Professor of Immunology at the University of Bucharest, Faculty of Biology. PhD thesis (1996) focused on immune parameters that favour chronic staphylococcal infections. Since then, she has conducted over 35 national and international research grants focusing on immune biomarkers in various human pathologies. She has conducted NATO SfP 982838/2007 Development of a novel immunoassay for the very early detection of Biothreatening bacterial infections. She has conducted various bilateral cooperation, participated in FP7, EU Structural Funds Projects and international clinical studies. She was part of the management team for COST (Action D39) and member of ETPN, member of CAT - EMEA (2010-2013).Over 100 published papers.
Dr Seamus O'Brien	
AstraZeneca/COMBACTE seamus.obrien@astrazeneca.com	
	Seamus O'Brien, BA (Mod), Ph.D EFPIA Coordinator IMI New Drugs 4 Bad Bugs (ND4BB) COMBACTE-CARE (Carbapenem resistance in Europe) and Deputy Coordinator COMBACTE consortia and co-chair ND4BB coordination group. COMBACTE and COMBACT-CARE are ground breaking public-private research consortia addressing the challenges to the clinical development of agents for the prevention and treatment of antibiotic resistant bacterial infections. Executive Clinical Director – Infection Global Medicines Unit, AstraZeneca. Clinical development of antibiotics for the treatment of serious bacterial infections. Seamus O'Brien, BA (Mod), Ph.D

Dr Enrica Omiccioli

Diatheva (SOL Group)
e.omiccioli@diatheva.com



Enrica Omiccioli was trained as molecular biologist and microbiologist at the University of Urbino, and obtained a PhD degree. She was involved in multiple collaborative European and Regional founded research projects at Centre of Biotechnology (University of Urbino) working for the development of new diagnostic assays for animal and human pathogens detection.
In 2007 she moved to Diatheva, an italian biotechnology company part of SOL group, focused on the development, production and marketing of new and innovative products for research, diagnostic and therapeutic applications.
She is now project leader in molecular biology and microbiology area and her main activities are focused on the development of diagnostic kits for pathogens detection, molecular typing and food adulteration.

Dr Jonathan Peat

QuantuMDx Group Ltd
jonathan.peat@quantumdx.com

With years of experience in the British biotechnology sector, Dr Jonathan Peat has a PhD in genetics and joined QuantuMDx Group Ltd as Business Development Manager in 2013. The company is developing a suite of molecular diagnostic and DNA sequencing technologies for use in both developing and developed nations. QuantuMDx has received funding from the UK and EU governments, and has partnered with the Gates-backed Foundation for Innovative New Diagnostics (FIND).

<table>
<tr><td colspan="2">Professor Rosanna Peeling</td></tr>
<tr><td colspan="2">London School of Hygiene & Tropical Medicine
Rosanna.peeling@lshtm.ac.uk</td></tr>
<tr><td>  </td><td>Peeling, Rosanna is currently Professor and Chair of Diagnostics Research at the London School of Hygiene and Tropical Medicine (LSHTM) and Director of the International Diagnostic Centre (IDC). Trained as a medical microbiologist, Dr. Peeling had been Research Coordinator and Head of Diagnostics Research at the UNICEF/UNDP/World Bank/WHO Special Programme on Research and Training in Tropical Diseases (WHO/TDR) in Geneva, Switzerland, and the co-Director of the Canadian National Laboratory for Sexually Transmitted Diseases before assuming her current position. Her work in WHO/TDR focused on the evaluation of diagnostics to inform policy and procurement decisions. Her work at LSHTM spans from facilitating test development and evaluation to the translation of evidence to policy, and strategic placement of new diagnostic technologies into different health care settings to ensure maximum impact. She established the IDC to advocate the value of diagnostics, foster innovation, and accelerate access to quality-assured diagnostics to improve global health.</td></tr>
<tr><td colspan="2">Dr Banda Ravi Kumar</td></tr>
<tr><td colspan="2">XCyton Diagnostics Pvt Ltd
ravikumar@xcyton.com</td></tr>
<tr><td></td><td>Dr. B.V. Ravi Kumar, MBBS, PhD (neurochemistry). Had worked for Astra Research Centre India for 9 years as Group Leader. Founded Xcyton Diagnostics in 1995. At XCyton my team developed a molecular diagnostic platform called Syndrome Evaluation System, which simultaneously detects all probable pathogens that can cause a syndrome, in a single sample in a single test in a process time of 7 hrs We have developed SES Antibiotic Resistance which can look for Methicillin, Vancomycin, Carbapenem and ESBL resistance markers in a patient sample. SES is available for variety of infections such as Sepsis, Meningitis, Encephalitis, Febrile neutropenia & Post Transplant infections. SES can be used in Blood, CSF, Ascitis Fluid, BAL etc.</td></tr>
</table>

Dr Nuno Reis

Capillary Film Technology Ltd/Loughborough University
nuno.reis@capfilmtech.com / n.m.reis@lboro.ac.uk

Nuno Reis, Ph.D., is a Lecturer at the Department of Chemical Engineering at Loughborough University and co-founder and director of Capillary Film Technology Ltd (CFT), a UK technology start-up developing fluoropolymer microfluidic tests for point-of-care testing and life sciences research. He pioneered the application of MicroCapilllary Films (MCFs), a novel low-cost melt-extruded microfluidic material to bioseparations, phototransformations and clinical diagnostics. As a director at CFT, he leads the development of multiplex microfluidic tests based on Intellectual Property that he co-developed at both Cambridge and Loughborough, and a £1million contract development of a microfluidic cardiac biomarkers test for AMI with NHS England.

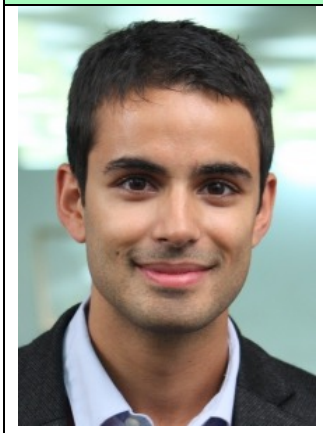
Dr John Rossen

University Medical Center Groningen
j.rossen@umcg.nl

John Rossen is PI in the research group “Genomics for Infection Prevention” and head of the (non-viral) molecular unit which has recently implemented the use of next generation sequencing for routine clinical microbiology and infection prevention. The method is used to determine the genetic relationship between pathogens and for the molecular detection and further characterisation of them. This includes analyses for revealing antibiotic resistance mechanisms and determining the virulence of pathogens resulting in improved risk assessment and infection prevention. Based on comparing whole genomes of bacteria, taylor-made diagnostic tests are developed used for specific detection of outbreak and or virulent bacterial strains.

Mr Joshua Ryan-Saha

NESTA/ Longitude Prize
joshua.ryan-saha@nesta.org.uk



Joshua Ryan-Saha is the Prize Design lead for the Longitude Prize at Nesta. Working with research partners and in in consultation with over 250 global experts, Joshua led the process to select the Longitude Prize challenges and managed the design of the winning criteria for the Antibiotic resistance challenge.Prior to joining Nesta in October 2013, Joshua worked as a constitutional reform consultant in Bosnia and Herzegovina working with a range of international organizations developing and delivering projects related to democratic reform and reconciliation. Joshua started his career in local government as a participant in the sector’s National Graduate Development Programme, working at the London Borough of Newham on a number of transformative projects across a range of service areas including education, social care, housing, and crime reduction.

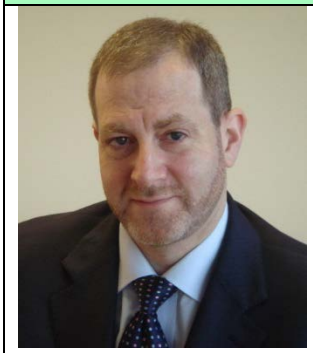
Dr Tariq Sadiq
St. George's University of London
ssadiq@sgul.ac.uk

Dr Sadiq graduated in Medicine at Southampton University in 1989 and following post-graduate professional training obtained his MD from University College London in 2005, investigating the impact of bacterial sexually transmitted infections on the development of antiretroviral resistance in HIV in the genital tract. His current research interests include STI pathogenesis as well as host and microbial diagnostic technologies including rapid antimicrobial resistance testing and e-health care. He is principal investigator of eSTI2 (electronic self-testing instruments for sexually transmitted infections), a clinical, microbiological, engineering and industrial consortium that develops and evaluates novel diagnostic and e-health technologies. Dr Sadiq leads the SGUL-PHE Applied Diagnostic Research and Evaluation Unit at St George's.

Dr Jack Scannell
Innogen (Edinburgh University)
Jack.scannell@casmi.org.uk

Dr Scannell is an Associate Fellow of CASMI at Oxford University and an Associate Member of the Innogen Instititute at Edinburgh University. Dr Scannell was Head of Discovery Research at a e-Therapeutics PLC, an Oxford-based biotechnology firm. Prior to that, Dr Scannell worked in financial markets, and was involved in drug industry investment.

Mr Howard Sherman
Safeguard Biosystems
hsherman@sgbio.com



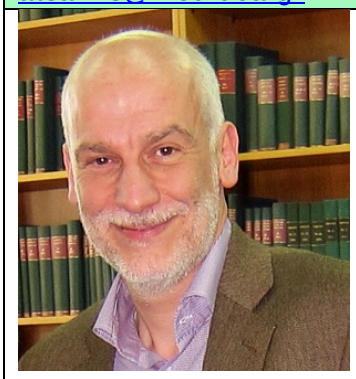
Safeguard Biosystems is a DNA detection and screening company for high throughput pathogen detection. Its disruptive technology allows for detection of multiple targets (2-200+) from single samples, quickly and cost effectively. Initial focus is on bacterial pathogen detection in humans that is being extended to include anti-biotic resistant strain detection. We are looking at how this may be extended to animals.
Without the ability to detect the underlying pathogens there is limited value in being able to identify the antibiotic resistant strains. Our technology can provide a front line screening tool to identify the pathogens.
The company focuses on large commercial opportunities where its technology can have an impact.

Dr Stéphanie Simon	
CEA stephanie.simon@cea.fr	
	Stéphanie Simon is the head of the laboratory of immunoanalytical research at CEA (commissariat à l'Energie Atomique). Activities of the laboratory are dedicated to the development of antibodies for therapeutic applications and for detection/diagnostic rapid tests of numerous pathogenic agents (Prion protein, Yersinia, enterohemorragic E. coli, shigella, Salmonella…) and toxins (bacterial or plant toxins). For these purposes the laboratory has an experience of more than thirty years and possesses a platform for the production and characterization of murine monoclonal antibodies. S. Simon has contributed to the development of a post-mortem diagnostic test of bovine spongiform encephalopathy commercialized by Bio-Rad company and lateral flow immunoassays, commercialized by NBC-sys company.
Mr Graham Snudden	
BUGS Bioscience Ltd gs@bugsbio.org	
	Graham Snudden is co-founder of BUGS Bioscience Ltd; a not-for-profit spin-out from St Georges, University of London. BUGS Bioscience's Senti™ pathogen surveillance platform, combines high throughput genomics and cloud based software to deliver a generic surveillance capability. It is currently being used to investigate the impact of PCV vaccines, for Streptococcus pneumoniae, on nasal carriage and associated disease. BUGS Bioscience brings to AMR world class expertise in pathogen genomics combined with a novel, self-funding, not-for-profit business model, commercial software development and sales processes, and the ability to develop and deploy new innovations in molecular surveillance in both developed and developing countries.
Dr Martin Steinbakk	
Folkehelseinstituttet martin.steinbakk@fhi.no	
	Medical doctor from the University of Oslo, specialist in medical microbiology working many years in diagnostic laboratories with a special interest in diagnosis and treatment of infectious diseases both in children and adults. My special interest for the last 20 years has been in antimicrobial resistance and AMR surveillance. I have been part of the Norwegian program for Surveillance of AMR since the start in 2000. For many years I have also been a member of both the Norwegian (NWGA) and the European Committee on Antimicrobial Susceptibility Testing (EUCAST). For the last five years I have been a medical officer at the Norwegian Institute of Public Health with a special focus on antibiotics and antimicrobial resistance.

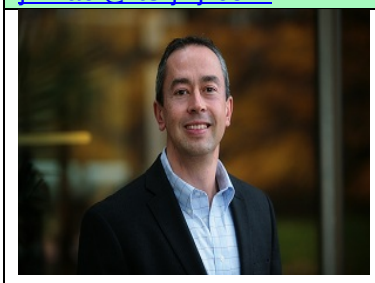
Dr Cindy Teh Shuan Ju
University of Malaya, Malaysia
cindysjteh@um.edu.my

Dr. Cindy Teh completed her PhD in 2011 and joined the Department of Medical Microbioblogy in University of Malaya, Malaysia as a senior lecturer. She ad made excellent contributions in the teaching programs and diagnostic services. Her greatest contribution is undoubtedly in the area of research. She has numerous publications in peer-reviewed journals. Her current research interests include antimicrobial resistance, molecular diagnostics, genomics, proteomics, transcriptomics and metabolomics of Gram-negative and Gram-positive Bacteria.

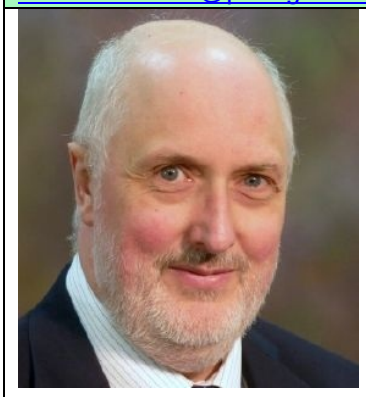
Professor Athanassios Tsakris
University of Athens
atsakris@med.uoa.gr



Athanassios Tsakris graduated as an MD from the Medical School of University of Athens, Greece and completed his training in Medical Microbiology at North Middlesex Hospital, the Central Public Health Laboratory, and the London School of Hygiene and Tropical Diseases, University of London. He is a Fellow in Medical Microbiology and Virology at the Royal College of Pathologists, London. Prof Tsakris is currently Professor and Head of the Department of Microbiology at the Medical School, University of Athens, Greece. He is member of the Executive Board of the Hellenic Center for Disease Control and Prevention and National representative of the European Antimicrobial Resistance Surveillance Network (EARS-Net). His major interests include surveillance of multidrug-resistant Gram-negatives, development of phenotypic methods for the detection of carbapenemases, infection control activities and molecular mechanisms of antimicrobial resistance.

Dr Arjon Van Hengel	
European Commission Adrianus.VAN-HENGEL@ec.europa.eu	
	Arjon van Hengel studied biology at the University of Utrecht (NL) and received his PhD in molecular biology from the University of Wageningen (NL), after which he worked as a research scientist at the John Innes Centre (Norwich, UK). Since 2005 he works for the European Commission, where he first led a research group that develops and validates analytical detection methods. Since 2009 he is working at the Directorate General for Research and Innovation as scientific officer responsible for research funding and research policy in the area of antimicrobial resistance.
Dr Jorge Villacian	
Janssen Diagnostics jvillaci@its.jnj.com	
	Jorge Villacian is currently the Chief Medical Officer for Janssen Diagnostics. He joined Johnson & Johnson as Director of Medical Affairs for Virco in Belgium in 2006. He holds an MD degree from his home country, Mexico and specialized in Internal Medicine at the Mount Sinai Hospital in Miami and in Infectious Diseases at the Mayo Clinic in Rochester. Jorge worked in the Public Health and Hospital Infectious Diseases fields in the South Pacific and in Singapore, developing clinical and translational research capabilities as well as holding a clinical teaching appointment with the National University of Singapore. Prior to joining Johnson & Johnson, Jorge led the clinical development of tipranavir (a protease inhibitor for treatment of resistant HIV) in Europe, Asia and Latin America with Boehringer Ingelheim in a program that culminated in the approval of the drug for the treatment of multi-resistant HIV. He has presented and published extensively on topics related to infectious diseases and in particular to HIV.
Dr Des Walsh	
Medical Research Council DESMOND.WALSH@HEADOFFICE.MRC.AC.UK	
	I am the Head of Infections and Immunity at the Medical Research Council and I lead on our antimicrobial resistance strategy. I also chair the UK antimicrobial resistance funders forum and represent the UK on the EU Joint Programming Initiative in Antimicrobial Resistance. I have worked in a number of areas at the MRC including establishing our Stratified Medicine consortia, developing academic/industry research collaborations and working with international funders in infectious disease.

Penny Wilson	
Innovate UK Penny.Wilson@innovateuk.gov.uk	

Professor Neil Woodford	
Public Health England neil.woodford@phe.gov.uk	
	Biography: Professor Neil Woodford is Head of the Antimicrobial Resistance and Healthcare Associated Infections (AMRHAI) Reference Unit at Public Health England. He is a Visiting or Honorary Professor at several universities in the UK and overseas. Neil has worked on antimicrobial resistance for three decades and has co-authored over 300 publications and edited three books on this subject. A Fellow of the Royal College of Pathologists, he has served as an Editor of the Journal of Antimicrobial Chemotherapy, and is on the Editorial Board of Microbial Drug Resistance. Neil's interests include antibiotic resistance mechanisms in bacterial pathogens, molecular analysis to track dissemination of resistance, and molecular diagnostics for rapid detection of resistance. He sits on many national and international expert working groups and is a member of the independent Review on Antimicrobial Resistance, established in July 2014 by the Prime Minister and led by the economist Jim O'Neill.

Dr Anna Zorzet	
ReAct anna.zorzet@medsci.uu.se	
	Anna Zorzet completed her PhD in medical microbiology with a focus on antibiotic resistance at Uppsala University in 2010. She then moved into the policy field when she joined ReAct, Action on Antibiotic Resistance in Jan 2011. Currently she is coordinating ReAct's Europe office and the program on "Gathering and Translating Evidence" - translating scientific evidence into policy action on national, regional and global levels. Recent publications include work on how to overcome scientific and structural bottlenecks in antibacterial discovery and development and antibiotic use world wide. She is also working with many regional and international networks on ABR, the WHO and is on the Stakeholder Advisory Board for JPIAMR.

Dr Ghada Zoubiane	
Medical Research Council GHADA.ZOUBIANE@HEADOFFICE.MRC.AC.UK	
	Ghada is the programme manager for infection diseases at the UK Medical Research Council. She is currently leading on the UK AMR cross-council initiative which encompasses a large number of funders and stakeholders. She is an active steering committee member of the JPIAMR initiative and the deputy chair of its management board. Ghada has been at the UK Medical Research Council since 2008 leading on different areas of research including Ageing, Public Health Partnerships before moving into Infection diseases.

Notes