

## CURRICULUM VITAE

MIGUEL A. VALVANO, MD  
Queen's University Belfast  
Belfast, BT9 7BL, United Kingdom  
Voice (44) 28 9097-6025

Email: [m.valvano@qub.ac.uk](mailto:m.valvano@qub.ac.uk); <http://publish.uwo.ca/~mvalvano>  
<https://orcid.org/0000-0001-8229-3641>

**PERSONAL DATA**

Birthplace: Avellaneda, Buenos Aires, Argentina.  
Citizenship: Canadian; UK Permanent Resident

**EDUCATION**

1983-86 **Research Fellow**, Prokaryotic molecular biology and bacterial pathogenicity. Oregon Health Sciences University, Portland, Oregon, USA. Supervisor: Jorge H. Crosa.  
1981-83 **Research Fellow**, Clinical research and molecular epidemiology of paediatric infectious diseases. Children's Hospital of Buenos Aires, Argentina. Supervisor: Saul Grinstein, MD, MSc.  
1980-81 **Research Fellow**, Clinical Research on Paediatric Infectious Diseases. Children's Hospital of Buenos Aires, Argentina.  
1980 **Clinical Paediatrics**, Children's Hospital of Buenos Aires, Argentina.  
1976 **Medical Doctor**, School of Medicine, University of Buenos Aires, Argentina.

**EMPLOYMENT**

2012- **Professor of Microbiology and Infectious Diseases**, Wellcome-Wolfson Institute for Experimental Medicine, Queen's University of Belfast, U.K.  
2012-18 **Adjunct Professor**, Microbiology & Immunology, University of Western Ontario, London, Ontario, Canada (UWO).  
2009-17 **Canada Research Chair** in Infectious Diseases and Microbial Pathogenesis (resigned in 2012 to take appointment at Queen's University).  
2004-12 **Department Chair**, Microbiology & Immunology, UWO.  
2002-09 **Canada Research Chair** in Infectious Diseases and Microbial Pathogenesis.  
1999-12 **Full Professor** (Cross-Appointment), Department of Medicine, UWO.  
1998-12 **Full Professor**, Microbiology & Immunology, UWO.  
1993-98 **Associate Professor** (with Tenure), Microbiology & Immunology, UWO.  
1988-93 **Assistant Professor**, Microbiology & Immunology, UWO.  
1986-88 **Research Assistant Professor**, Microbiology & Immunology, Oregon Health Sciences University, Portland, Oregon, USA (OHSU).  
1983-86 **Research Fellow**, National Council of Research, Argentina, Microbiology & Immunology, OHSU.  
1981-83 **Research Fellow**, National Council of Research, Argentina, Children's Hospital of Buenos Aires (CHBA)  
1982-83 **Supervisor**, Rapid Diagnostic Section, Laboratory of Serology and Virology, CHBA.  
1980-81 **Research Fellow**, Municipality of Buenos Aires, CHBA.  
1977-80 **Resident** in Paediatrics, Clinical paediatrics and infectious diseases, CHBA.  
1971-77 **Teaching Assistant**, Department of Histology, Cytology & Embryology, Faculty of Medicine, University of Buenos Aires.

**HONOURS AND AWARDS**

2022-23 **Visiting Professor**, Dipartimento Di Biologia E Biotecnologie "Lazzaro Spallanzani", University of Pavia, Italy  
2021 **Member**; Selection Committee for the Fundación Bunge y Born Award (Argentina). *This is the most prestigious Award conferred to eminent Argentinian scientists by a panel of distinguished scientists*  
2020 **Nominated** to the QUB Staff Excellence Award in the "Outstanding

- 2019 Leadership" category for my role as a supervisor and mentor of staff and students. **Nominated** to the QUB Staff Excellence Award in the "Outstanding Leadership" category for my role as a supervisor and mentor and mentor of staff and students.
- 2019 **Nominated** to the Queen's Education Award in the "Most Inspirational Teacher" Category.
- 2018 **Nominated** to the Postgraduate Supervisory Excellence Award, The Graduate School, Queen's University Belfast.
- 2017 **Awarded** Postgraduate Supervisory Excellence Award, The Graduate School, Queen's University Belfast.
- 2016 **Adjunct Professor**, Centre for Bioinformatics and Integrative Biology, Faculty of Biological Sciences, Universidad Andres Bello, Chile.
- 2015 Research contributions **listed** in the "51 Firsts" ([http://www.uwo.ca/research/51\\_firsts/](http://www.uwo.ca/research/51_firsts/)), University of Western Ontario.
- 2015 **Visiting Professor**, Institute of Genetics and Microbiology, Wroclaw University, Poland
- 2011 **Zeller Senior Scientist Award**, in recognition to outstanding contributions to Cystic Fibrosis Canada as an established investigator.
- 2011 **Certificate of Recognition** for outstanding service as an online mentor of the ASM Minority Mentorship Program, American Society for Microbiology.
- 2009-16 **Tier I Canada Research Chair** in Infectious Diseases and Microbial Pathogenesis. Salary award: \$200,000/year; renewable. Resigned in December 31, 2012.
- 2009 **Visiting Professor**, Universita degli Studi di Napoli, Dipartimento de Chimica Organica e Biochimica, Naples, Italy.
- 2009 **Visiting Professor**, Université Joseph Fourier de Grenoble, Grenoble, France.
- 2009 **Senior Scientist**, Research Training Award, Canadian Cystic Fibrosis Foundation.
- 2008 **R.G.E. Murray (CSM/Roche) Award**, Canadian Society of Microbiologists, given to outstanding Canadian microbiologists.
- 2007 **Ranked No. 1**; CIHR, Operating grant entitled "Lipopolysaccharide export and assembly in Gram-negative bacteria"; Microbiology and Infectious Diseases Grant Review Committee.
- 2006 **Dean's Award of Excellence** for outstanding contributions, Schulich School of Medicine and Dentistry, UWO.
- 2005 **Certificate of Excellence** in Undergraduate Medical Education for the Infection and Immunity block in 1<sup>st</sup> year, Hippocratic Council Undergraduate Medical Education Committee, Schulich School of Medicine and Dentistry.
- 2002-09 **Tier I Canada Research Chair** in Infectious Diseases and Microbial Pathogenesis. Salary award: \$200,000/year.
- 2001 **Ranked No. 1**; CIHR, Operating grant entitled "Molecular genetics and biochemistry of lipopolysaccharide export in bacteria"; Microbiology and Infectious Diseases Grant Review Committee.
- 1996 **Teaching excellence**; University Student's Council Teaching Honours Roll for the 1995-96 Academic Year.
- 1983-86 **Fellowship** from the National Council of Research, Argentina.
- 1981-83 **Fellowship** from the National Council of Research, Argentina.
- 1981 **"Dr. Jorge Capurro" Award**, as a co-author of the paper entitled "Clinic and epidemiological study on gastroenteritis caused by rotavirus"; Argentine Society of Paediatrics.
- 1980-81 **Research Fellowship** from the Municipality of Buenos Aires.
- 1979 "ESSEX 1979" Award, as a co-author of the paper entitled "Meningococcal disease in paediatric populations of Argentina. Clinical and epidemiological study"; Argentine Society of Paediatrics.
- 1976 **Honour Degree** for Academic Excellence, School of Medicine, University of Buenos Aires (Academic Cumulative Average of 91.5 %).

## RESEARCH INTERESTS

- Seminal contributions in: (i) the biogenesis of lipopolysaccharide (LPS) and (ii) the molecular pathogenesis of the opportunistic pathogen *Burkholderia cenocepacia*.
- Advanced the understanding of the initiation of LPS O antigen synthesis and the translocation of the lipid-linked O antigen unit across the bacterial inner membrane. Both processes are of fundamental biological importance to all cells.
- Established proof-of-principle that novel compounds could be identified (called antibiotic adjuvants), which may increase the permeability of the bacterial outer membrane to common antibiotics and antimicrobial peptides.
- Gained international recognition as a leader in *Burkholderia* research. Pioneering work demonstrated for the first time the biology of the *Burkholderia cenocepacia* infection in macrophages, and developed novel genetic tools allowing us to manipulate and better understand this difficult organism, providing models to investigate other opportunistic bacteria causing devastating infections in patients with cystic fibrosis.

### **SUMMARY OF CAREER CONTRIBUTIONS (see publications for details)**

1. Identified the aerobactin iron uptake system, a recognized virulence factor, as encoded in the chromosome of *E. coli* pathogenic strains. **Contributed foundational evidence to the notion of pathogenicity islands in the genomes of pathogenic bacteria.**
2. Pioneered the molecular cloning of lipopolysaccharide (LPS) O antigen genes in *E. coli*. Provided the **molecular basis to begin characterizing the biosynthesis and assembly of O antigens in bacteria.**
3. Established a **new genetic nomenclature for polysaccharide genes in bacteria, which was adopted worldwide.** Worked with Peter Reeves to devise a uniform nomenclature of glycosyltransferase and other assembly genes for cell surface polysaccharide synthesis, which require a departure of the traditional Demerec-style gene nomenclature rules, especially to accommodate the great variations in glycosyltransferases.
4. Elucidated **the pathway for synthesis of the ADP-heptose precursor for LPS lipid A-core oligosaccharide assembly** and identified novel heptose kinase and phosphatase reactions unique to this system, which have been targeted for antimicrobial development. All the proteins in the pathway were purified and crystallized.
5. Performed foundational studies to unravel the **mechanism of membrane translocation of lipid-linked sugar precursors for the assembly of O antigen and other cell surface glycans.** Participated in the identification of Rft1, the eukaryotic flippase in the endoplasmic reticulum for the translocation of the lipid-linked oligosaccharide precursor for protein glycosylation.
6. Established basic principles of the **mechanism of action of the O antigen ligase as a metal ion-independent, inverting glycosyltransferase.**
7. Contributed with specific mutants that helped to **rule out LPS contribution to the activation of NOD1 during innate immune responses.**
8. Pioneered discovery of ***Burkholderia cenocepacia* survival in amoebae and macrophages.**
9. Developed **molecular tools for the genetic analysis of *B. cenocepacia* and other *Burkholderia* species,** which accelerated research in these organisms. Many laboratories worldwide currently use these tools.
10. Pioneered studies in the **cellular microbiology of *B. cenocepacia* and other Bcc bacteria** establishing they can survive intracellularly in modified membrane vacuoles that function as arrested autophagosomes, inducing inflammation through the activation of the pyrin inflammasome via a Type-VI-mediated effector.

11. Determined the **important role of aminoarabinose modification of the LPS molecule in *Burkholderia*** as a molecular signature required for LPS export to the outer membrane and antimicrobial peptide resistance.

12. Discovered **novel mechanisms of intrinsic antimicrobial resistance based on the production and secretion of small molecules communicating resistance to neighbouring bacterial cells**. These molecules (the polyamine putrescine and the bacteriocalin Ycel) are produced under antibiotic-induced stress.

## SCHOLARLY AND PROFESSIONAL ACTIVITIES

### Membership to Professional Societies, Research Consortia and Educational Programs

2023-26	<u>Member</u> , Research Area 4 (Cells) ; Biochemical Society, UK.
2019	<u>Network Investigator</u> , BactiVac, Bacterial Vaccines Network
2018-21	<u>Network Investigator</u> , VALIDATE, Vaccine development for complex intracellular neglected pathogens
2014-19	<u>Member</u> , Themes Panel, Biochemical Society, UK.
2013 -	Biochemical Society, UK.
2013 -	Society for General Microbiology, UK.
2013 -	Spanish Society for Microbiology, Spain
2012-15	COST Action BM1003, "Microbial cell surface determinants of virulence as targets for new therapeutics in cystic fibrosis"
1997 -	<u>Member</u> , International <i>Burkholderia cepacia</i> Working Group.
1996 -	American Association for the Advancement of Science
1988 -	Canadian Society of Microbiologists
1982 -	American Society for Microbiology.
2003-07	<u>Member</u> , Canadian Bacterial Diseases Network.
2002-06	<u>Director</u> , Special initiative in memory of Michael O'Reilly, Cystic Fibrosis Foundation/Institute of Circulatory and Respiratory Health, Canadian Institutes of Health Research, "Pathogenomics and gene target discovery in <i>Burkholderia cepacia</i> ". With Sokol (University of Calgary), Ceri (University of Calgary), Storey (University of Calgary), Wright (McMaster University) and Davies (University of British Columbia).
2000	<u>Associate Graduate Faculty</u> , Faculty of Pharmaceutical and Chemical; Sciences, University of Chile.
1999-03	<u>Associate Member</u> , Canadian Bacterial Diseases Network.
1998	<u>Associate Graduate Faculty</u> , Faculty of Graduate Studies, University of Guelph.
1979-83	Argentine Society of Clinical Investigation.

### Grant Review Panels

2022-	<u>Member</u> , National Science Centre, Poland; Human and animal immunology and infection panel.
2022-25	<u>Core Member</u> , BBSRC, Committee B.
2019-20	<u>Member</u> , BBSRC, Committee B.
2017-21	<u>Member</u> , Genomics Expert Panel, Canadian Institutes of Health Research
2016	<u>Chair</u> , Expert Committee (Cell Imaging), Canada Foundation for Innovation
2015	<u>Reviewer</u> , European Society for Clinical Microbiology and Infectious Diseases.
2015-22	<u>Member</u> , Pool of Experts, Biotechnology and Biological Sciences Research Council, UK.
2014	<u>Chair</u> , Expert Committee (Cell Imaging), Canada Foundation for Innovation.
2014	<u>Member</u> , Peer-Review Panel for the Infect-ERA Joint Translational Call 2014 on "Coordination of European funding for infectious diseases research".
2012	<u>Member</u> , Natural Sciences and Engineering Research Council of Canada, Genes, Cell & Molecules Grant Evaluation Group.
2010	<u>Member</u> , Alberta Innovates Health Solutions (prior known as Alberta Heritage Foundation for Medical Research) Scholarship Review Committee.
2006-08	<u>Member</u> , Executive Committee, Medical/Scientific Advisory Committee, Canadian

- 2005-08 Cystic Fibrosis Foundation.  
Member, Research Subcommittee, Medical/Scientific Advisory Committee, Canadian Cystic Fibrosis Foundation.
- 2005 Chair, Ad-Hoc Peer Review Committee to evaluate Strategic Training Initiative Grants, Canadian Institutes of Health Research.
- 2004 Chair, Microbiology and Infectious Diseases Grant Review Panel, Canadian Institutes of Health Research.
- 2004 Member, Microbial Pathogenesis, National Institutes of Health, USA.
- 2003-06 Member, IUMS Travel Fellowship Program Review panel, International Union of Microbiological Societies.
- 2003 Chair, Strategic Training Program/New Emerging Team, panel B, Canadian Institutes of Health Research.
- 1997-00 Chair, Microbiology and Infectious Diseases Grant Review Panel, Medical Research Council/Canadian Institutes of Health Research.
- 1999 Member, Genomics Grant Review Panel, Medical Research Council.
- 1995-96 Member, Microbiology and Infectious Diseases Grant Review Panel, Medical Research Council.
- 1996 Member, Ontario Graduate Scholarship Selection Panels, Microbiology, Ontario Ministry of Colleges and Universities.
- 1995 Member, Scholarships Review Panel, Medical Research Council.
- 1994 Member, Studentships Review Panel, Medical Research Council.
- 1994 Chair, Ontario Graduate Scholarships Selection Panel; Visa Students, Biology; Ontario Ministry of Colleges and Universities.
- 1992 Member, Ontario Graduate Scholarship Selection Panels, Microbiology; Ontario Ministry of Colleges and Universities.

### External Review of Grant Proposals/Scholarships

- International: **Argentina**, Fondo para la Investigación Científica y Tecnológica (FONCYT), Secretaría de Ciencia y Técnica (SECYT); **Austria**, Research Council; **Belgium**, Belgium Research Fund, King Baudouin Foundation; **Canada**, Alberta Heritage Foundation for Medical Research, British Columbia Health Care Research Foundation, Canada Research Chairs Program, Canadian Institutes of Health Research, Cystic Fibrosis Canada, Manitoba Health Research Council, Natural Sciences and Engineering Research Council; Ontario Premier's Excellence Award; **Chile**, National Fund of Scientific and Technologic Research (FONDECYT); **China**, Research Grants Council of Hong Kong; **EU**, European Research Council; **France**, French National Research Agency; **Germany**, German Research Foundation; **Ireland**, Health Research Board; **Israel**, Israel Science Foundation; **Italy**, Italian Cystic Fibrosis Foundation; **Netherlands**, Netherland Genomics Initiative, The Netherlands Organisation for Health Research and Development; **Poland**, National Science Centre; **Portugal**, Fundação para a Ciência e Tecnologia (Portugal); **US**, Cystic Fibrosis Research Inc., Cystic Fibrosis Foundation, Department of Agriculture, National Science Foundation.
- UK: BBSRC; Cystic Fibrosis Trust; Henry Wellcome Fellowships; Leverhulme Trust; Lister Institute; Medical Research Council, Wellcome Trust
- UWO: University Council on Animal Care, UWO, Ontario, Canada.

### Review of Scientific Manuscripts

Antoine van Leeuwenhoek International Journal of General and Molecular Microbiology; Applied and Environmental Microbiology; Aquaculture; Archives of Microbiology; Biochemical Journal; Biochemistry; Biochimica and Biophysical Acta; Biochimie; BMC Genomics; Canadian Journal of Gastroenterology; Canadian Journal of Microbiology; Canadian Journal of Veterinary Research; Carbohydrate Research; Cell Host & Microbes; Cellular Microbiology; Clinical and Vaccine Immunology; Current Drug Targets-Cardiovascular and Haematological Disorders; Diagnostic Microbiology and Infectious Disease; Drug Discovery Today; eLife; Emerging Infectious Diseases; Environmental Microbiology Reports; Expert Reviews in Anti-infective Therapies; FEBS Letters; FEMS Microbiology Letters; Frontiers in Microbiology; Frontiers in Veterinary Medicine; Gene;

**Genetics; Glycobiology; Infection; Infection & Immunity; Innate Immunity; International Journal of Antimicrobial Agents; International Journal of Medical Microbiology; ISME Journal; Journal of Applied Microbiology; Journal of Bacteriology; Journal of Biological Chemistry; Journal of Cystic Fibrosis; Journal of Innate Immunity; Journal of Medical Microbiology; Journal of the American Chemical Society; Lancet Infectious Diseases; Microbial Pathogenesis; Microbiology; Microbiology and Molecular Biology Reviews; Molecular Microbiology; Nature Chemical Biology; Nature Microbiology; Nature Microbiology Reviews; Nature Scientific Reports; Pathogens and Disease; Pediatric Research; Philosophical Transactions B; PLoS Genetics; PLoS One; PLoS Pathogens; Proceedings of the National Academy of Sciences (USA); Research Communications; Science; Science Signalling; Stress; The Lancet; Trends in Microbiology; Vaccines; Virulence.**

### Editorial Boards

2022 Associate Editor (Glycoscience), Frontiers in Molecular Biosciences  
 2021 Member, Editorial Board, Frontiers in Molecular Biosciences - Glycobiology  
 2021-26 Member, Editorial Board, Glycobiology  
 2018 Guest Editor, PLoS Genetics  
 2018-28 Member, Editorial Board, The Journal of Biological Chemistry  
 2016-18 Associate Editor, Editorial Board, Scientific Reports  
 2013-15 Associate Editor, World Journal of Microbiology and Biotechnology  
 2013 - Member, Editorial Board, Microbial Pathogenesis  
 2013-24 Member, Editorial Board, Infection and Immunity  
 2010 - Member, Editorial Board, MicrobiologyOpen  
 2010-12 Associate Editor, PLoSOne  
 2010 Guest Editor, PLoS Pathogens.  
 2010 - Member, Editorial Board, Frontiers in Cellular Microbiology.  
 2005 - Contributing Faculty Member in Faculty of 1000 "Biology".  
 2005-11 Associate Editor, Canadian Journal of Microbiology.

### Advisory Boards and Consultant Activities

2023-27 Member, Scientific Advisory Board; BBSRC LOLA grant "Cell Wall Formation in Rod Shaped Bacteria"; David Roper, Stephen Cochrane, Séamus Holden and Phillip Stansfeld, University of Warwick and Queen's University Belfast.  
 2023 Member, Scientific Advisory Board, Instituto de Biología Molecular y Celular de Rosario (IBR), Argentina.  
 2018 Member, Assessment Team, Portuguese Agency for Assessment and Accreditation of the Higher Education, Lisbon, Portugal.  
 2015-20 Member, External Advisory Board, Institute of Biomedicine (IBIOMED), León, Spain.  
 2008-10 Consultant, Axentis Pharma, Zurich, Switzerland

### Organization of Scientific Conferences

2018 Elected Chair for the 2020 FASEB Conference in "Microbial Polysaccharides"  
 2018 Organising Committee Board Adviser, Young Microbiologist Symposium, Aug 27-28, Belfast, UK.  
 2016 Member, International Advisory Committee for the International Union of Microbiological Societies Meeting in Jul 17-21, 2017, Singapore.  
 2016 Chair, Ken B. Fraser Memorial Symposium, Centre for Infection & Immunity, QUB, Apr 19.  
 2015 Chair, Ken B. Fraser Memorial Symposium, Centre for Infection & Immunity, QUB, Apr 28.  
 2013 Session Chair, 36th European Cystic Fibrosis Conference, Lisbon, Portugal, June 12-15.  
 2012 Chair, International *Burkholderia cepacia* Work-study Group, Montreal, Canada, April 18-21.  
 2011 Session Chair, EUROCARB 16, Sorrento, Italy, July 3-8.  
 2011 Co-Chair, 14<sup>th</sup> Broken Arrow Conference, Cystic Fibrosis Canada, Quebec City, April 7-8.  
 2008 Session Convener, Banff Conference in Infectious Diseases, Banff, Canada, May 27-31.  
 2008 Session Convener, International *Burkholderia cepacia* Work-study Group, Treviso, Italy, April 14-17.  
 2003 Member, Advisory Committee for the National Research Forum for Young Investigators in Circulatory and Respiratory Health, Winnipeg, Manitoba, May 6-9, 2004. A program organized by the CIHR Institute of Circulatory and Respiratory Health.

- 2001 Co-Chair, 6<sup>th</sup> International *Burkholderia cepacia* Workstudy Group, Niagara on the Lake, Ontario, April 6-8, 2001.
- 1991 Co-Chair, Local Organizing Committee, Annual meeting of the Canadian Society of Microbiologists (Organization of the CSM 1991 Annual Meeting held at UWO campus, June 1991).

### **External Reviews for Promotion & Tenure and/or Academic Appointments and Promotions**

- 2023 Promotion to Research Associate Professor, University of Colorado, USA
- 2020 Promotion to Professor, University of Ghana
- 2019 Promotion to Senior Research Fellow, University of Edinburgh, UK.
- 2017 Promotion to Professor, University of Glasgow, UK.
- 2017 Promotion to Professor, University of Adelaide, Australia.
- 2015 Promotion to Reader, University of Glasgow, UK.
- 2014 P&T, Département de Microbiologie, Infectiologie et Immunologie, Université de Montreal, Canada.
- 2012 P&T, Department of Biology, Indiana University, Bloomington, Indiana, USA.
- 2010 P&T, Department of Microbiology and Immunology, Michigan State University, East Lansing, USA.
- 2009 P&T, Department of Microbiology and Immunology, University of Texas at Austin, Texas, USA.
- 2009 P&T, Department of Biological Sciences, Louisiana State University, Baton Rouge, LA, USA.
- 2009 CRC candidate, Institute Armand-Frappier, Quebec.
- 2008 P&T, Department of Biochemistry, Microbiology and Immunology, University of Ottawa.
- 2008 P&T, Department of Medical Genetics and Microbiology, University of Toronto.
- 2007 P&T, Department of Biology, McMaster University, Hamilton, Ontario.
- 2006 P&T, Department of Immunology and Microbiology, Wayne State University, Detroit, MI, USA.
- 2006 CRC candidate, Institute Armand-Frappier, Quebec.
- 2006 CRC candidate, Department of Microbiology and Infectious Diseases, University of Calgary.
- 2006 P&T, Department of Microbiology and Infectious Diseases, University of Calgary.
- 2005 Professorship, Department of Microbial Ecology, University of Vienna.
- 2005 CRC candidate, Dalhousie University.
- 2004 P&T, Department of Medical Genetics and Microbiology, University of Toronto.
- 2003 CRC candidate, McMaster University.
- 2002 P&T, Department of Biology, McMaster University.

### **Leadership training**

- 2020 Panelist, "Student-Supervisor Workshop", School of Graduate Studies, QUB, Jan 15
- 2008 American Society for Microbiology Minority Mentoring Program.
- 2008 Instructor, "Managing your Laboratory", Faculty & Staff Development Program, Schulich School of Medicine and Dentistry, Oct 6.
- 2008 Participant, Workshop on Knowledge Transfer, Institute of Infection and Immunity, Canadian Institutes of Health Research, Ottawa, Ontario, Sep 24-26.
- 2007 Workshop speaker and moderator - Research Management, New Investigator Forum, Institute of Infection and Immunity, Canadian Institutes of Health Research, Kingsbridge Centre, Ontario, Apr 13-15.
- 2007 Workshop speaker and moderator - Grant writing and peer review, New Investigator Forum, Institute of Infection and Immunity, Canadian Institutes of Health Research, Kingsbridge Centre, Ontario, Apr 13-15.

### **Leadership development**

- 2011 Participant, On-line course on Accessibility at Western (AODA).
- 2008 Participant, American Medical Society of Microbiology and Immunology Chairs Annual Conference, Antigua.
- 2007 Participant, American Medical Society of Microbiology and Immunology Chairs Annual Conference, San Juan, Puerto Rico.
- 2006 Participant, American Medical Society of Microbiology and Immunology Chairs Annual

- Conference, Los Cabos, Mexico.
- 2005 Participant, Ivey Program for Leaders Medicine and Dentistry, Dec 13-15.
- 2005 Speaker & Participant, Academic Leader's Summer Conference, UWO, BenMiller Inn, Goderich, June.
- 2005 Participant, American Medical Society of Microbiology and Immunology Chairs Annual Conference, Gamboa, Panama.
- 2003 Participant, Executive Development Seminar for Associate Deans and Department Chairs, Association of American Medical Colleges, Ft. Lauderdale.
- 2003 Participant, Program for Leaders in Medical Education, Harvard Medical School, The Harvard Macy Institute, University of Western Ontario.

### Training Courses

- 2015 BBSRC, Reviewer's Induction, London, 20 Jan.
- 2014 QUB, Diversity Training course, 11 June.
- 2014 QUB, Fire Safety, 5 Jun.
- 2014 QUB, Data Protection, 21 May.
- 2014 QUB, Freedom of Information, 21 May.
- 2014 Participant, Grant Foundry course; with Morgan Giddings; 8-weeks grant writing group course, Mar-Apr
- 2013 QUB, display Screen Equipment
- 2013 Participant, Grant-writing course; Grant Dynamo with Morgan Giddings; 6-weeks On-line course, Oct-Nov.
- 2013 QUB, Health & Safety Training, Centre for Infection and Immunity, Queen's University, Belfast, Oct 8.
- 2013 Appraiser Skills Training Day for Appraisers of Academic and Research Staff, 27 Sep
- 2013 Human Tissue Act Training Seminar, 24 Jun.
- 2012 Participant, Health & Safety Training, Centre for Infection and Immunity, Queen's University, Belfast, Oct 8.

### Invited Lectures

#### 2023

- Sep 25, 2023, "The *Achromobacter* type 3 secretion system drives pyroptosis and immunopathology via independent activation of NLRC4 and NLRP3 inflammasomes", Institute of Biomedical Sciences, University of Sao Paulo, Brazil.
- Sep 26, 2023, "A bacterial lipocalin and a membrane cytochrome b form a detoxification system for membrane lipid peroxides in Gram negative bacteria", Institute of Biomedical Sciences, University of Sao Paulo, Brazil.

#### 2022

- Sep 29, 2022, "Tutorial on Academic Writing", BactiVax Summer School, Sep 28-30, 2022, Ischia, Italy.
- May 24, 2022, "A bacterial lipocalin involved in detoxification of membrane lipid peroxides and a new kid on the CF block: *Achromobacter* species", Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Italy.

#### 2020 & earlier

- Nov 13, 2020, "A bacterial lipocalin protects the Gram-negative bacterial cell envelope from physical and chemical stress-mediated lipid peroxidation", University Of Warwick, UK (Virtual)
- Sep 25, 2020, "Bacterial glycoprotein vaccines", BactiVax Meeting, Sep 25-27, 2020 (Virtual).
- Nov 8, 2019, "Bacterial protection mechanisms against membrane peroxidative stress mediated by antibiotics: Critical role of lipocalins", Chilean Congress of Microbiology, Puerto Varas, Chile.
- Jul 6, 2019, "Bacterial lipocalins reveal a new mechanism to quench peroxidative damage under antibiotic stress", University of Wroclaw, Poland.
- Jun 20, 2019, "Intrinsic antimicrobial resistance in *Burkholderia*: the outer membrane under stress", IDIVAL, Santander, Spain.
- May 16, 2019, "Lipid peroxidation stress and antimicrobial resistance", Department of Microbiology, University of Sao Paulo, Brazil.



- 
- May 2, 2019, "*Burkholderia* species: the fine line between inflammation and antibiotic resistance", Western University, London, Ontario, Canada.
  - Feb 7, 2019, "*Burkholderia cenocepacia*, a bacterial opportunist that taps on inflammation and antibiotic resistance", University of Aberdeen, Scotland.
  - Jan 31, 2019, "*Burkholderia* species: the fine line between pathogenesis and opportunity", University College Cork, Cork, Ireland.
  - Nov 13, 2018, "To peroxidate or not? That is the question", Ireland-Israel-Denmark Meeting on Host-Pathogen Communication, Weismann Institute of Science, Rehovot, Israel, Nov 11-14.
  - Nov 7, 2018, "Type VI secretion and inflammation", Workshop on "Contribution of bacterial injection systems to human disease", University of Andalucía, Baeza, Spain. Nov 5-7.
  - Oct 24, 2018, "Mechanisms of antimicrobial resistance in *Burkholderia cenocepacia*, a resilient opportunistic bacterium", Postgraduate course on Microbial Biofilms, CINDEFI, Universidad de La Plata, Argentina.
  - Oct 19, 2018, "Protein glycosylation in the *Burkholderia* genus: Potential for a global vaccine", Department of Microbiology, University of Sao Paulo, Brazil.
  - Sep 27, 2018, "Glycan assembly in the bacterial periplasmic space", Glycochemistry Summit, BOKU, Vienna, Austria, Sep 27-28.
  - Sep 14, 2018, "Microbial research at the Centre for Experimental Medicine", Wellcome-Wolfson Institute for Experimental Medicine Opening Day Ceremony.
  - Sep 11, 2018, "Elucidating a conserved protein glycosylation pathway in the *Burkholderia* genus", 8th Baltic Meeting in Microbial Carbohydrates", Dublin, Ireland, Sep 9-12.
  - Jun 20, 2018, "Protein glycosylation in the *Burkholderia* genome", FASEB Conference on Microbial Glycobiology, Scottsdale, Arizona, USA.
  - May 3, 2018, "Elucidating a conserved protein glycosylation pathway in the *Burkholderia* genus", 21st International *Burkholderia cepacia* Working Group meeting, Dublin. Ireland.
  - May 5, 2018, "*Burkholderia cenocepacia* lipocalins expose an uncharacterized pathway for protection against membrane lipid peroxidation", 21st International *Burkholderia cepacia* Working Group meeting, Dublin. Ireland.
  - Feb 20, 2018, "Mechanisms of intrinsic antimicrobial resistance by Gram-negative bacterial opportunist pathogens", Collaborative Research Symposium, West African Centre for Cell Biology of Infectious Pathogens (University of Ghana) and the Centre for Experimental Medicine (Queen's University Belfast), Accra, Ghana, Feb 20-22.
  - Feb 16, 2018, "Glycosylation of surface molecules in *Burkholderia cenocepacia*", 22nd Austrian Carbohydrate Workshop, Vienna, Austria, Feb 15-16.
  - Dec 20, 2017, "Novel mechanisms of intrinsic antibiotic resistance in *Burkholderia* species and other opportunistic pathogens", International Workshop "Harnessing the potential of high-altitude plants and bacteria to mitigate the environmental impacts of climate change and waste", Universidad Mayor de San Andres, La Paz, Bolivia.
  - Dec 19, 2017, "Plant-Bacteria interactions: The wonderful case of *Burkholderia* species", International Workshop "Harnessing the potential of high-altitude plants and bacteria to mitigate the environmental impacts of climate change and waste", Universidad Mayor de San Andres, La Paz, Bolivia
  - Nov 24, 2017, "*Burkholderia cenocepacia*: Novel mechanisms of antimicrobial resistance in *Burkholderia* species and other opportunistic pathogens", Keynote Speaker; Microbiology Conference, University of Wroclaw, Poland.
  - Oct 22, 2017, "*Burkholderia cenocepacia*: A proinflammatory and highly antibiotic resistant opportunistic pathogen", Brazilian Congress of Microbiology, Fox de Iguazu, Brazil.
  - Oct 6, 2017, "Supervisor-student relationships and conflict resolution", The Graduate School PGR Induction Programme, Queen's University Belfast.
  - Sep 13-14, 2017, "If you don't kill me I cheat: Bacterial antibiotic hijacking in the extracellular space", Combined 5th International Molecular Microbiology Meeting and 4th M4 Meeting, University of Birmingham, UK.
  - Sep 7-8, 2017, "*Burkholderia cenocepacia*: The lifestyle of a resilient survivor", Postgraduate Course on Host-Pathogen Interaction, University of Milano-Bicocca, Italy.
  - Jul 20, 2017, "*Burkholderia cenocepacia* leads the way: Novel mechanisms of antimicrobial resistance acting in the extracellular space", Institute of Science and Technology, University of Lisbon, Portugal.

- 
- Jul 6, 2017, "*Burkholderia cepacia* shows us that antibiotic resistance and inflammation are two sides of the same coin", West African Centre for Cell Biology of Infectious Pathogens Annual Research Conference, University of Ghana, Legon, Accra, Ghana.
  - Sep 20, 2016, "*Burkholderia cenocepacia*: the unbearable lightness of surviving". Conway Institute, University College Dublin, Ireland.
  - Apr 27, 2016, "*Burkholderia cenocepacia*: the juggling act of surviving". Keynote Lecture, 20<sup>th</sup> Annual International *Burkholderia cepacia* Working Group (IBCWG) Conference, The Ohio State University, Columbus, Ohio, USA.
  - Apr 19, 2016 "*The guard hypothesis: Lessons from Burkholderia cenocepacia proinflammatory activity*", Ken B. Fraser Memorial Symposium in Inflammation and Infection, Queen's University Belfast.
  - Mar 21, 2016, "Strategies for intracellular survival of *Burkholderia cenocepacia* in macrophages". Symposium on 'Microbial evasion of host defenses', Annual Meeting of the Society of Microbiology, Liverpool, UK.
  - Mar 8, 2016, "*Burkholderia cenocepacia*: a bacterial survivor that captures antibiotics outside cells and provokes 'indigestion' to macrophages", Plenary Lecture, Universidad de Chile, Santiago, Chile.
  - Mar 7, 2016, "Lipopolysaccharide and intrinsic antimicrobial peptide resistance in the model bacterium *Burkholderia cenocepacia*", Centre for Nanobiology and Microbiology, Universidad Andres Bello, Santiago, Chile.
  - Jan 29, 2016, "Bacterial targeting of host Rho GTPases: a novel mechanism of inflammation in response to host damage sensing", Workshop on Advances in Biomedical Research, IBIOMED, Leon, Spain.
  - Jan 20, 2016, "*Burkholderia cenocepacia*: a bacterial opportunist that hijacks antibiotics outside cells and provokes 'indigestion' to macrophages", Department of Clinical Microbiology, St. James Hospital, Trinity College, Dublin, Ireland.
  - Jan 18, 2016, "Hijacking antibiotics in the extracellular space: An unrecognized mechanism of antibiotic resistance", Queen's University Antimicrobial Research Network Workshop, Templepatrick, NI, UK.
  - Dec 21, 2015, "Novel mechanisms of extracellular intrinsic antimicrobial resistance", Biomedical Research Forum of Cantabria, IDIVAL, Santander, Spain.
  - Sep 18, 2015, "A *Burkholderia cenocepacia* Type VI-secreted effector deamidates Rho GTPases and activates the Pyrin inflammasome", Irish Society for Immunology, Dublin.
  - Sep 15, 2015, "Wood for fire: Actin remodelling and inflammation by *Burkholderia cenocepacia*-infected macrophages", Department of Biological Sciences, University of Alberta, Canada.
  - Sep 3, 2015, "Extracellular antibiotic resistance: a new mechanism of antibiotic resistance that can be inhibited by vitamins". NI-AMR Workshop, Ulster University, Northern Ireland.
  - Jul 24, 2015, "Actin remodelling and inflammatory fire: How *Burkholderia cepacia* induces inflammation in macrophages", INSERM and Universite de Montpellier, Nimes, France.
  - Jun 10, 2015, "Lipopolysaccharide assembly: lessons learned from the topology of assembly proteins", Institute of Immunology, Polish Academy of Sciences, Wroclaw, Poland.
  - Feb 26, 2015, "From fibers to fire: *B. cenocepacia*, actin and the pyrin inflammasome". RCSI Molecular Medicine, Royal College of Surgeons in Ireland, Beaumont Hospital, Beaumont, Dublin, Ireland.
  - Oct 30, 2014, "*Burkholderia cenocepacia*, macrophages and cystic fibrosis: bacteria taking advantage of defective autophagy", Institute of Infection, Immunity & Inflammation, University of Glasgow.
  - Oct 14, 2014, "Novel mechanisms of intrinsic antibiotic resistance in *Burkholderia cenocepacia*", COST BM1003 Final Conference, Napoli, Italy.
  - Sep 22, 2014, "Functional information derived from the topology of lipopolysaccharide assembly proteins", Mini-Symposium on Bacterial Glycobiology, Boku University, Vienna, Austria.
  - Sep 12, 2014, "Bacterial protein secretion systems: Type 6 Secretion and inflammation", Dublin Training School on "Ion Transport, Airway Liquid dynamics & Host Pathogen Interactions in CF lung epithelia. COST Action BM1003, Royal College of Surgeons in Ireland, Beaumont Hospital, Dublin, Ireland.
  - Aug 1, 2014, "*Burkholderia cenocepacia*: an intracellular opportunistic pathogen full of surprises", Plenary Lecture, International Union of Microbiological Societies Congress, Jul 27 - Aug 1, Montreal, Canada.

- Jul 17, 2014, "Novel mechanisms of antibiotic resistance in *Burkholderia cenocepacia*", Department of Microbiology and Immunology, Faculty of Pharmacy and Biochemistry, Universidad de Buenos Aires, Argentina.
- Jun 2, 2014, "Intracellular survival and pro-inflammatory mechanisms of *Burkholderia* species: implications for cystic fibrosis disease", Young Microbiologists Symposium on Microbe Signalling, Organisation and Pathogenesis, 2-3 June 2014, University of Dundee.
- May 14, 2014, "Novel mechanisms of antimicrobial resistance involving chemical communication among bacterial cells", Wellcome Trust Mini-Symposium, Queen's University Belfast.
- Apr 18, 2014, "Mechanisms of intracellular survival of *Burkholderia* species in macrophages", Symposium, Centre for Infection and Immunity, Queen's University Belfast.
- Apr 1, 2014, "Lipopolysaccharide and intrinsic antimicrobial resistance in *Burkholderia cenocepacia*", Borstel Research Centre, Germany.
- Mar 20, 2014, "*Burkholderia cenocepacia*: a cystic fibrosis pathogen", The Laboratory for Molecular Infection Medicine Sweden, Umea, Sweden.
- Mar 19, 2014, "Microbes R'us: A doctor's adventures with microbial pathogens", Inaugural Lecture, Queen's University Belfast.
- Feb 17, 2014, "*Burkholderia* and *Achromobacter* infections: macrophages and autophagy", Symposium on Respiratory Infections, Centre for Infection and Immunity, Queen's University Belfast, UK.
- Feb 6, 2014, "Intracellular survival of *Burkholderia cenocepacia* in macrophages: the moonlighting lifestyle of an opportunistic pathogen", School of Microbiology, University College of Cork, Cork, Ireland.
- Jan 23, 2014, "Molecular pathogenesis and intrinsic antimicrobial resistance of *Burkholderia cenocepacia*, a cystic fibrosis pathogen", School of Biosciences, University of Exeter, UK.
- Oct 15, 2013, "Myths and facts in lipopolysaccharide O antigen assembly", School of Immunity and Infection, University of Birmingham, UK.
- Oct 4, 2013, "My adventures with microbes: Lipopolysaccharides, macrophages and opportunistic infections", Postdoctoral Fellows Symposium, School of Medicine, Dentistry, and Biomedical Sciences, Queen's University.
- Sep 24, 2013, "Molecular typing based on O-antigen gene diversity", Autumn Training School, COST BM1003, Faculty of Biological Science, University of Wroclaw, Poland.
- June 15, 2013, "Bcc infection resistance and virulence" in Symposium 26 - *Burkholderia cepacia* complex: still a problem? European Cystic Fibrosis Society Conference, Lisbon, Portugal.
- May 2, 2013, "Interactions of *Burkholderia cenocepacia* with macrophages: A "tic-tact-toe" game, London School of Hygiene and Tropical Medicine, London, UK.
- Jan 15, 2013, "Novel mechanisms of intrinsic antibiotic resistance", Centre for Infection and Immunity, Queen's University Belfast, UK.
- Nov 12, 2012: "Interactions of *Burkholderia cenocepacia* with macrophages: A two-way stream", Spanish Congress of Microbiology, Mallorca, Spain.
- Oct 31, 2012, "*Burkholderia cenocepacia*: a model opportunistic pathogen with multiple lifestyles", Keynote Lecture, XXI ALAM, Latin American congress of Microbiology, Santos, Brazil.
- Oct 30, 2012, "Novel mechanisms of antimicrobial intrinsic resistance", Round Table 1, XXI ALAM, Latin American congress of Microbiology, Santos, Brazil.
- Jun 8, 2012, "Aminoarabinose is essential for lipopolysaccharide export and intrinsic antimicrobial peptide resistance in *Burkholderia cenocepacia*", 8th International Symposium on Glycosyltransferases, Hannover, Germany.
- Jun 4, 2012, "To sleep or not to sleep: elucidating dormancy genes in *Burkholderia cenocepacia*", COST BM1003 Workshop on Molecular Determinants of Bacterial Diseases, Naples, Italy.
- Feb 26, 2012, "Challenges and solutions for *Burkholderia cepacia* infections in patients with cystic fibrosis", Essex-Kent CF Chapter, Willistead Manor, Windsor, Ontario.
- Nov 30, 2011, "Infection in patients with Cystic Fibrosis: Dissecting bacterial components that interact with host cells and possible new therapeutics", Pediatric Grand Rounds, Victoria Hospital, London, Ontario.
- Sep 1, 2011, "*Burkholderia cenocepacia* interactions with macrophages, a two-ways road", Irish Division, Society of General Microbiology, Dublin, Republic of Ireland. *Due to health problems Dr. Crystal Schmerk, a PDF in my group, delivered this lecture on my behalf.*

- 
- July 6, 2011, "Characterization of Bacterial UDP-Glucose: Undecaprenyl- Phosphate Glucose-1-Phosphate Transferases Involved in Exopolysaccharide Biosynthesis", EUROCARB 16, Sorrento, Italy.
  - May 17, 2011, "Myths and truths in the biogenesis of O antigen lipopolysaccharide", Universidad Nacional de Rosario, Faculty of Biochemistry, Rosario, Argentina.
  - Feb 13, 2011, "Uncovering strengths and weaknesses of the of the *Burkholderia cepacia* complex", 50<sup>th</sup> Anniversary of the CCFF, London CF Chapter, Robarts Research Institute, London, Ontario.
  - Feb 4, 2011, "*Burkholderia cenocepacia*, an extra-ordinary bacterial opportunist", Centre for Infection & Immunity, Queen's University, Belfast, Northern Ireland, U.K.
  - Dec 20, 2010, "*Burkholderia cenocepacia*, an opportunistic pathogen with character", Department of Microbiology, Faculty of Pharmacy, Universidad Complutense de Madrid, Madrid, Spain.
  - Dec 1, 2010, "An intracellular opportunistic pathogen that alters Rho GTPases in macrophages", Argentine Society of Biochemical Investigation and Molecular Biology, Puerto Madryn, Argentina.
  - Sep 21, 2010, "Biosynthesis of O antigens", 4<sup>th</sup> Baltic Conference on Microbial Carbohydrates, Hyytiälä Forestry Field Station, Finland, Sep. 19-22.
  - Mar 22, 2010, "*Burkholderia cenocepacia*: a model opportunistic bacterium with the ability to survive in macrophages", Biomedicine Institute, University of León, León, Spain.
  - Dec 3, 2009, "Assembly and export of lipopolysaccharide O antigen", Postdam University, Germany
  - Dec 2, 2009, "Transport and assembly of lipopolysaccharide O antigen precursors across the bacterial cell membrane", University of Milan, Milan, Italy.
  - Nov 12, 2009, "Molecular and cellular pathogenesis of *Burkholderia cenocepacia*: a model opportunistic bacterium", Department of Medical Microbiology, University of Liverpool, Liverpool, UK.
  - Nov 4, 2009, "Molecular and cellular pathogenesis of *Burkholderia cenocepacia*: a model opportunistic pathogen", Department of Chemistry of Natural Substances, Università degli Studio di Napoli Federico II, Naples, Italy.
  - Oct 29, 2009, "Transport and assembly of lipid-linked oligosaccharide LPS precursors across the bacterial cell membrane", Dipartimento de Chimica Organica e Biochimica, Università degli Studio di Napoli Federico II, Naples, Italy.
  - Oct 27, 2009, "Integral membrane proteins involved in lipid-linked O antigen assembly: The fun begins", Istituto de Biostrutture e Bioimmagini, Università degli Studio di Napoli Federico II, Naples, Italy.
  - Sep 25, 2009, "Assembly and export of lipid-link O antigen lipopolysaccharide precursors", School of Biological Sciences, University of Adelaide, Australia.
  - Sep 20-23, 2009, "Molecular and cellular pathogenesis of *Burkholderia cenocepacia*: a model opportunistic pathogen", BacPath10: Molecular Analysis of Bacterial pathogens, Barrosa Valley, South Australia.
  - Jul 24, 2009, "Biosynthesis of O antigens", Eurocarb, Vienna, Austria.
  - Jun 10, 2009, "*Burkholderia cenocepacia*: macrophage survival and cationic peptides resistance", University of Naples, Italy.
  - May 27, 2009, "The intracellular behavior of *Burkholderia cenocepacia*, an unusual bacterial opportunist", ETH, Zürich, Switzerland.
  - May 26, 2009, "*Burkholderia cenocepacia* or a psychodramatic lifestyle", Department of Botany, University of Zürich, Switzerland.
  - May 25, 2009, "*Burkholderia cepacia* complex infections in patients with cystic fibrosis", Club d'Infectologie Alpine, Annecy Hospital, Annecy, France.
  - Mar 10, 2009, "*Burkholderia cenocepacia* and its way to deal with macrophages", University of Cincinnati, Cincinnati, Ohio, USA.
  - Mar 3, 2009, "Global regulation of virulence and Type VI secretion in *Burkholderia*", Michigan State University, East Lansing, MI, USA.
  - Feb 26, 2009, "The psychodramatic life of an opportunistic pathogen: virulence vs. adaptability of *Burkholderia cenocepacia*", Department of Microbiology & Immunology, UWO.
  - Feb 6, 2009, "*Burkholderia cenocepacia*: an opportunistic macrophage survivor", Department of Biochemistry and Microbiology, University of Victoria.

- 
- Dec 2, 2008, "*Burkholderia cenocepacia*: an opportunistic pathogen with a bag of tricks to fool macrophages", Ohio State University.
  - Jun 19, 2008, "Assembly of O antigen lipopolysaccharide", FASEB Conference on Microbial Polysaccharides, Carefree, Arizona.
  - Jun 9, 2008, "My personal adventures with microbes: Lipopolysaccharides, macrophages, and opportunistic pathogens", CSM Roche Award Lecture, Annual Meeting of the Canadian Society of Microbiologists, Calgary, Alberta.
  - Mar 13, 2008, "*Burkholderia cenocepacia*, an opportunistic pathogen with many faces", Grenoble, France.
  - Mar 11, 2008, "*Burkholderia cenocepacia*, an opportunistic pathogen with many faces", Marseille, France.
  - Feb 28, 2008, "*Burkholderia cenocepacia*, an opportunistic pathogen with a twist", invited by the Graduate Students of the Department of Biology, McMaster University, Hamilton, Ontario.
  - Nov 22, 2007, "Understanding strengths and weaknesses of the *Burkholderia cepacia* complex", London CF Clinic Retreat, Hilton, London, Ontario.
  - Jun 14, 2007, "*Burkholderia cenocepacia* lipopolysaccharide", European Cystic Fibrosis Society Annual Meeting, Belek, Turkey.
  - Jun 8, 2007, "The many faces of *Burkholderia cepacia*, a 'diversiphile' opportunistic pathogen. Microbiology and Immunology Graduate Students Association, University of McGill, Montreal. Quebec.
  - May 15, 2007, "Assembly and export of O antigen lipopolysaccharide", Biotechnology Research Institute, Montreal.
  - Apr 21, 2007, "*Burkholderia cenocepacia* virulence: The unbearable lightness of surviving", International *Burkholderia cepacia* Workstudy Group Meeting. University of Michigan, Ann Arbor, USA.
  - Mar 29, 2007, "*Burkholderia cepacia*, how to be a successful opportunist", Rocky Mountain Laboratories, National Institute of Allergy and Infectious Diseases, Hamilton Montana, USA.
  - Mar 15, 2007, "Persistence and Gene Plasticity of *Burkholderia* species", University of Pavia, Pavia, Italy.
  - Mar 15, 2007, "Survival strategies of *Burkholderia cenocepacia* within macrophages", University of Pavia, Pavia, Italy.
  - Dec 8, 2006, "Antimicrobial defenses and the opportunistic bacterium *Burkholderia cenocepacia*", University of Calgary, Alberta.
  - Dec 4, 2006, "Membrane proteins involved in the Export of O antigen lipopolysaccharide", Center for Advanced Research in Biotechnology, University of Maryland, Rockville, Md, USA.
  - Dec 1, 2006, "Structure-function of ADP-heptose biosynthesis for core lipopolysaccharide assembly in *Escherichia coli* and *Burkholderia cepacia*", 15<sup>th</sup> Mini-symposium of the Collaborative Research Grant 470 in Hamburg, Germany.
  - Oct 25, 2006, "*Burkholderia cepacia* complex: bacterial opportunists with a psychodramatic lifestyle", Latin-American Congress of Microbiology, Pucón, Chile.
  - Oct 12, 2006, "*Burkholderia cenocepacia*: an opportunistic bacterium that fools macrophages", University of Alberta, Edmonton.
  - Jun 18, 2006, "*Burkholderia cepacia*, a bacterial opportunist", Annual Meeting of the Canadian Society of Microbiologists, London, Ontario.
  - May 10, 2006, "*Burkholderia cepacia*, an opportunistic survivor to antimicrobial peptides and macrophages", University of Calgary/University of Alberta 12th Biennial Conference on Infectious Diseases, Banff, Alberta.
  - May 12, 2005, "The wonderful journey of a bacterial glycolipid across two membranes", Norwegian Veterinary School and University Hospital, University of Oslo, Norway.
  - May 12, 2005, "Persistence and perseverance: How *Burkholderia* manage to survive?", Norwegian Veterinary School and University Hospital, University of Oslo, Norway.
  - Mar 10, 2005, "Bacterial persistence meets researcher's perseverance: Survival of *Burkholderia cepacia* within phagocytic cells", Robarts Research Institute. London.
  - Feb 18, 2005, "*Burkholderia cepacia*, an underrated pathogen but a great survivor", Department of Medical Microbiology and Immunology, Medical College of Ohio, Toledo, Ohio, USA.
  - Feb 17, 2005, "*Burkholderia cepacia*, an underrated pathogen but a great survivor", Department of Microbiology and Immunology, University of Michigan, Ann Arbor, MI, USA.

- Nov 9, 2004, "The travels of lipopolysaccharide across two bacterial membranes", Department of Microbiology and Immunology, Wayne State University, Detroit, MI, USA.
- Aug 2-3, 2004, "Bacterial persistence vs. researcher's perseverance: Molecular pathogenesis of *Burkholderia cepacia*", NIAID/ORD *Burkholderia* Conference, Bethesda, USA.
- Nov 13, 2003, "*Burkholderia cepacia*: an emerging opportunistic pathogen", Hospital de Niños Ricardo Gutierrez, Buenos Aires, Argentina.
- May 11, 2004, "*Burkholderia cepacia*, an opportunistic pathogen that humbles geneticists", Department of Pathobiology, Ontario Veterinary College, University of Guelph.
- Nov 12, 2003, "Genetics of O antigen lipopolysaccharide assembly", Fundación Instituto Leloir, Buenos Aires, Argentina.
- Nov 7, 2003, "*Burkholderia cepacia*: an opportunistic pathogen", XXV Chilean Congress of Microbiology, Antofagasta, Chile.
- Nov 6, 2003, "Export of O-specific lipopolysaccharide", XXV Chilean Congress of Microbiology, Antofagasta, Chile.
- Sep 18, 2003, "Biosynthesis of O antigen lipopolysaccharide", Department of Microbiology and Immunology, University of Illinois at Urbana-Champaign, USA.
- March 24, 2003, "Signature-tagged mutagenesis and genetic tools for manipulation of *Burkholderia cepacia*", Burkholderia Genomes Workshop, The Wellcome Trust Genome Campus, Hinxton, Cambridgeshire, U.K.
- Feb 24, 2003, "Molecular genetics in *Burkholderia cepacia*", CF Rounds, Hospital for Sick Children, Toronto.
- Jan 30, 2003, "LPS Trek: The wonderful voyage of a bacterial glycolipid across two membranes", Department of Microbiology and Immunology, UWO.
- May 3, 2002, "Bacterial opportunism, a challenge for the 21<sup>st</sup> century". Mini-Symposium celebrating the Official Opening of the Institute of Infection and Immunity, University of Western Ontario.
- Apr 22, 2002, "*Burkholderia cepacia*, an opportunistic pathogen with character", University of Calgary/University of Alberta 10th Biennial Conference on Infectious Diseases, Banff, Alberta.
- Apr 12, 2002, "Molecular genetics and biology of *Burkholderia cepacia*, an opportunistic pathogen", Antimicrobial Research Centre's Spring Symposium, McMaster University, Hamilton, Ontario.
- Feb 25, 2002, "*Burkholderia cepacia*, a challenging opportunistic pathogen for cystic fibrosis patients", CF Rounds, Hospital for Sick Children, Toronto.
- Feb 11, 2002, "Export of lipopolysaccharides", Department of Biochemistry, University of Wisconsin, Madison, Wisconsin, USA.
- Dec 12, 2001, "Pathways for assembly and export of lipopolysaccharide", Department of Microbiology and Infectious Diseases, University of Calgary, Calgary, Alberta.
- Jun 21, 2001, "*Burkholderia cepacia*: Biology of an emergent opportunistic pathogen capable of intracellular survival in phagocytes", Department of Microbiology and Immunology, Queen's University, Kingston, Ontario.
- Sep 26, 2001, "The ins and outs of bacterial lipopolysaccharide", Mini-Symposium on Periodontal Health and Systemic Disorders, Faculty of Medicine and Dentistry, UWO.
- May 3, 2001, "Travel across two membranes: Assembly of lipopolysaccharide", Microbiology Colloquia, Santiago, Chile.
- Mar 29, 2001, "The path across two membranes: how does lipopolysaccharide get to the bacterial surface?", Department of Microbiology and Immunology, McGill University, Montreal, Quebec.
- May 19, 2001, "Cystic fibrosis and infections by *Burkholderia cepacia*", Kinsmen District One Annual Meeting, Exeter, Ontario.
- Jan 11, 2001, "Export of Lipopolysaccharide: To flip or not to flip", Department of Microbiology and Immunology, UWO.
- Dec 5, 2000, "Genetics of lipopolysaccharide export", Department of Biochemistry, Queen's University, Kingston, Ontario.
- Nov 9, 2000, "Role of lipopolysaccharide in the intracellular survival of *Burkholderia cepacia* within macrophages and amoebae, Workshop on "Microbiology in CF", North American Cystic Fibrosis Conference, Baltimore, Maryland.
- Aug 14, 2000, "Genetics of lipopolysaccharide assembly in *Escherichia coli* K-12", In "*Microbial polysaccharides of medical, agricultural, and industrial importance*", 2000 FASEB Summer

Research Conferences, Aug 13-18, 2000, Copper Mountain, Colorado.

- Jul 20, 2000, "Pathogenesis of *Burkholderia cepacia*", Microbiology Colloquia, Santiago, Chile.
- May 22, 2000, "Intracellular survival of *Burkholderia cepacia* in amoebae and macrophages in the absence of replication", American Society for Microbiology, 100<sup>th</sup> General Meeting, Los Angeles, California; Symposium on "Intracellular life of extracellular microorganisms", Session 64.
- Apr 19, 2000, "Biosynthesis of lipopolysaccharides", Kelco Biopolymers, San Diego, California.
- Apr 19, 2000, "Pathogenesis of *Burkholderia cepacia*", San Diego Microbiology Group, Scripps Research Institute, La Jolla, California.
- Feb 28, 2000, "Intracellular survival of *Burkholderia cepacia*", Department of Microbiology, University of Illinois, Chicago.
- Jan 27, 2000, "Beyond outbreak. Pathogens, both old and new, provide insights and challenges for the new millennium", Department of Microbiology and Immunology, Open House, UWO.
- Jun 5, 1999, "Microorganisms as friends and foes", Future in Research: Science and Technology Conference, Faculty of Science and Let's Talk Science, UWO.
- Apr 14, 1999, "Survival of *Burkholderia cepacia* in amoebae and macrophages", Department of Molecular Microbiology, Washington University School of Medicine, St. Louis, Missouri.
- Mar 18, 1999, "*Burkholderia cepacia*: an emerging opportunistic pathogen that survives within amoebae and macrophages", Department of Medical Microbiology, University of Manitoba, Winnipeg, Manitoba
- Sep 12-15, 1998, "Genetics of heptose biosynthesis in enteric and non-enteric bacteria", The 5th Conference of the International Endotoxin Society, Santa Fe, New Mexico.
- Sep 9, 1998, "Intracellular survival and multiplication of *Burkholderia cepacia* in amoebae and macrophages", Instituto de Investigaciones Bioquímicas, Fundación Campomar, Buenos Aires, Argentina.
- Sep 8, 1998, Keynote address, "Recent advances in biosynthesis and transport of lipopolysaccharides", VIIIth Argentine Congress of Microbiology, Buenos Aires, Argentina.
- Sep 8, 1998, "Pathogenesis of *Burkholderia cepacia* infections", Round Table on Cystic Fibrosis, VIIIth Argentine Congress of Microbiology, Buenos Aires, Argentina.
- Sep 8, 1998, "Virulence properties of uropathogens", Round Table on Urinary Tract Infections, VIIIth Argentine Congress of Microbiology, Buenos Aires, Argentina.
- Sep 7, 1998, "Lipopolysaccharide: Genetics, regulation and transport". Institute of Biotechnology, University of San Martin, Buenos Aires, Argentina.
- May 26, 1998, "Pathogenesis of *Burkholderia cepacia*", Research Forum in honor of Professor R.G.E. Murray, Department of Microbiology and Immunology, UWO.
- May 2, 1998, "Intracellular survival and multiplication of *Burkholderia cepacia* in amoebae and macrophages", Canadian Bacterial Diseases Network Annual Meeting, Banff, Alberta.
- Feb 28, 1997, "Potential clinical applications of lipopolysaccharide and its biosynthetic enzymes", Children's Hospital, University of British Columbia, Vancouver, British Columbia.
- Feb 27, 1997, "Bacterial lipopolysaccharides: gene regulation and transport", Department of Microbiology, University of British Columbia, Vancouver, British Columbia.
- Feb 13, 1997, "Bacterial lipopolysaccharides: gene regulation and transport", Department of Microbiology and Infectious Diseases, Calgary University Health Sciences Centre, Calgary, Alberta
- Feb 2-7, 1997, "Molecular and biochemical characterization of genes involved in the biosynthesis of the *Escherichia coli* inner core lipopolysaccharide". Gordon Research Conference in Glycobiology, Ventura, California.
- Dec 3, 1996, "Lipopolysaccharide: Genetics meets Biology". Centre for Study of Host Resistance, Montreal General Hospital, Montreal, Quebec.
- Sep 17, 1996, "Transcriptional and post-transcriptional regulation of lipopolysaccharide biosynthesis genes", Department of Biology, McMaster University, Hamilton, Ontario.
- Nov 9, 1995, "Bacterial lipopolysaccharides: From biosynthetic genes to rats with intestinal transplants", Department of Microbiology & Immunology, UWO.
- May 10, 1995, Keynote Address, "Novel endotoxin inhibitors to control sepsis", VIIth Argentine Congress of Microbiology, Buenos Aires, Argentina.
- May 9, 1995, "Advances in genetics of lipopolysaccharides", VIIth Argentine Congress of Microbiology, Buenos Aires, Argentina.
- Feb 1995, "Molecular genetics of bacterial lipopolysaccharides", Molecular Biology Open House, Spencer Hall, London, Ontario.

- May 26, 1994, "Molecular approaches to serotyping of *E. coli* and *Shigella*", American Society for Microbiology, Annual General Meeting, Symposium on Molecular Epidemiology, Session 185.
- Dec 13, 1993, "Molecular genetics and pathogenicity of bacterial lipopolysaccharides", Department of Microbiology, Immunology, and Parasitology, School of Medicine, University of Buenos Aires, Argentina.
- Nov 24, 1992, "Bacterial Genetics as a model for human infectious diseases", Gordon J. Mogenson Memorial Research Forum, Faculty of Medicine, UWO.
- Jan 28, 1992, "Overview on Lipopolysaccharides", Research Lecture Series, Victoria Hospital, London, Ontario.
- Jan 16, 1992, "Genetics of the O-specific side chain lipopolysaccharide biosynthesis in *Escherichia coli*", Departments of Chemistry and Biology, University of Waterloo.
- Jun 3, 1991, "Pathogenicity and molecular genetics of O-side chain lipopolysaccharides", CSM Symposium on "Virulence and Survival Strategies of *Escherichia coli*", Annual Meeting of the Canadian Society of Microbiologists, London.
- Nov 9, 1990, "Molecular Genetics of O-side chain lipopolysaccharides". Department of Biochemistry, UWO, Biomembranes Research Discussion Group.
- Nov 29, 1989, Department of Microbiology and Microbiology, Queen's University, Kingston, Ontario. "Genetic analysis of the O7-polysaccharide biosynthesis region in septicemic *Escherichia coli* O7:K1 strains".
- Sep 22, 1988, Department of Microbiology, University of Guelph, Guelph, Ontario. "Molecular genetics of O7-lipopolysaccharide genes of *Escherichia coli* K1 septicemic strains".

### Public Lectures

- Oct 6, 2017, "PhD Student/Supervisor expectations and conflict resolution"; The Graduate School Queen's University.
- Nov 21, 2012, Research on Cystic Fibrosis showcase, Centre for Infection and Immunity, Queen's University Belfast.
- Feb 26, 2012, Kent County Cystic Fibrosis Foundation Chapter
- Jan 29, 2011, London Cystic Fibrosis Foundation Chapter.
- Jan 23, 2008, London Cystic Fibrosis Foundation Chapter.
- Sep 19, 2002, Kitchener-Waterloo Cystic Fibrosis Foundation Chapter.
- Jul 7 2002, Summer Academic Orientation Program, University of Western Ontario.
- Jun 8 2002, invited speaker representing the Canadian Cystic Fibrosis Foundation at the WKS-Financial CF Fundraiser Gala, Stratford, Ontario.

### COMMITTEE MEMBERSHIP

#### Queen's University Belfast

- |        |   |
|--------|---|
| 2019   | <u>Member</u> , Liaison focus group on BBSRC funding, SMDB, QUB   |
| 2019   | <u>Member</u> , Health and Safety Management Board.   |
| 2018   | <u>Judge</u> , "Three Minute Thesis" final, The Graduate School, May 16.  |
| 2016   | <u>Chair</u> , University's Biological and Infectious Agents Advisory Committee (BIAAC).  |
| 2015   | <u>Member</u> , Selection Committee, REF:15/103980-Clinical Senior Lecturer/Lecturer in Microbiology, Centre for Medical Education, School of Medicine, Dentistry and Biomedical Sciences |
| 2015   | <u>Contact person</u> , Lecturer/Senior Lecturer in Microbial Pathogenesis, Centre for Infection and Immunity, School of Medicine, Dentistry and Biomedical Sciences                      |
| 2014 - | <u>Member</u> , Internationalization Working Group, School of Medicine, Dentistry and Biomedical Sciences   |
| 2014   | <u>Member</u> , Subcommittee to advise on Research Connectivity for the University Research Strategic Plan.   |
| 2013 - | <u>Member</u> , Pool of Assessors for Allegations of Misconduct and Research  |
| 2012   | <u>Member</u> , America's Working Group, QUB.   |

#### Wellcome-Wolfson Institute for Experimental Medicine (formerly Centre for Infection and Immunity)

- 2020 - COVID-19 Coordinator.



2020 - Member, COVID-19 Recovery Committee  
 2019-22 Member, Mentoring and Probationary Committee for Dr. Rebecca Call  
 2019-22 Chair, Mentoring and Probationary Committee for Dr. Bianca Plouffe  
 2019 - Member, Internal Grant Peer Review Panel  
 2019 Chair, Appraisals panel for 3rd Y PhD students  
 2019 Member, Appraisals panel for 2nd Y PhD students  
 2017 Member, WWIEM Rep to the Genomics initiative on the Microbiome, QUB.  
 2017 - 20 Chair, Seminars Programme  
 2017 Chair, Appraisals panel for 3rd Y PhD students  
 2016- Chair, Health and Safety Committee  
 2016-20 Member, Mentoring and Probationary Committee for Dr. Gunnar Schroeder Hobley  
 2016-18 Chair, Mentoring and Probationary Committee for Dr. Laura Hobley  
 2016 Delegate, representative for WWIEM at "Science and Stormont", Northern Ireland Parliament Buildings, Belfast, Oct 10.  
 2016 Chair, Appraisals panel for 2nd Y PhD students  
 2015 Chair, Appraisals panel for 3rd Y PhD students  
 2015- Chair, Ken B. Fraser Memorial Symposium organizing committee  
 2014-16 Co-Chair, Postdoctoral Fellowship Committee  
 2013-16 Member, Health and Safety Committee  
 2013-16 Biosafety Officer, GMO  
 2013-14 Chair, Seminars Programme  
 2013- Member, Postgraduate Education and Training Committee  
 2012 Assessment of Senior Postdoctoral Research Associates.

### University of Western Ontario (UWO)

2006-09 Member, University Research Board, UWO.  
 2004 Member (*ad-hoc*), Task Force on Graduate Studies, UWO.  
 1998-01 Member, Subcommittee on University Planning and Development (SUPAD).  
 (Functions of the Committee: Review of campus-wide grant applications to the Academic Development Fund).  
 1998-01 Member, Grievance Committee, Faculty of Graduate Studies, UWO.  
 1995-00 Member, Biosciences Division, Faculty of Graduate Studies, UWO.  
 1995 Member, Dean's ad hoc Committee, PhD Thesis by Mr. Shigiu Liu, Zoology, UWO; Faculty of Graduate Studies.  
 1995-96 Co-director, Collaborative Graduate Program in Molecular Biology.  
 1991-93 Member, Steering Committee, Collaborative Graduate Program in Molecular Biology.  
 (Functions of the Committee: selection of student and faculty applications for admission to the Program, organization of course offerings, booklet and open house).  
 1991 Member, Selection Committee for a PhD Research Position in Microbiology, Victoria Hospital.

### Schulich School of Medicine, UWO

2008 Member, Search Committee for Tier II Canada Research Chair in Viral Pathogenesis  
 2008 Member, Calder's Scholarship Review Committee  
 2008 Member, Search Committee for Medical Director of the Multi-Organ Transplant Program  
 2007 Member, Task Force to Advise the Dean on the reorganization of the Robarts Research Institute  
 2005 Chair, Task Force on Core Facilities, Strategic Planning Committee.  
 2005 Member, Strategic Planning Committee.  
 2005-08 Member, Resident Research Clinical Program Selection Committee  
 2004-06 Member, Tactical Planning Committee.  
 2004 Chair, Basic Sciences Chairs Committee.  
 2004 Member, Dean's Advisory Committee  
 2004 Member, Selection Committee for Associate Dean (Research)  
 2004 Member, Faculty Selection Committee for the UWO Faculty Scholar Program and Distinguished University Professorships.

---

2004	<u>Member</u> , Search Committee for the Tania Schulich's Chair in Mental Health
2004	<u>Member</u> , Search Committee for the Sheldon Weinstein Chair in Diabetes Research.
2004	<u>Member</u> , Search Committee for the Jacob Wolfe Chair in Functional Genomics, CRC in Functional Genomics and CRC in Bioinformatics.
2001-02	<u>Member</u> , Selection Committee for Chairman, Department of Microbiology & Immunology, UWO.
2001	<u>Member</u> , Special Dean's Committee to Assess Scientific Integrity
1999	<u>Member</u> , Selection Committee for Chairman, Department of Anatomy & Cell Biology, UWO.
1997-00	<u>Member</u> , MD/PhD Selection Committee (Functions of the Committee: screening of applicants, mentorship, and program design)
1996	<u>Member</u> , Selection Committee for Chairman, Department of Microbiology & Immunology, UWO.
1996	<u>Member</u> , Selection Committee for Chief of Microbiology, London Health Science Centre.
1995	<u>Chair</u> , External Review of the Division of Clinical Microbiology, UWO.
1995	<u>Member</u> , Selection Committee for Ministry of Health Career Scientist Award.
1992	<u>Member</u> , Dean's Council for Change, since October 1992. (Functions of the Committee: Coordination of the Strategic planning for the Faculty of Medicine)
1989	<u>Member</u> (ad hoc), Subcommittee of the Biosafety Committee.

### **Department of Microbiology and Immunology, UWO**

2010-12	<u>Chair</u> , Appointments Committee
2010-12	<u>Chair</u> , Workload Committee
2010-12	<u>Chair</u> , Academic Performance Evaluation Committee.
2010-14	<u>Member</u> (ex-officio), all departmental committees.
2004-08	<u>Member</u> (ex-officio), all departmental committees.
2004-08	<u>Chair</u> , Appointments Committee
2004-08	<u>Chair</u> , Workload Committee
2004-08	<u>Chair</u> , Academic Performance Evaluation Committee.
1995-00	<u>Chair</u> , Graduate Studies Committee. (Functions of the Committee: Coordination of offers of admission, funding policy issues on the departmental graduate program, ranking of graduate students for external awards).
1995-96	<u>Member</u> , External Seminars Committee. (Functions of the Committee: arrange list of potential external speakers).
1996-00	<u>Member</u> , Division of Clinical Microbiology.
1993-03	<u>Member</u> , Promotion and Tenure Committee.
1992-95	<u>Member</u> , Research Committee. (Functions of the Committee: Coordination of internal grant reviewing, policy issues regarding scientific directions for the Department, scientific review of applications for departmental appointments, organization of departmental research forum).
1991-95	<u>Coordinator</u> , Microbiology 541y Seminar Series.
1990-95	<u>Member</u> , Graduate Studies Committee. (Functions of the Committee: reviewing of Graduate Students Applications, policy issues on the departmental graduate program, ranking graduate students for external awards).
1988-92	<u>Member</u> , Undergraduate Curriculum Committee. (Functions of the Committee: course planning and designing, students counseling).
1988-90	<u>Member</u> , External Seminars Committee. (Functions of the Committee: arrange list of potential external speakers).

### **Other**

2007	<u>Panel member</u> , Consultation Meeting on the Canadian Microbiome Initiative, Institute of Infection and Immunity, Canadian Institutes of Health Research, Vancouver, Sep 27.
1998-00	<u>Acting Director</u> , Division of Clinical Microbiology, Department on Microbiology and Immunology.
1997-00	<u>Director</u> , London and Region Infectious Diseases Program. (Goals of the Program:

coordination and integration of basic and clinical research efforts, epidemiology of infectious disease in Southwestern Ontario, and community outreach).

## ***SUPERVISION OF TRAINEES***

### ***Current***

#### ***Research Technician***

#### ***Postdoctoral Research Assistant***

J. Monjaras Feria, 2017 -

K. Turton, 2019 -

#### ***Post-Graduate Students***

##### ***Primary Supervisor:***

H. Parks (QUB), PhD Student, 2021-24.

P. Zarodkiewicz (BSc Trinity College; MSc, QUB), PhD student, 2020-23.

L. Macdonald (BSc University of St. Andrews), PhD student, 2020-23.

A. Anderson (MSci Queen's University), PhD student, 2021-24

##### ***Secondary Supervisor:***

P. Bendale, PhD student, 2021-24.

A., Lee, PhD student, 2021-24.

#### ***Master's Students***

J. Nesbitt, MSci, 2023-24

Sarah O'Reilly, MSc Exp. Med., 2023-24

#### ***Work placement Students***

R. McClenaghan, SBS, QUB, 2022-23

#### ***3rdY Project Students***

L. McMinn, Biomedical Sciences Programme, QUB, 2023-24

#### ***Visiting Student***

Aurelia Catherine, Indonesia, 2023

### ***Past Trainees***

#### ***Research Associates***

K. Wojtania, 2022-23

I. Garcia-Romero, Research Technician, 2018-22

T. Panova, Research Technician, 2021-22

C. McVicar, Research Technician, 2020-21.

J. Torres-Bustos, Research Assistant, 2012-16.

K. Nurse, Research Technician, UWO, 2010-15.

W. Cladman, Research Technician, UWO, 2010.

A. Roa-Rosales, Research Technician, UWO, 2008-09.

C. James, PhD, Research Technician, UWO, 2008.

J. Lehrer, MSc Research Technician, UWO, 2006.

D. Stoykova, Research Technician, UWO, 2005-06.

S. Loutet, Research Technician, UWO, 2003-04.

K. Vigeant, Research Technician, UWO, 2003-04.

L. Santamaria, Research Technician, UWO, 2003.

J. Vicarioli, Research Technician, UWO, 2002-03.

L. Dafoe, Research Technician, UWO, 1989-96.  
C.L. Marolda, Biochemist, Research Associate, UWO, 1988-10.

### Fellows

G. Wang, Postdoctoral Research Associate, 2018-22.  
M. Dadashpour, Postdoctoral Research Associate, 2021-22.  
M. NaGuib, PhD (QUB), Postdoctoral Research Associate, 2019.  
S-Q. An, Postdoctoral Research Associate, 2017-18. Present position: *Regional Products Manager, Novogen Europa, Cambridge, and Affiliated position at University of Southampton, UK.*  
O. El-Halfawy, MSc (Alexandria University, Egypt), PhD, Postdoctoral Fellow, 2014-15.  
C. Mujica Troncoso, PhD (University Andres Bello, Chile), Postdoctoral Research Associate, 2011-15. Present Position: *Chief Technology Officer Biomeresources, Viña del Mar Chile and Adjunct Professor (Teaching), Universidad Andres Bello, Viña del Mar, Chile.*  
G. Pradenas, PhD (Univ. of Santiago de Chile, Chile), Postdoctoral Research Associate, 2013-15. Present Position: *Professor (Teaching), Universidad Mayor, Santiago, Chile.*  
K. Patel, PhD (University of Western Ontario), Postdoctoral Research Associate, 2012-14. Present Position: *Independent Medical Writer at Synthesis Medical Writing Ltd., Manchester, UK.*  
A. Hanuszkiewicz, PhD (University of Borstel, Germany), Postdoctoral Research Associate, QUB, 2009-14. Present Position: *Technical Applications Specialist, Eppendorf Nordic, Hamburg, Germany.*  
F. Tavares, PhD (University of Mexico), 2012-15.  
A. Andrade, PhD (University of Mexico), 2011-15. Present position: Assistant Professor, Monterrey, Mexico.  
X. Ruan, PhD (Tsinghua University), 2008-14.  
C. Schmerk, PhD (University of Victoria), **Supported by a Fellowship from Cystic Fibrosis Canada**. 2010-14. Present position: *Laboratory Manager, UWO, London, Canada.*  
D. Aubert, PhD (University of Paris), **Supported by a Fellowship from CIHR**. 2005-13. Present position: *Infection Prevention Division, 3M Canada, London, Ontario.*  
M. Hamad, Ph.D (University of Nebraska), 2008-13.  
R. Rosales-Reyes, PhD (University of Mexico), 2009-12. Present position: Professor, Universidad Autónoma de Mexico.  
S. Saldías, PhD, Biochemist (University of Chile), 2007-11. **Supported by a Fellowship from the Canadian Cystic Fibrosis Foundation** Present position: *Research Lab Director & Special Projects at A & L Canada Laboratories Inc.*  
S. Loutet, PhD (University of Western Ontario), **Supported by a Fellowship from CIHR**. 2010-11.  
X. Ortega-Alonso, PhD (University of Chile), 2002-08. Present position: *Professor, University Andrés Bello, Viña del Mar, Chile.*  
J. Perez-Donoso, PhD (University of Santiago, Chile), 2007-08. Present position: *Professor, Universidad Andres Bello, Chile.*  
Karen Keith, PhD (Imperial College, U.K), 2004-08; **Supported by a Fellowship from the Canadian Cystic Fibrosis Foundation**. Present position: *Sr Clinical Oncology Assay Specialist at Thermofisher Scientific*  
S. Cardona, PhD (University of Chile), **Supported by a Fellowship from the Canadian Cystic Fibrosis Foundation**. 2002-06. Present position: *Professor, Department of Microbiology, University of Manitoba.*  
L. Tatar, PhD (University of Missouri at Kansas City), 2002-06. Present position: *Teaching Instructor, Dalhousie University, Halifax, Nova Scotia.*  
M. Lefebre, PhD (UWO), 2004. Present position: *Director-Microbiology at Nobelex Biotech, Inc. Toronto, Ontario, Canada*  
C. Fehlner-Gardiner, PhD (University of Western Ontario), 1998-2000. **Supported by a Fellowship from the Canadian Cystic Fibrosis Foundation**. Present position: *Research Scientist, Animal Diseases Research Institute, Canadian Food Inspection Agency, Ottawa.*  
F-S. Wang, PhD (Pennsylvania State University), 1997-99.  
M. Handelsman, PhD (University of Guelph), 1990-92. **Supported by a Postdoctoral Fellowship from the Ontario Ministry of Health.**

### PhD Students

- N. Feldman (Univ. of Buenos Aires, Argentina), PhD Student, 2019-22.  
N. Adade, Univ. of Ghana, PhD student, 2019-22  
Caelainn McAloran, PhD Biological Sciences, 2020-23  
G. Parau (BSc Biomedical Sciences, QUB), PhD student, 2017-22.  
M. NaGuib, MSc (Alexandria University, Egypt), PhD Student, 2015-19.  
F. Bisaro, PhD Student, 2015-19.  
H. Amr, PhD Student, 2018-19  
C. Webb, PhD Student, 2018-19  
D. Storey, PhD Student, 2016-19.  
H. Carrasco, PhD Student, 2014-18.  
A. Ford, PhD Student, 2013-16.  
Y. Fathy, MSc (Alexandria University, Egypt), PhD Student, 2013-16.  
M. Khodai-Kalaki, MSc (UWO), 2011-15.  
O. El-Halfawy, MSc (Alexandria University, Egypt), 2010-14. **Supported by OGS award**  
S. Furlong, B.Sc. (UWO), 2008-13 -. **Supported by OGSST and OGS awards.** Present position:  
*Raw Materials Receiving Lab Manager - Quality & Food Safety at Royal Canin, Toronto, Canada.*  
A. Valderrey, Visiting PhD student (Department of Microbiology II, Universidad Complutense de Madrid, Spain), Apr-Jul 2012.  
J. Tolman, B.Sc. (Carlton), 2006-11. **Supported by NSERC and CCFF awards; M&I entrance Award winner.**  
K. Patel, B.Sc. (University of Waterloo), 2005-10. **Supported by OGSST award.**  
M. Al Zayer, MSc (Texas), 2010-11. Present position: *Senior Medical Technologists, Saudi Arabia.*  
S. Loutet, B.Sc. (University of British Columbia), 2004-10. **Supported by NSERC award; M&I entrance Award winner.**  
A. Hoare, Biochemist (University of Chile), (co-supervised with Dr. I. Contreras), 2006-10.  
D. Bravo, Biochemist (University of Chile), (co-supervised with Dr. I. Contreras), 2006-09. Present position: *Associate Professor, Universidad de Chile*  
K. Maloney, B.Sc. (UWO), 2002-08; **Supported by CCFF award.** Present position: *R&D Project Manager at Abbott Point of Care, Nepean, Ontario, Canada.*  
R. Flannagan, MSc (UWO), 2003-07. **Supported by OGSST and CCFF award; M&I entrance Award winner; 2006 John A. Thomas Award winner.**  
J. Lamothe, B.Sc. (Laval University), 2002-07. **Supported by CCFF and CIHR doctoral Canada Graduate Award; Present position:** *Vice President Regulatory Affairs & Quality Assurance at Spinal Elements, San Diego, California.*  
F. McArthur, MSc (Mt. Allison University), 2000-05. **Supported by OGSST award; Present position:** *Laboratory Group Leader - Microbiology, Durham Regional Environmental Laboratory, Ontario.*  
S. Saldías, Biochemist (University of Chile), (co-supervised with Dr. I. Contreras) 2001-04.  
E. Vinés, Biochemist (University of Chile), 2000-04; Present position: *Professor, University Andrés Bello, Viña del Mar, Chile*  
M. Lefebre, B.Sc. (UWO), 1998-04. **Supported by NSERC PGSA and CIHR Doctoral awards; nominated for the Collip Medal Award, Stephen D. Poland Award winner.**  
T. A. Hunt, MSc (University of Calgary), 2000-03. **Supported by CCFF award; Present position:** *Associate Professor and Vice Chair at Oakland University William Beaumont School of Medicine, Detroit, USA.*  
A. Amer, MD, MSc (Cairo University), PhD Student, 1997-02. **Supported by OGS Award.** Present position: *Professor, Division of Pulmonary, Allergy, Critical Care & Sleep Medicine, Ohio State University, Columbus, Ohio.*  
J. S. Brooke, MSc (UWO), 1992-96. **Supported by OGS and NSERC awards.** Award winner: Graduate Student Award, Canadian Society of Microbiologists, 1995. Present position: *Associate Professor, Department of Biology, DePaul University at Chicago.*  
J. A. Thomas, D.V.M. (University of Guelph), 1990-94. Award winner: Graduate Student Award, Canadian Society of Microbiologists, 1992; **Supported by an OGS Award.** Deceased December 1993.

### MSc Students

- C. McGenity, MSci Biological Sciences, 2021-22  
R. Dwane, MSc Experimental Medicine, QUB, 2020-21

- A. Anderson, MSci, Biochemistry, School of Biological Sciences, QUB, 2020-21.  
P. Zarodkiewicz, MSc, Molecular Biology and Biotechnology, QUB, 2019.  
H. Parks, MSci, Biochemistry, School of Biological Sciences, QUB, 2018-19.  
C. Biamis, MSci, Biochemistry, School of Biological Sciences, QUB, 2018-19.  
M. Gilmore, MSci Biochemistry, School of Biological Sciences, QUB, 2017-18.  
A. Sterling, MRes Translational Medicine, School of Medicine, Dentistry and Biomedical Sciences, QUB, 2017-18.  
S. Keenan, MRes Translational Medicine, School of Medicine, Dentistry and Biomedical Sciences, QUB, 2016-17.  
S. Paterson, MSci Biochemistry, School of Biological Sciences, QUB, 2016-17.  
D. Guerreiro, (University of Lisbon), MSc Student 2015-16.  
S. O'Brien, MRes Translational Medicine, School of Medicine, Dentistry and Biomedical Sciences, QUB, 2013-14.  
S. Chakravarty, MRes in Translational Medicine, School of Medicine, Dentistry and Biomedical Sciences, QUB, 2013-14.  
T. Schmidt, MSc Diploma Thesis, Free University of Berlin, 2013-14  
S. Lamothe, B.Sc. (UWO), MSc Student, 2011-13.  
H. Ostapka, B.Sc. (UWO), MSc Student, 2010-13.  
C. Clarke, B.Sc. (Guelph), MSc Student, 2009-11.  
A. Skeldon, B.Sc. (Toronto), MSc Student, 2008-10. **Supported by a CIHR award.**  
D. Hynes, B.Sc. (Queen's), MSc Student, 2007-09. **Supported by a CCFW award.**  
R. Newman, B.Sc. (UWO), MSc Student, 2007-09.  
J. Haggerty, B.Sc. (UWO), MSc Student, 2006-08. **M&I entrance Award winner.**  
M. McGarry, B.Sc. (University of Western Ontario), MSc student, 2004-07. **Supported by an OGS award.**  
P. Lahiry, B.Sc. (University of Waterloo), MSc student, 2005-06. **Supported by a CIHR Canada Graduate award.**  
J. Lehrer, B.Sc. (Concordia University), MSc student, 2003-05.  
K. Vigeant, B.Sc. (University of Guelph), MSc student, 2001-03.  
R. Flanagan, B.Sc. (UWO), MSc student (co-supervised with Dr. S. F. Koval), 2000-02-. **Supported by an NSERC PGSA award.**  
R. Payne, B.Sc. (University of Southern California), MSc student, 1999-02.  
L. Singh (Saini), B.Sc. (University of Guelph), MSc Student, 1996-99.  
J. Gaspar, B.Sc. (University of Waterloo), MSc Student, 1994-97.  
M. Grattan, B.Sc. (UWO), MSc Student (Co-supervised with A. Ridgway), 1991-92.

#### Visiting International Researchers

- M. Hamad, Assistant Professor, UAE, Jun-Aug, 2019.  
A. Isawumi, WACCBIP, Univ. of Ghana, 2018-19  
M. Hamad, Assistant Professor, UAE, Jun-Aug, 2018.  
C. Olagnon, PhD student, BOKU, Vienna, Austria, May-Jul 2018  
I. Chapartegui-Gonzalez, PhD student, IDIVAL, Santander, Spain, Jun-Jul 2018  
S. Tsui, PhD student, University of Sao Paulo, Brazil, May-Dec, 2018.  
M. Hamad, Assistant Professor, UAE, Jun-Aug, 2018.  
S. Tokajian, Associate Professor, Lebanon American University, May-Aug 2017.  
J. Ramos Vivas, Researcher, IDIVAL, Santander, Spain, Sep 2016.  
J. Roszkowiak, Visiting PhD Student, Wroclaw University, Sep-Dec 2015  
E. Perrin, PhD (University of Florence), Visiting Fellow (FEMS Award), 2015.  
R. Maldonado, Visiting PhD Student, Portugal, Feb-Aug 2014  
L. Kalferstova, Visiting PhD Student, Prague, Sep-Nov, 2014.  
R. Dennehy, (Institute of Technology, Tallaght, Dublin), Visiting Student, Oct-Nov 2012.  
M. Alati, Visiting MSc (Department of Biotechnology, University of Milano-Bicocca), Sep-Dec 2011.  
A. Valderrey, Visiting PhD student (Department of Microbiology II, Universidad Complutense de Madrid, Spain), Jan-Apr 2011.  
E. Lameignere, PhD (Université Joseph Fourier, Grenoble, France), Visiting PhD student, 2007.  
S. Sarnacki, B.Sc. (University of Buenos Aires), Visiting PhD student, 2005-06.  
S. Alvarez, PhD, Lecturer (University of Chile), Visiting Fellow, 2005.

- M. Novoa-Garrido, visiting PhD Student, Norwegian Veterinary College, Feb 2004/Feb 2005. Present position: *Researcher, BioForsk Nord, Bodø, Norway.*
- M. Feldman, B.Sc. (Institute of Biochemistry, Fundación Campomar, Argentina). Visiting PhD student, May-July, 1997/Aug-Sep, 1998. Present position: *Associate Professor, Department of Molecular Microbiology, Washington University, St. Louis, USA.*
- M. Bittner, B.Sc. (Faculty of Chemical and Pharmaceutical Sciences, University of Chile). Visiting student, October-December 1997.
- M.I. Fernández, Clinical Microbiologist, Visiting Fellow (Instituto Argentino del Diagnóstico, Buenos Aires, Argentina, 1997).
- A. Bouchet (Institut Gustave-Roussy, Villejuif, France) Visiting PhD Student, January-May 1993.
- Z. Yao, MSc (University of Beijing), Visiting Fellow 1991-93.
- A. Thariath, MSc (Chemistry, University of Waterloo), Visiting PhD student, June-August 1991. Present position: *Director of Product Development, Cytovax Biotechnologies, Inc., Edmonton, AB.*

#### Visiting International Undergraduate Students

V. Peña Blaque, Universidad Complutense de Madrid (Erasmus), Feb-Sep 2016; B. Bathabure, Universidad Andres Bello, Chile, Apr-Jul 2016; A. Zurita-Guisado, Universidad Complutense de Madrid (Erasmus), Feb-Aug 2015; W-C Soon, University of Singapore, Mar-Jun 2015; L. Daille, MSc, University Andres Bello, Chile, Nov 2012 - Feb 2013; L. Albarnez, University of Valparaiso, Chile, May 2010-Sep 2011; X. Fernandez, University of Chile, Jan 2011-March 2011.

#### Placement Students

L. Burrows, School of Biological Sciences, QUB, 2018-19

#### Honour's Theses/3rd Y Projects

**QUB**: M. Hawela, 2022-23; J. Whiteside, 2021-22; K. Quigley, 2020-21; L. Burrows, 2019-20; S. Mackey, 2018-19; L. Glaser, 2017-18; J. Allen, 2017-18; M. Herdman, 2017-18; S. Carson, 2016-17; N. Thompson, 2015-16; C. Brown, 2015-16; K. Dadswell, 2014; C. Doherty, 2014; B. Kevin (Intercalated Medical Student, **Wolfson Award**), 2013; L. Burns (Intercalated Medical Student), 2013; C. Connolly, 2013.

**UWO**: S. Kim, 2013; A. Zandvakili, 2010-11; K. MacDonald, 2008-09; A. Jiwani, 2008-09; L. Mussen, 2007-08; S. Furlong, 2007-08; M. Lung, 2006-07; R., Wu, 2005-06; A. Polichuk, 2005-06; E. Haggerty, 2005-06; J. Tolman, Carleton University, 2005; A. Petersen, 2004-05; D. VanLeewen, 2004-05; J. Gagliardi, 2002-03; K. Maloney, 2001-02; J. Olenick, 2000-01; E. Dunn, 2000-01; T. Hopkins, 1999-00 (Governor's General Medal); S-L. Chang, 1999-00; J. Stephens, 1999-00 (co-supervised with Dr. E. Cairns); T. Chappell, 1998-99; M. Lefebre, 1997-98; S. Hota, 1997-98; P. Hanifi, 1996-97; M. Glaskin-Clay, 1995-96; S. Valiquet, 1995-96 (Gold Medal Award Winner; NSERC Studentship Award); S. MacMillan, 1994-95; W. Kalair, 1994-95; D. Alexander, 1993-94 (Gold Medal Award Winner; MRC Studentship Award); J. Cruthers, 1992-93; J. Welsh, 1989-90 (Honors in Biology); B. Lott, 1989-90; J. Jordan, 1988-89.

#### 3rd Year Research Projects (UWO)

C. Mueller, 2002; T. L. Simon, 1997; N. Hunter, 1995; S. Valiquet, 1995.

#### Summer Students

S. Korankye, IAESTE Student (2019); P. Quinn (2019); L. Glaser (2017); J.C. Fernández Llamera, Belfast Methodist College (2016); N. Osborne (2015); J. French (2015); S. O'Sullivan, Biochemical Society Summer Vacation Studentship (2014); E. Kavanagh, CII Summer Research Scholarship (2014); R. Medialdea (2013); J. Thompson (2013); C. Connolly (2013); Kilian Schütt (2013); R. Joseph, NSERC summer studentship (2011); S. Hu, NSERC summer studentship (2010); S. Hu, Canadian Cystic Fibrosis Foundation summer studentship (2009); M. Yang (2008); B. Li, NSERC summer studentship (2007); B. Li, NSERC summer studentship (2006); M. Lung, NSERC summer studentship (2006); L. Killip, Canadian Cystic Fibrosis Foundation summer studentship (2006); C. Bates, Canadian Cystic Fibrosis Foundation summer studentship (2006); M. Lung, NSERC summer studentship (2005); J. Tolman, NSERC summer studentship (2005); R. Wu (2005); A. Balachandran

(2004); D. Wehlam, Canadian Cystic Fibrosis Foundation summer studentship (2003); C. Bhat, NSERC summer studentship (2003); C. de Lasa (2003); C. Mueller, NSERC summer studentship (2001-2002); V. Soo, Hargreaves summer studentship award (2000); K. McGibney, NSERC summer studentship (2000); A. Milos, NSERC Summer studentship (1999); J. Wiggins (1999); H. Georgiou (1999); S. Hota (1996; 1997); P. Hanifi, Canadian Cystic Fibrosis Foundation summer studentship (1996); S. Valiquet, Canadian Cystic Fibrosis summer studentship (1995); M. Gajewski, Meds '97 Summer Res. Training Program (1994/1995); T. Kappos, Meds '92 Summer Res. Training Program (1989/1990); J. Welsh (1989).

### High-School Students

A. Foley, Our Lady and St. Patrick's College, Knock, Nov 2017; C. Fernandez-Llamera, Methodist College Belfast, Jul 1-29, 2016; P. Magee, Tonbridge School, Kent, England, Jun 27-29, 2016; C. Belchamber, London Central High School (2011); C. Yang, Lucas High School, Bronze Medal in the International Science Fair representing Canada (2008), \$200,000 scholarship in 2010 to attend Cambridge University, UK; M. O'Reilly (1998); D. Malpage (1997); J. McIntyre (1996); M. O'Neill (1995); K. Vallas (1993); N. Moon (1992); M. Clark (1991); M. Korvamaker (1990); M. McIntosh (1989).

## **TEACHING ACTIVITIES**

### **Courses of Instruction**

#### ***International***

##### Postgraduate

- 2023 Lecturer, MSc course in Molecular Genetics and Microbiology, University of Pavia, Pavia, Italy (12 lectures)
- 2022 Lecturer, MSc course in Molecular Genetics and Microbiology, University of Pavia, Pavia, Italy (12 lectures)
- 2016 Co-organizer and Lecturer, Post-Graduate Course on Microbial Pathogenesis, Centre for Bioinformatics and Integrative Biology, Universidad Andres Bello, Chile (5 lectures + journal club presentations; 11 h; Mar 8-10.
- 2015 Organiser and Lecturer, Post-Graduate Course on Microbial Pathogenesis, Department on Immunology and Microbiology, Wroclaw University, Poland (6 lectures + 6 seminars; 18 h), May 25-Jun 12.
- 2014 Lecturer, Dublin Training School on "Ion Transport, Airway Liquid dynamics & Host Pathogen Interactions in CF lung epithelia. COST Action BM1003, Royal College of Surgeons in Ireland, Beaumont Hospital, Dublin, Ireland (1 lecture), Sep 10-12.
- 2013 Lecturer, Autumn Training School, COST BM1003, Faculty of Biological Science, University of Wroclaw, Poland. (1 lecture) Sep 23-25.
- 2009 Co-Coordinator and Lecturer, Graduate Course on Current topics of Glycobiology, Université Joseph Fourier, Grenoble, France (5 lectures; 10 h), June 17-19.
- 2007 Lecturer, Graduate Course in the Department of Microbiology, University of Pavia, Italy: "*Burkholderia* pathogenesis" (2 lectures, 4 h), March 14-18.
- 2003 Lecturer, Current Topics in Biological Chemistry and Cell Biology: "Cellular and Molecular Microbiology", University of Buenos Aires, 2 lectures; 12 students, Fall 2003.

#### ***QUB***

##### Postgraduate

- 2023 Presentation Skills, Centre for Experimental Medicine, (2 h).
- 2022 Presentation Skills, Centre for Experimental Medicine, (2 h).
- 2019 Presentation Skills, Centre for Experimental Medicine, (2 h).
- 2018 Presentation Skills, Centre for Experimental Medicine, (2 h).
- 2017 Presentation Skills, Centre for Experimental Medicine, (2 h).
- 2016 Presentation Skills, Centre for Infection & Immunity, (2 h).
- 2014 Presentation Skills, Centre for Infection & Immunity, (2 h).



- 2015 Lecture on "Microbial Genetics", part of the MRes in Translational Medicine. (6 h preparation time, 2.5-h lecture) Feb 12.
- 2014 Lecture on "Microbial Genetics", part of the MRes in Translational Medicine. (6 h preparation time, 2 h lecture) Feb 18.

### Undergraduate

- 2023/24 BMS3108, Biology of Human Infection, Coordinator and Lecturer (64 h)
- 2022/23 BMS3108, Biology of Human Infection, Coordinator and Lecturer (64 h)
- 2021/22 BMS3108, Biology of Human Infection, Coordinator and Lecturer (64 h)
- 2021/22 DEN2027, Disease Mechanisms for Dentistry; Lectures on "Emerging Infectious Diseases" and "Microbiome in Health and Disease" (6 h preparation, 2 h lecture)
- 2020/21 BMS3108, Biology of Human Infection, Coordinator and Lecturer (64 h)
- 2020/21 DEN2027, Disease Mechanisms for Dentistry; Lectures on "Emerging Infectious Diseases" and "Microbiome in Health and Disease" (6 h preparation, 2 h lecture)
- 2019/20 BMS3109, Infection and Clinical Biochemistry, Co-Coordinator and Lecturer (64 h)
- 2019/20 DEN2027, Disease Mechanisms for Dentistry; Lectures on "Emerging Infectious Diseases" and "Microbiome in Health and Disease" (6 h preparation, 2 h lecture)
- 2018/19 BMS3109, Infection and Clinical Biochemistry, Co-Coordinator and Lecturer (64 h)
- 2018/19 DEN2027, Disease Mechanisms for Dentistry; Lectures on "Emerging Infectious Diseases" and "Microbiome in Health and Disease" (6 h preparation, 2 h lecture)
- 2017/18 BMS3109, Infection and Clinical Biochemistry, Co-Coordinator and Lecturer (64 h)
- 2017/18 DEN2027, Disease Mechanisms for Dentistry; Lectures on "Emerging Infectious Diseases" and "Microbiome in Health and Disease" (6 h preparation, 2 h lecture)
- 2016/17 VMI3005, Infection, Coordinator and Lecturer (64 h)
- 2016/17 DEN2027, Disease Mechanisms for Dentistry; Lecture on "Emerging Infectious Diseases" (3 h preparation, 1 h lecture)
- 2015/16 DEN2022, Disease Mechanisms for Dentistry; Lecture on "Emerging Infectious Diseases" (3 h preparation, 1 h lecture)
- 2015/16 Medical Portfolio Tutor (36 h).
- 2015/16 VMI3005, Infection, Coordinator and Lecturer (64 h)
- 2015/16 BMS2023 "Pathobiology", 5 Lectures in the Bacteriology Module (5 h)
- 2015/16 MED2016, Surgical Infection Tutorial (4 h).
- 2015/16 BMS3012 & BMS301 Oral Presentations marker. Jan 25 (2 h)
- 2014/15 Essay marker, BSC1009, Biomedical Sciences. (2 h)
- 2014/15 BMS2023 "Pathobiology", Revision Session (1 h)
- 2014/15 Medical Portfolio Tutor (36 h).
- 2014/15 BMS2023 "Pathobiology", 5 Lectures in the Bacteriology Module (5 h)
- 2014/15 DEN2022, Disease Mechanisms for Dentistry; Lecture on "Emerging Infectious Diseases" (3 h preparation, 1 h lecture)
- 2013/14 MED2016, Surgical Infection Tutorial (4 h).
- 2013/14 BMS2023 "Pathobiology", 4 Lectures in the Bacteriology Module (5 h)
- 2013/14 DEN2022, Disease Mechanisms for Dentistry; Lecture on "Emerging Infectious Diseases" (3 h preparation, 1 h lecture)
- 2012/13 DEN2022, Disease Mechanisms for Dentistry; Lecture on "Emerging Infectious Diseases" (3 h preparation, 1 h lecture)

### ***UWO***

#### Postgraduate

- MI9100, "Scientific Communication", Lecturer, 1 lecture (2011)
- MI9000, Current concepts in Microbiology, 2 lectures (4 hours) + tutoring grant proposal (2010-11).
- MI9100, "Scientific Communication", Lecturer, 1 lecture (2010)
- MI9400B, "Current concepts in Microbiology", Course Coordinator, 5 lectures (2010)
- MI9100, "Scientific Communication", Lecturer, 1 lecture (2009)
- MI9400B, "Current concepts in Microbiology", Course Coordinator, 6 lectures (2008)
- MI511a, "Current concepts in Microbiology", Course Coordinator, 6 lectures (2007)
- MI511a, "Current concepts in Microbiology", Course Coordinator, 6 lectures (2006)
- MI511a, "Current concepts in Microbiology", Course Coordinator, 6 lectures (2002)

MI511a, "Current concepts in Microbiology", Course Coordinator, 6 lectures (2001)  
MI511a, "Current concepts in Microbiology", 6 lectures (1999)  
MI511a, "Current concepts in Microbiology", 6 lectures (1998)  
MI511a, "Current concepts in Microbiology", 6 lectures (1997)  
MI510, "Current concepts in Microbiology", Course Coordinator, 2 lectures (1996)  
MI 510, "Current concepts in Microbiology", Section Coordinator, 7 lectures (1995)  
MI510, "Current concepts in Microbiology", Section Coordinator, 6 lectures (1994)  
Molecular Biology 517, 3 lectures (1994)  
MI510, "Current concepts in Microbiology", Section Coordinator, 6 lectures (1993)  
MI530b, "Molecular Mechanisms of Bacterial Pathogenicity", Coordinator, 23 lectures (46 hours) (1989; 1991)

### Undergraduate

Microbiology & Immunology 465a, Lecturer, 8 lectures (2008)  
Microbiology & Immunology 465a, Lecturer, 6 lectures (2007)  
Microbiology & Immunology 465a, Lecturer, 6 lectures (2006)  
Microbiology & Immunology 465a, Lecturer, 6 lectures (2005)  
Microbiology & Immunology 361b, 1 lecture and 2 labs on Bioinformatics (2004)  
Microbiology & Immunology 465a, Lecturer, 5 lectures (2004)  
Microbiology & Immunology 360b, Course Coordinator, 6 lectures (2003)  
Microbiology & Immunology 465a, Course Coordinator, 13 lectures (2002)  
Microbiology & Immunology 465b, Course Coordinator, 13 lectures (2002)  
Microbiology & Immunology 465b, Course Coordinator, 13 lectures (2001)  
Microbiology & Immunology 465b, Course Coordinator, 16 lectures (2000)  
Microbiology & Immunology 465b, Course Coordinator, 18 lectures (1995-99)  
Biochemistry/Microbiology & Immunology 482, 1 lecture (1995-96)  
Microbiology & Immunology 450a, 10 lectures (1995)  
Microbiology & Immunology 450a, 1 lecture (1992-94)  
Microbiology and Biochemistry 481, 1 lecture (2 h) and 6 labs (24 h) (1991-93)  
Biology 306, 2 lectures (1989; 1991-93)  
Biology 202, 7 lectures (Microbial Genetics), and 8 laboratories (1990-92)  
Biology 202, 6 lectures (Medical Bacteriology) (1989)  
Biology 306, 6 lectures (Bacterial Pathogenesis) (1988)

### Medical Students

Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis" (2008)  
Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis" (2007)  
Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis" (2006)  
Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis" (2005)  
Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis" (2004)  
Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis" (2003)  
Medsl, Nephrology Week, 1 lecture on "Urinary tract infections" (2003)  
Medsl, Nephrology Week, 1 lecture on "Urinary tract infections" (2002)  
Medsl, Immunology Week, 1 lecture on "Urinary tract infection" (2002)  
Medsl, Nephrology Week, 1 lecture on "Urinary tract infections" (2001)  
Medsl, Immunology Week, 1 lecture on "Urinary tract infection" (2000)  
Medsl, Nephrology Week, 1 lecture on "Urinary tract infections" (2000)  
Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis" (2000)  
Medsl, Blood Week, 1 lecture on "Blood pathways for infection" (1999)  
Medsl, Immunology Week, 1 lecture on "Bacterial pathogenesis and emerging infections" (1999)

### ***Oregon Health Sciences University***

#### Undergraduate

Instructor, Mb610, Course on Medical Microbiology, School of Medicine

### ***Children's Hospital of Buenos Aires***

#### Postgraduate/Professional

Lecturer, Course "The impact of rapid diagnosis in pediatric infections." Argentine Society of

Pediatrics (1981).

Instructor, Laboratory Course on "Countercurrent immunoelectrophoresis and coagglutination assays in rapid diagnosis of infectious diseases." University of Tucumán, Argentina (1979).

### **University of Buenos Aires**

#### Undergraduate

Teaching Assistant, Department of Histology, Cytology and Embryology, Faculty of Medicine (1971-77)

### **Graduate Student Examination**

#### **UK**

#### PhD Vivas

*Internal Examiner:* K. Nagalekshmi, 2021; K. Przybyszewska, 2017; G. Mills, 2017; B. Cook, Biochemistry, 2011; C. Beaurepaire, 2006; J. Allingham, Biochemistry, 2002; E. Miskiewicz, Plant Sciences, 2001; J. Gordon, 1992; M. Junop, Biochemistry, 1997; A. Patel, Biochemistry, 1994; X-C. Li, Pathology, 1994; S. Wilhelm, Plant Sciences, 1994; M. Baig, Biochemistry, 1993; E. Silva, Zoology, 1993; V. Carruthers, 1992; M. Surette, Biochemistry, 1991; A. Panoskaltis, 1990.

*Independent Chair.* N. Green, 2021; H. Groves, 2018.

*External Examiner:* S. De Waeler, University of Ghent, Belgium, 2020; J. Dyer, University of Exeter, 2020; N. Amoako, University of Accra, Ghana, 2019; I. Chapartegui-Gonzalez, University of Cantabria, Spain, 2019; T. Wood, Imperial College, 2018; S. Muntaka, School of Life Sciences, Univ. of Nottingham, 2017; W. Elhenawy, University of Alberta, 2015; J. Mesureur, Université Montpellier, 2015; K. LaRue, University of Guelph, 2011; E. Pinta, Turku University, Finland, 2010; E. Lameignere, Université Joseph Fourier, Grenoble, France, 2009; A. Akya, University of Adelaide, 2007; M. Cunneen, University of Sidney, 2007; K. Kim, Pathobiology, University of Guelph, 2004; A. Rhan, Microbiology, University of Guelph, 2002; S. Jensen, Microbiology, University of Sidney, 2001; K. Daniels, University of Adelaide, Australia, 1999; E. Frey, Microbiology & Immunology, University of British Columbia, 1997; E. Lafontaine, Microbiology & Infectious Diseases, University of Calgary; 1997; S-H Xiang, Microbiology, University of Sidney, Australia, 1995; C. Dean, Microbiology & Immunology, Queen's University, 1995; D. Liu, Microbiology, University of Sidney, Australia, 1994; A. Thariath, Chemistry, University of Waterloo, 1993.

#### Postgraduate Differentiation and Appraisals

2019; Member 3rdY APR panel

2019; Chair, 3rdY APR Panel

2019; Member, 2ndY APR Panel

2018; Member 2ndY APR Panel

2018; Chair, 2ndY APR Panel

2018; Chair, 1stY Differentiation Panel

#### MRes Projects

2016-17; Member, MRes in Translational Medicine Oral Examining Board (2.5 h)

2016-17; Thesis Examiner; N. Thompson; D. Crooks.

*MSc Thesis (external examiner):* S. Digman, Tallaght University, Ireland, 2018;

*MSc Thesis (UWO):* C. Kerr, 2006; F. Young, Biochemistry, 2006; A. Yousef, 2004; S. Knox, 2002; M. Charles, 2002; J. Kehr, Plant Sciences, 2001; M. Hafezi, Physiology, 1995; M. Ray, Plant Sciences, 1995; S. Frost, 1996; K. Kukay, 1995; B. Zochodne, 1994; K. Dawson, 1993; L. Rapaport, Biochemistry, 1992; C. Ford, 1992; R. Allison, Biochemistry, 1992; T. Moore, 1992; B. Wakeham, Zoology, 1989; Chris Brown, Plant Sciences, 1989.

*PhD Comprehensive examinations (UWO):* N. Rahman, 2005; V. Somalinga, 2004; A. Mercx-

Jacques, 2004; N. Avvakumov, 2002; Y. Tourand, 2002; K.E. Jay, 2001; C. Michalski, 2001; K. Holmes, 2001; H. Sadlish, 2000; M. Khandaker, 1996; S. Hota, 1995; R. Rahimpour, 1995; R. DeKoter, 1994; K. Kalicharran, 1993; J. Arp, 1993; T. Duong, 1992; J. Pasick, 1990; G. Denomme, 1990; L. Passador, 1990; A. Tuck, 1989; A. Panoskaltzis, 1989.

#### Chair of Examinations Committees:

- MSc Thesis: C. Elmwood, 2006; J. Fraser, M&I, 1994; P. Lau, M&I, 1993; W. Chan, M&I, 1992.  
- PhD Thesis: I.S. Vaithilingam, Biochemistry, 1989.

#### **Thesis Advisory Committees**

##### MSc Students:

B. Arsic, UWO (2010-); A. Wong, UWO (2009-11); R. Lum-Tai, UWO (2009-11); K. Lycett-Lambert, UWO (2007-09); A. Bruni, UWO (2007-09); S. Lam, UWO (2006-08); N. Ho, UWO (2006-07); A. Petersen, Physiology and Pharmacology (2005-07); E. Truscott, Physiology and Pharmacology (2004-07); Mclvor, D., UWO (2004-08); G. De Leon, Biochemistry, McMaster Univ. (2004-05); B. Hales, UWO (2002-04); M. Mastrodicasa, Biochemistry (2002-04); J. Taylor, UWO (2000-02); N. Allan, Microbiology, Univ. of Guelph (1999-02); A. Mercx-Jacques, UWO (1998-01); T. Sun, UWO (1998-00); J. Lawson, UWO (1997); Yan Sun, Plant Sciences (1996-98); H. Farenholtz, Plant Sciences (1996-98); T. Harney, Plant Sciences (1995-96); M. Ray, Plant Sciences (1995-97); K. Kufli, UWO, (1993-96); K. Millsap, UWO, (1993-95); D. Bayley, UWO, (1989-92); M. Grattan, UWO, (1989-92); T. Bai, UWO, (1989-91); C. Brown, Plant Sciences, (1988-90).

##### PhD Students:

M. Fernandez-Carrasco, QUB (2014-17); J. Payne, QUB (2013-17); B. Armstrong, UWO (2007- ); M. Miller (2007-11); F. Beasley, UWO (2006-11); B. Beall, Biology (2005-09); V. Somalinga, UWO (2004-07); D. Lange, UWO (2002-07); T. Sebulsky, UWO (2001-04); S. Dale, UWO (2000-04); A. Rhan, Microbiology, Univ. of Guelph (1999-02); X-M. Xu, UWO (1997-99); P. Amor, Microbiology, University of Guelph (1996-99); C. Fehlner, UWO, (1994-98); L. Marrone, Chemistry, University of Waterloo, (1993-96); R. Murray, UWO, (1992-97); C. Anderson, UWO, (1991-94); K. Steward, UWO, (1989-92).

#### **Graduate Student Supervision (See Trainees)**

#### **Undergraduate Student Supervision (See Trainees)**

#### **High School Students supervision (See Trainees)**

#### **RESEARCH FUNDING**

##### Ingram, Valvano, Waterfield

Developing a vaccine to prevent *E. coli* neonatal sepsis.

Ms. A.M. Bryson Bequest; SMDB, QUB; £71,784

01/08/23 - 21/07/24.

##### Valvano & McClean (Co-leads)

AVACTA: All-island Vaccine Research and Training Alliance

North-South Research Programme, Higher Education Authority, Republic of Ireland; £3,106,000;

01/10/22 - 30/09/26.

##### Valvano & Ingram

Glycocalins: Novel Glycotagged synthetic proteins for diagnostics and vaccine design in medicine and veterinary

Medical Research Council Confidence in Concept; £66,989; 01/11/20 - 31/12/21.

##### Valvano

Exploring a potential vaccine against CoV2; A feasibility study

Proof-of-Principle Award, Queen's University; £6,500; 01/05/20 - 31/10/20.

##### Valvano

A conserved protein O-glycosylation pathway in the *Burkholderia* genus essential for bacterial fitness and antigenicity in humans

BBSRC; BB/T005807/1; £368,880; 01/03/20 - 28/02/23.

McClellan, Valvano & others

BactiVax

MSCA-ITN-2019, Innovative Training Networks

European Training Networks; € 4,009,372; 01/10/19-30/09/23.

Valvano

*Burkholderia* infection in CFTR macrophages: actin remodelling and inflammation

Cystic Fibrosis Foundation (USA); VALVAN19G0; £147,590; 01/09/19 - 31/08/21

Valvano & Araujo

*Burkholderia* spp. and the environmental microbiome: are the interactions in lung and rhizosphere similar?

SPRINT QUB-FAPESP Exchange Programme; £9560; 01/03/19 - 28/02/21.

Valvano & Lopez Campos

Bacterial lipocalins: Novel role in bacterial protection against antibiotic-induced membrane lipid peroxidation

BBSRC; BB/S006281/1; £447,051; 01/04/19 - 30/03/22.

Valvano (& Awandare, Mosi, Bengoechea, Lopez Campos)

Mapping Gram-negative antibiotic resistance in clinical isolates from Ghana

Northern Ireland Department for the Economy - GCRF Awards - Pilot Project Grant; £33,500; 01/07/18 - 31/03/19.

Bengoechea (& Valvano, Kissenpfennig, Awandare, Mosi)

University of Ghana-Queen's University Belfast partnership for AMR research

Northern Ireland Department for the Economy - GCRF Awards - Workshop Grant; £24,996; 01/09/17 - 31/03/18.

Valvano & Araujo

*Burkholderia* species in sugarcane: the relationship among antifungal production, intrinsic antimicrobial resistance, and pest biocontrol

BBSRC-FAPESP Joint Pump-Priming Awards for AMR and Insect Pest Resistance in Livestock and Agriculture; BB/R022607/1; £66,390; 15/05/18 - 30/04/19.

Valvano & Ingram

A novel vaccine to fight *Burkholderia* infections globally

Medical Research Council Confidence in Concept; CD1617-CIC04; £67,287; 01/11/17 - 31/12/18.

Valvano & Dombrowski

A novel family of type VI-secreted toxins affecting Rho GTPases, actin dynamics and inflammation,

Medical Research Council; MR/P022480/1; £336,000; 01/08/17 - 31/07/20.

Dib & Valvano

To evaluate the role of the histamine four receptor (H4R) in the clearance of lung pathogens;

Medical Research Council; MR/R005915/1; £219,600; 01/10/17 - 30/09/19.

Valvano

Molecular characterisation of bacterial interspecies signalling in polymicrobial chronic lung infection: a potential target for therapeutic intervention; The Wellcome Trust; 100204/A/12/Z; £93,487;

01/05/17 - 30/09/18.

Perez-Donoso, Aguayo, Almonacid, Gonzalez & Valvano

Theoretical and experimental identification of novel chemical compounds targeting the lipopolysaccharide (LPS) of clinically relevant bacterial pathogens

CONICYT-Newton International networking call; 01/07/15 - 31/12/16  
£21,017

Valvano

Role of CFTR in bacterial clearance by macrophages  
Cystic Fibrosis Trust; 01/01/14 - 31/12/15  
£139,594

Valvano (Lead PI of multi school application)

GEN III OmniLog® II Combo Plus System  
CRIFF Competition, Queen's University Belfast; 2013-14.  
£74,213

Valvano

Non-genetic mechanisms of intrinsic antimicrobial resistance  
Marie Curie Career Integration Grant (CIG), NONANTIRES, 618095; 01/09/13 - 31/08/15  
£40,000

Valvano

Outer membrane permeability and stress responses in *Burkholderia cenocepacia*  
Cystic Fibrosis Canada; Operating; 01/04/12 - 31/03/15  
\$CDN 219,300 (£ 138,670)

Valvano

Lipopolysaccharide export and assembly in gram-negative bacteria  
Canadian Institutes of Health Research; Operating; 01/04/12 - 30/03/17  
CDN \$ 850,000 (£ 537,400)

Valvano

*Burkholderia cenocepacia* survival strategies in macrophages  
Cystic Fibrosis Canada; Operating; 01/04/11 - 31/03/14  
\$CDN 297,000 (£ 187,802)

Cygler, Matte & Valvano

Structure-function relationships of bacterial polysaccharide co-polymerases  
Canadian Institutes of Health Research; 01/10/08-30/09/13  
\$ 1,190,000 (MAV operating funds \$375,000) (£ 230,320)

**Earlier than 2012**

Valvano: Novel global regulator controlling bacterial adaptability to multiple niches; NSERC;  
Discovery grant – Individual; 01/04/11 – 31/12/12; \$CDN 110,000 (£ 69,500)

Wright, Valvano, Davies, Burrows & Junop: Antibiotic Adjuvants: Overcoming Multi-Drug Resistance  
in Gram Negative Bacteria; Canadian Institutes of Health Research; Special initiative on  
Alternatives to antibiotics; 01/04/08-30/03/13; \$ 1,393,750 (MAV operating funds \$250,000)  
(£153,500)

Valvano: Tier I Canada Research Chair in Infectious Diseases and Microbial Pathogenesis; Canada  
Research Chairs Program; Salary Award; 01/11/09-31/10/16; \$ 1,400,000 (£859,836)

Valvano: Outer membrane permeability and stress responses in *Burkholderia cenocepacia*;  
Canadian Cystic Fibrosis Foundation; Operating; 01/04/09-31/03/12; \$219,300 (£134,690)

Valvano: Lipopolysaccharide export and assembly in gram-negative bacteria; Canadian Institutes of  
Health Research; Operating; 01/04/07-30/03/12; \$ 692,500 (£425,338)

Valvano: Biosynthesis of core-lipopolysaccharide and structure-function of glycosyltransferases;

NSERC; Discovery grant – Individual; 01/04/06 – 31/03/11; \$181,250

Valvano: Regulation and molecular characterization of the type VI secretion system in the model opportunistic pathogen *Burkholderia cenocepacia*; CHIR; Bridge Funding – Individual; 01/03/10-28/02/11; \$100,000

Valvano: Tier I Canada Research Chair in Infectious Diseases and Microbial Pathogenesis Canada Research Chairs Program; Salary Award; 01/10/02-30/09/09; \$ 1,400,000

Ferguson, Bend, Dekaban, Litchfield, Madrenas, Pasternak, Pickering, Poulter, Rylett & Valvano: London Regional Cell and In Vitro Molecular Imaging Facility; Canadian Institutes of Health Research; Research Resource Grant; 01/04/07-30/03/11; \$266,700

Valvano: Mechanisms of *Burkholderia cenocepacia* intracellular survival in macrophages; Canadian Cystic Fibrosis Foundation; Operating; 01/04/08-31/03/11; \$260,910

Valvano: Functional analysis of the bacterial lipid-linked saccharide translocase Wzx; Mizutani Foundation for Glycoscience; 01/04/09-30/03/10; \$63,000

Riccardi & Valvano: The role of RND drug efflux transporters in the intrinsic antibiotic resistance of *Burkholderia cenocepacia*; Fondazione per la Ricerca sulla Fibrosi Cistica (FFC), Italy; Operating; 01/07/06-30/06/09; \$ 30,000

Valvano: Cationic antimicrobial peptide resistance and stress responses in *Burkholderia cenocepacia*; Canadian Cystic Fibrosis Foundation; Operating; 01/04/07-31/03/09; \$120,000

Valvano: Bacteria-host interactions of *Burkholderia cepacia* in macrophages; Canadian Cystic Fibrosis Foundation; Operating; 01/04/05-31/03/08; \$226,965

Hertel, Valvano & Heinrichs: Nucleofector device for the efficient transfer of genetic material into hard to transfect mammalian cells; NSERC; RTI; 01/04/07 – 31/03/08; \$78,672

McCormick, Heinrichs, Valvano & Creuzenet: Equipment for quantitative real-time gene expression analysis; NSERC; RTI; 01/04/07 – 31/03/08; \$59,000

Valvano, Sokol, Ceri, Storey, Davies & Wright: Pathogenomics and gene target discovery in *Burkholderia cepacia*; Canadian Cystic Fibrosis Foundation and Institute of Circulatory and Respiratory Health, Canadian Institutes of Health Research, “*Special initiative in memory of Michael O'Reilly*”; Program Grant; 01/01/02-31/12/06; \$ 1,428,000

Valvano, Creuzenet, Heinrichs & McCormick: Automated microbiology growth curve analysis system; NSERC; Equipment; 2006; \$38,800

Valvano: Cationic peptide resistance and intracellular survival of the opportunistic pathogen *Burkholderia cepacia*; Canadian Institutes of Health Research; Operating; 01/10/03-30/09/06; \$ 258,858

Valvano: Molecular genetics and biochemistry of lipopolysaccharide export in bacteria; Canadian Institutes of Health Research; Operating; 01/10/01-30/09/06; \$ 507,135

Creuzenet & Valvano: HPLC system for the discovery of novel virulence factors in human pathogens

CIHR; Equipment; 2005; \$98,190

Valvano, Creuzenet; Rapid In vitro protein synthesis; Canadian Bacterial Diseases Network; Equipment; 01/06/04-31/12/04; \$20,000

Valvano: Biosynthesis of core lipopolysaccharide; Natural Sciences and Engineering Research Council; Operating; 01/04/01-31/03/06; \$ 190,000

Valvano: Structure-function analysis of novel enzymes involved in the synthesis of nucleotide-activated heptose; Canadian Bacterial Diseases Network; Operating; 01/04/03-31/03/05; \$ 168,000

Valvano: Pathogenomics of bacteria causing opportunistic infections; Canada Foundation for Innovation; Infrastructure Support for Canada Research Chairs; Equipment; 2002; \$ 133,936

Valvano: Pathogenomics of bacteria causing opportunistic infections; Ontario Innovation Trust; Infrastructure Support for Canada Research Chairs; Equipment; 2002; \$ 133,936

Heinrichs, Valvano & Creuzenet: Isolation and preservation of active biological molecules; Natural Sciences and Engineering Research Council; Equipment; 2002; \$ 39,075

Valvano, Creuzenet, Flintoff, Heinrichs, Koval, Morris & Singh: Ultracentrifuge and Rotors; Canadian Institutes of Health Research; Multi-user, Equipment; 2002; \$ 136,345

Valvano: Mechanisms of bacterial resistance to oxidative killing in the pathogenesis of *Burkholderia cepacia*; Canadian Cystic Fibrosis Foundation; Operating; 01/04/02-31/04/05; \$ 182,730

Valvano: *In vivo* identification of virulence-associated genes from *Burkholderia cepacia* by signature-tagged mutagenesis; Canadian Cystic Fibrosis Foundation; Operating, Supplemental from Thompson Family Fund; 01/04/01-31/03/02; \$ 30,000

Valvano & Heinrichs: Novel transposons for detection of essential genes in bacterial genomes; Canadian Institutes of Health Research; Pilot Project; Operating; 01/04/01-31/03/03; \$ 133,000

Valvano & Heinrichs: Digital imaging system for microscopic analysis; Canadian Institutes of Health Research; Equipment; 2001; \$ 35,000

Valvano Intracellular survival of *Burkholderia cepacia* in macrophages and amoebae; Canadian Institutes of Health Research; Operating; 01/04/00-31/03/03; \$ 225,000

Valvano Bacterial resistance to oxidative killing in the pathogenesis of *Burkholderia cepacia*; Canadian Cystic Fibrosis Foundation; Operating; 01/04/00-31/03/02; \$ 115,210

Valvano Mechanisms of Export of bacterial lipopolysaccharides; Natural Sciences and Engineering Research Council; Operating; 01/04/97-31/03/01; \$ 120,400

Heinrichs & Valvano Workstation for purification of small molecules; Natural Sciences and Engineering Research Council; Equipment; 2000; \$ 46,000

Singh, Chan, Flintoff, Kelvin, Madrenas, McFadden & Valvano Biacore for the analysis of biomolecular interactions; Canadian Institutes of Health Research; Equipment; 1999; \$ 98,068

Chan, Flintoff, Morris, Petersen & Valvano Instrumentation for studies of cell movements *in vitro*; Natural Sciences and Engineering Research Council; Equipment; 1998; \$ 41,668

Valvano Molecular Genetics of lipopolysaccharide genes; Canadian Institutes of Health Research; Operating; 01/10/96-30/09/01; \$ 337,500

Valvano Molecular Genetics of lipopolysaccharide in enteric bacteria; Medical Research Council; Operating; 01/07/93-30/09/96; \$ 219,900

Valvano Export and import of macromolecules across the bacterial cell envelope; Natural Sciences and Engineering Research Council; Operating; 01/04/93-31/03/97; \$120,000



Reid, Hayes, Valvano, Lacerte & Delaney Antibiotic eradication of bacterial biofilms on Prosthetic devices; Rick Hansen Legacy Fund; Operating; 1993-1994; \$ 45,000

Valvano Molecular Genetics of the O-side chain lipopolysaccharide genes in *E. coli*; Medical Research Council; Operating; 01/07/90-30/06/93; \$195,099

Valvano Design of an O-polysaccharide-protein conjugated vaccine against *E. coli* extraintestinal infections; Medical Research Council; Operating; 01/07/89-30/06/91; \$ 96,006

Valvano & Koval High-speed refrigerated centrifuge; Medical Research Council; Equipment; 1989; \$ 30,000

Valvano Genetics of the anaerobic pathogen *Clostridium difficile*; Bickell Foundation; Equipment; 1989; \$ 11,201

Valvano Molecular Genetics of the O-side chain lipopolysaccharide genes in *E. coli*; Medical Research Council; Operating; 01/04/88-30/06/90; \$ 110,640

#### **Internal Funding (University of Western Ontario)**

Heinrichs, Valvano & Creuzenet Bioscreen system for automated monitoring of bacterial growth Academic Develop Fund, UWO; Equipment; 2008; \$38,000

McCormick, Heinrichs, Valvano & Creuzenet Quantitative real-time gene expression analysis and mRNA gene expression; Academic Develop Fund, UWO; Equipment; 2007; \$75,000

Hertel, Valvano & Heinrichs Nucleofector device for the efficient transfer of genetic material into hard to transfect mammalian cells; Academic Develop Fund, UWO; Equipment; 2006; \$78,672

Valvano, Creuzenet, Heinrichs & McCormick Automated microbiology growth curve analysis system Academic Develop Fund, UWO; Equipment; 2007; \$38,800

Creuzenet & Valvano HPLC system for the discovery of novel virulence factors in human pathogens; Academic Develop Fund, UWO; Equipment; 2005; \$77,190

Heinrichs, Valvano & Creuzenet French Pressure Cell Lysis System; Academic Develop Fund, UWO; Equipment; 2005; \$18,000

Valvano & John *In vivo* detection of virulence-associated genes in clinical strains of *Burkholderia Pseudomonas) cepacia* London Health Sciences Internal Research Fund; Graduate Student Stipend; 2000-2001; \$12,500

Valvano, Heinrichs & Kelvin Exposure System for experimental respiratory Infections; Academic Development Fund, UWO; Equipment; 2000; \$ 23,733

Valvano Faculty of Medicine & Dentistry, UWO; MRC Gap B Funding; Operating; 1999-2000; \$ 7,000

Heinrichs, Valvano & Koval Upright microscope with built-in epifluorescence; Academic Development Fund, UWO; Equipment; 1999; \$ 32,370

John & Valvano Amoeba as a carrier for *Burkholderia cepacia* in patients with cystic fibrosis London Health Sciences Internal Research Fund; Graduate Student Stipend; 1997-1998; \$ 12,500

Valvano, Van Huystee, Chan, Reid & Shaw Carbohydrate Analytical Facility; Academic Development Fund, UWO; Equipment; 1997; \$ 35,900

Morris, Chan & Valvano Intravital Video Microscopy; Academic Development Fund, UWO; Equipment; 1997; \$ 33,000

Grant, Zhong, Valvano & Madrenas Non-toxic lipopolysaccharide: a novel immunosuppressive agent; Multi-Organ Transplant Program, University Hospital; Operating; 1995-1996; \$ 71,000

Valvano Molecular characterization of microbial hydroxylases: Novel target enzymes for antimicrobial therapy; NSERC (internal), UWO; Operating; 1994-1995; \$ 6,000

Grant, Zhong & Valvano Non-toxic lipopolysaccharide in small bowel transplantation for prevention of intestinal rejection; University Hospital Pooled Research Trust Fund; Operating; 1993-1994; \$ 8,100

Valvano Role of Tol proteins in the export of bacterial macromolecules; Special Competition for Research Funds, UWO; Equipment; 1992; \$ 4,250

Valvano Transposon mutagenesis in *Clostridium difficile*; Special Competition for Research Funds, UWO; Equipment; 1991; \$ 4,400

Valvano Development of a molecular probe for identification of pathogenic strains of *E. coli* 0157:H7 Special Competition for Research Funds, UWO; Equipment; 1989; \$ 3,725

Valvano Molecular analysis of the 80-kilobases-virulence plasmid of *E. coli* 0157:H7; Ontario Ministry of Health, Lottery Funds; Equipment; 1988; \$ 12,402

Valvano

Start-up for new faculty member; Department of Microbiology & Immunology, UWO; Equipment & Operating; 1988; \$ 35,000

**PUBLICATIONS**

**Career total:** 208 peer-reviewed articles; 37 review articles and book chapters.

Sum of the Times Cited (Google Scholar): ~15722; **H-index = 71**; **i10 index = 187**

\* Corresponding author; Name of supervised trainee(s) are underlined

## I. Peer-reviewed articles

209. Anderson, A.J.G., B. Morrell, G. Lopez-Campos, and M.A. **Valvano**\*. 2023. Distribution and diversity of type VI secretion system clusters in *Enterobacter bugandensis* and *Enterobacter cloacae*. Microbial Genomics; accepted 16/11/2023.
208. Turton, K., H.J. Parks, P. Zarodkiewicz, M.A. Hamad, R. Dwane, G. Parau, R.J. Ingram, R.C. Coll, C.E. Bryant, and M.A. **Valvano**\*. 2023. The *Achromobacter* type 3 secretion system drives pyroptosis and immunopathology via independent activation of NLRC4 and NLRP3 inflammasomes; Cell Reports. 42, 8, 22 p., 113012.
207. MacDonald, L., S. Keenan, F. Di Lorenzo, N.E. Adade, D.T.D. Kenna, B.C. Millar, J.E. Moore, J. Ramos Vivas, A. Molinaro, and M.A. **Valvano**\*. 2023. Polymyxin resistance and heteroresistance are common in clinical isolates of *Achromobacter* species and correlate with modifications of the lipid A moiety of lipopolysaccharide. Microbiol Spectr. 2023 Feb 14;11(1):e0372922. doi: 10.1128/spectrum.03729-22. Epub 2022 Dec 15.
206. Adade, N.E., Y. Aniwah, L. Mosi, M.A. **Valvano**, S. Duodu, S.D. Ahator. 2022. Comparative genomic analysis of *Vibrio cholerae* reveals variations in genome architecture and adaptation of outbreak and environmental strains. Frontiers in Microbiology 13:998182. doi: 10.3389/fmicb.2022.998182.
205. Naquib, M, N. Feldman, P. Zarodkiewicz, H. Shropshire, C. Biamis, O.M. El-Halfawy, J. McCain, C. Dezanet, J-L. Décout, Y. Chen, G. Cosa, and M.A. **Valvano**\*. 2022. An evolutionary conserved detoxification system for membrane lipid-derived peroxy radicals in Gram-negative bacteria. Plos Biology, 20, e3001610.
204. Koirala, P., M. Maharjan, S. Manandhar, K.R. Pandey, T. Deshayes, G. Wang; M. A. **Valvano**, and K. Laroucau. 2022. First glanders cases detected in Nepal underscore the need for surveillance and border controls. BMC Veterinary Research 18, 132. doi.org/10.1186/s12917-022-03233-4.
203. Dennehy, R., N. Duggan, S. Dignam, S. McCormack, E. Dillon, J. Molony, M. Romano, Y. Hou, L. Ardill, M.X. Whelan, Z. Drulis-Kawa, T. Ó Cróinín, M.A. **Valvano**, R. Berisio, and S. McClean. 2022, The DNA mimic protein BCAS0292 is involved in the regulation of virulence of *Burkholderia cenocepacia*. Microbiology Open.
202. Facchini, F.A., A. Minotti, A. Luraghi, A. Romerio, N. Gotri, A. Matamoros-Recio, A. Iannucci, C. Palmer, G. Wang, R. Ingram. S. Martin-Santamaria, G. Pirianov, M. De Andrea, M.A. **Valvano**, and F. Peri F. 2021. Synthetic Glycolipids as Molecular Vaccine Adjuvants: Mechanism of Action in Human Cells and In Vivo Activity. J Med Chem. 2021 Aug 12. doi: 10.1021/acs.jmedchem.1c00896. PMID: 34382796.
201. González-Montalvo, M.A., F. Tavares-Carreón, G.M. González, H. Villanueva-Lozano, I. García-Romero, V.C. Zomosa-Signoret, M.A. **Valvano**, and A. Andrade. 2021. Defining Chaperone-Usher Fimbriae Repertoire in *Serratia marcescens*. Microbial Pathogenesis 154:104857. doi: 10.1016/j.micpath.2021.104857.
200. Wang, G., L. Glaser, N.E. Scott, Y. Fathy Mohamed, R. Ingram, K. Laroucau, M.A. **Valvano**\*. 2021. A glycoengineered antigen exploiting a conserved protein O-glycosylation pathway in the *Burkholderia* genus for detection of glanders infections. Virulence 12:1, 493-506; doi: 10.1080/21505594.2021.1876440.
199. García-Romero, I., and M.A. **Valvano**\*.2020. Complete genome sequence of *Burkholderia cenocepacia* K56-2, an opportunistic pathogen. Microbiology Resource Announcements. Accepted, 8 Oct.2020.
198. Rosales-Reyes, R., P. Garza-Villafuerte, D. Vences-Vences, D.F. Aubert, R. Aca-Teutle, V.F. Ortiz-Navarrete, L.C. Bonifaz, J.C. Carrero-Sánchez, A. Olivos-García, M.A. **Valvano**\*, and J.I. Santos-Preciado. 2020. Interferon-gamma-activated macrophages infected with *Burkholderia cenocepacia* process and present bacterial antigens to T-cells by class I and II major histocompatibility complex molecules. Emerging Microbes and Infection (accepted 28/08/2020) doi: 10.1080/22221751.2020.1818632.

197. Pérez-Burgos, M., I. García-Romero, J. Jung, E. Schander, M.A. **Valvano**, and L. Søgaard-Andersen. 2020. Characterization of the exopolysaccharide biosynthesis pathway in *Myxococcus xanthus*. *Journal of Bacteriology* Aug 4:JB.00335-20. doi: 10.1128/JB.00335-20.
196. Mushtaq, S., R. Reynolds, M.C. Gilmore, O. Esho, R. Adkin, I. García-Romero, A. Chaudhry, C. Horner, T.L. Bartholomew, M.A. **Valvano**, M. Dry, J. Murray, B. Pichon, D.M. Livermore on behalf of the BSAC Resistance Surveillance Standing Committee. 2020. Inherent colistin resistance in genogroups of the *Enterobacter cloacae* complex: epidemiological, genetic and biochemical analysis from the BSAC Resistance Surveillance Programme. *Journal of Antimicrobial Chemotherapy* 75(9):2452-2461 (doi:10.1093/jac/dkaa201).
195. Rosales-Reyes, R., M. Rodríguez-Alvarado, J.L. Lezana-Fernández, J.Y. Sánchez-Lozano, C. Gayosso-Vázquez, M.J. Arredondo-Mercado, D. Jarillo-Quijada, J.E. Toledano-Tableros, M.D. Alcántar-Curiel, N. Lincopan, J.E. Vidal, R. Lascurain, M.A. **Valvano**, and J.I. Santos-Preciado. 2020. *Pseudomonas aeruginosa* isolates from a cohort of Mexican children with CF show adaptation to a chronic phenotype. *Pediatric Infectious Disease Journal*. May 20. doi: 10.1097/INF.0000000000002714.
194. Romero-Gutiérrez, K.J., M.N. Dourado, L.M. Garrido, L.R. Olchanheski, E.T. Mano, F. Dini-Andreote, M.A. **Valvano**, and W.L. Araújo. 2020. Phenotypic traits of *Burkholderia* spp. associated with ecological adaptation and plant-host interaction. *Microbiological Research* Jun;236:126451. doi: 10.1016/j.micres.2020.126451.
193. Pérez-Burgos, M., I. García-Romero, M.A. **Valvano**, and L. Søgaard-Andersen. 2020. Identification of the Wzx flippase, Wzy polymerase and sugar-modifying enzymes for spore coat polysaccharide biosynthesis in *Myxococcus xanthus*. *Molecular Microbiology* 113(6):1189-1208. doi: 10.1111/mmi.14486.
192. Sánchez-Rodríguez, R., G.M. González, MA. Becerril-García, R. de J. Treviño-Rangel, A. Marcos-Vilchis, B. González-Pedrajo, M.A. **Valvano**, and A. Andrade. 2020. The BPTpA protein from *Burkholderia cenocepacia* belongs to a new subclass of low molecular weight protein tyrosine phosphatases. *Archives of Biochemistry and Biophysics*. Mar 15;681:108277. doi: 10.1016/j.abb.2020.108277.
191. Rosales-Reyes, R., F. Esposito, B. Fuga, L. Cerdeira, M.J. Arredondo-Mercado, J.L. Lezana-Fernandez, R. Lascurain, M.A. **Valvano**, N. Lincopan, J.I. Santos-Preciado. 2020. Draft Genome Sequence of *Pseudomonas aeruginosa* ST3351 Exhibiting High-Level Resistance to Polymyxins in a Pediatric Patient with Cystic Fibrosis in Mexico. *Microbiology Resource Announcements*. 2020 Jan 9; 9(2).
190. An, S-Q., M.A. **Valvano**, Y.H. Yu, J.S. Webb and G.L. Campos. 2020. An improved bind-n-seq strategy to determine protein-DNA interactions validated using the bacterial transcriptional regulator YipR. *BMC Microbiology* 2020 Jan 2;20(1).
189. Pardo-Esté, C., J. Castro-Severyn, G.I. Krüger, C.E. Cabezas, A.C. Briones, C. Aguirre, N. Morales, M.S. Baquedano, Y.N. Sulbaran Bracho, A.A. Hidalgo, C. Meneses, I. Poblete-Castro, E. Castro-Nallar, M.A. **Valvano**, and C.P. Saavedra. 2019. The transcription factor ArcA modulates *Salmonella*'s metabolism in response to neutrophils hypochlorous acid-mediated stress. *Frontiers in Microbiology* 2019 Dec 5;10:2754.
188. Oppy, C.C, L. Jebeli, M. Kuba, C.V. Oates, R. Strugnell, L.E. Edgington-Mitchell, M.A. **Valvano**, E.L. Hartland, H.J. Newton, and N.E. Scott. 2019. Loss of O-linked protein glycosylation in *Burkholderia cenocepacia* impairs biofilm formation, siderophore activity and alters transcriptional regulators. *mSphere* 2019 Nov 13;4(6).
187. Fathy Mohamed, Y., NE. Scott, A. Molinaro, C. Creuzenet, X. Ortega, G. Lertmemongkolchai, M.M. Tunney, H. Green, A.M. Jones, D. DeShazer, B.J. Currie, L.J. Foster, R. Ingram, C. De Castro, and M.A. **Valvano**\*. 2019. A general protein O-glycosylation machinery conserved in *Burkholderia* species improves bacterial fitness and elicits glycan immunogenicity in humans. *Journal of Biological Chemistry*. Sep 6;294(36):13248-13268. doi: 10.1074/jbc.RA119.009671.
186. Pérez-Burgos, M., I. García-Romero, J. Jung, M. A. **Valvano**, and L. Søgaard-Andersen. 2019. Identification of the lipopolysaccharide O-antigen biosynthesis priming enzyme and the O-antigen ligase in *Myxococcus xanthus*: Critical role of LPS O-antigen in motility and development. *Molecular Microbiology* Oct;112(4):1178-1198.
185. Olagnon, C. J. Monjaras Feria, C. Grünwald-Gruber, M. Blaukopf, M.A. **Valvano**, and P. Kosma. 2019. Synthetic phosphodiester-linked 4-amino-4-deoxy-L-arabinose derivatives

- demonstrate ArnT is an inverting aminoarabinosyl transferase. *ChemBiochem* **20**(23):2936-2948.
184. An, S-q., J. Murtagh, K.B. Twomey, M.K. Gupta, T.P. O'Sullivan, R. Ingram, M.A. **Valvano\***, Ji-I. Tang. 2019. Modulation of antibiotic sensitivity and biofilm formation in *Pseudomonas aeruginosa* by interspecies diffusible signal factor analogues. *Nature Communications* May 27;10(1):2334. doi: 10.1038/s41467-019-10271-4.
183. Lee, J., D.S. Patel, J. Stähle, S-J. Park, N.R. Kern, S. Kim, J. Lee, X. Cheng, M.A. **Valvano**, O. Holst, Y.A. Knirel, Y. Qi, S. Jo, J.B. Klauda, G. Widmalm, and W. Im. 2019. CHARMM-GUI Membrane Builder for Complex Biological Membrane Simulations with Glycolipids and Lipoglycans. *Journal of Chemical Theory and Computation* **15**: 775-786.
182. Naquib, M.M. and M.A. Valvano\*. 2018. Vitamin E increases antimicrobial sensitivity by inhibiting bacterial lipocalin antibiotic binding. *mSphere* Dec 12;3(6). pii: e00564-18. doi: 10.1128/mSphere.00564-18.
181. Pardo-Esté, C., A.A. Hidalgo, C. Aguirre, A. Briones, C. Cabezas, J. Castro-Severyn, J.A. Fuentes, M.C. Opazo, C.A. Riedel, C. Otero, R. Pacheco, M.A. **Valvano**, and C.P. Saavedra. 2018. The ArcAB two-component regulatory system promotes resistance to reactive oxygen species and systemic infection by *Salmonella* Typhimurium. *PlosOne* 13(9):e0203497.
180. Ruan, V., J. Monjarás Feria, M. Hamad, and M.A. **Valvano\***. 2018. *Escherichia coli* and *Pseudomonas aeruginosa* lipopolysaccharide O-antigen ligases share similar membrane topology and biochemical properties. *Molecular Microbiology* **110** (1), 95–113. doi: 10.1111/mmi.14085.
179. El-Halfawy, O.E., M.M. Naquib, and M.A. **Valvano\***. 2017. Novel antibiotic combinations proposed for treatment of *Burkholderia cepacia* complex infections. *Antimicrobial Resistance & Infection Control*. 6:120. doi: 10.1186/s13756-017-0279-8.
178. Perrin, E., M. Fondi, E. Bosi, A. Mengoni, S. Buroni, V.C. Scoffone, M.A. **Valvano**, and R. Fani. 2017. Subfunctionalization influences the expansion of bacterial multidrug antibiotic resistance. *BMC Genomics* 8(1):834. doi: 10.1186/s12864-017-4222-4
177. Hassan, A.A., R.F. Maldonado, S.C. Santos, F. Di Lorenzo, A. Silipo, C.P., V.S. Cooper, A. Molinaro, M.A. **Valvano**, and I. Sa-Correia. 2017. Structure of O-Antigen and Hybrid Biosynthetic Locus in *Burkholderia cenocepacia* Clonal Variants Recovered from a Cystic Fibrosis Patient. *Frontiers in Microbiology* Jun 8;8:1027.
176. El-Halfawy, O.E., J. Klett, R.J. Ingram, S.A. Loutet, M.E.P. Murphy, S. Martín-Santamaría, and M.A. **Valvano\***. 2017. Antibiotic capture by bacterial lipocalins uncovers an extracellular mechanism of intrinsic antibiotic resistance. *mBio* 017 Mar 14;8(2). pii: e00225-17. doi: 10.1128/mBio.00225-17.
175. Fathy Mohamed, Y., M. Hamad, X.P. Ortega, and M.A. **Valvano\***. 2017. The LpxL acyltransferase is required for normal growth and penta-acylation of lipid A in *Burkholderia cenocepacia*. *Molecular Microbiology* **104**:144-162.
174. Dennehy R, M. Romano, A. Ruggiero, Y. Fathy Mohamed, S.L. Dignam, C. Mujica Troncoso, M. Callaghan, M.A. **Valvano**, R. Berisio, and S. McClean. 2017. The *Burkholderia cenocepacia* peptidoglycan-associated lipoprotein is involved in epithelial cell attachment and elicitation of inflammation. *Cellular Microbiology*. 2017 May;19(5). doi: 10.1111/cmi.12691. Epub 2016 Nov 25. **(featured by Cellular Microbiology as "Editor's choice", vol 19, issue 5)**
173. Roszniowski, B.A. Latka, B. Maciejewska, D. Vandenheuvel, T. Olszak, Y. Briers, G.S. Holt, M.A. **Valvano**, R. Lavigne, D.L. Smith, and Z. Drulis-Kawa. 2017. The temperate *Burkholderia* phage AP3 of the *Peduvirinae* shows efficient antimicrobial activity against *B. cenocepacia* of the IIIA lineage. *Applied Microbiology and Biotechnology* **101**:1203-1216.
172. Aubert, D.F., X. Hao, J. Yang, X. Shi, W. Gao, L. Li, F. Bisaro, S. Chen, M.A. **Valvano\***, and F. Shao\*. 2016. A *Burkholderia* Type VI Effector Deamidates Rho GTPases to Activate the Pyrin Inflammasome. *Cell Host & Microbe* **19**:664-674. doi: 10.1016/j.chom.2016.04.004.
171. Di Lorenzo, F., A. Silipo, T. Matier, A. Hanuszkiewicz, J.S. Elborn, R. Lanzetta, L. Sturiale, A. Scamporrino, D. Garozzo, M.A. **Valvano**, M.M. Tunney, and A. Molinaro. 2016. *Prevotella denticola* lipopolysaccharide from a Cystic Fibrosis isolate possesses a unique chemical structure. *European Journal of Chemistry* 1732-1738. DOI: 10.1002/ejoc.201600037.
170. Andrade, A., F. Tavares-Carreón, M. Khodai-Kalaki, and M.A. **Valvano\***. 2016. Tyrosine phosphorylation and dephosphorylation in *Burkholderia cenocepacia* affect biofilm formation,

- growth under nutritional deprivation, and pathogenicity. *Applied and Environmental Microbiology* **82**: 843-856.
169. Tavares-Carreón, F., Y. Fathy Mohamed, A. Andrade, and M.A. **Valvano\***. 2015. ArnT proteins that catalyse the glycosylation of lipopolysaccharide share common features with bacterial N-oligosaccharyltransferases. *Glycobiology* **26**:286-300.
168. Aubert, D.F., S. Hu, and M.A. **Valvano\***. 2015. Quantification of Type VI secretion system activity in macrophages infected with *Burkholderia cenocepacia*. *Microbiology* **161**:2161-2173.
167. Cullen, L., R. Weiser, T. Olszak, R.F. Maldonado, A.S. Moreira, L. Slachmuylders, G. Brackman, T.S. Paunova-Krasteva, P. Zarnowiec, G. Czerwonka, J. Reilly, P. Drevinek, W. Kaca, O. Melter, A. de Soyza, A. Perry, C. Winstanley, S.R. Stoitsova, R. Lavigne, E. Mahenthalingam, I. Sá-Correia, T. Coenye, Z. Drulis-Kawa, D. Augustyniak, M.A. **Valvano**, and S. McClean. 2015. Phenotypic characterisation of an international *Pseudomonas aeruginosa* reference panel: Strains of cystic fibrosis origin show less in vivo virulence than non-CF strains. *Microbiology* **161**: 1961-1977.
166. Di Lorenzo, F., Ł. Kubik, A. Oblak, N.I. Lore, C. Cigana, R. Lanzetta, M. Parrilli, M.A. Hamad, A. De Soyza, A. Silipo, R. Jerala, A. Bragonzi, M.A. **Valvano**, S. Martín-Santamaría, and A. Molinaro. 2015. Activation of human TLR4/MD-2 by hypoacylated lipopolysaccharide from a clinical isolate of *Burkholderia cenocepacia*. *Journal of Biological Chemistry* **290**:21305-21319.
165. Loutet, S.A., El-Halfawy, O.M, Jassem, A.N., Sánchez López, J.M., Fernández Medarde, A., Speert, D.P., Davies, J.E., and M.A. **Valvano\***. 2015. Identification of synergists that potentiate the action of polymyxin B against *Burkholderia cenocepacia*. *International Journals of Antimicrobial Agents* **46**:376-380.
164. Tavares-Carreón, F., K.B. Patel, and M.A. **Valvano\***. 2015. *Burkholderia cenocepacia* and *Salmonella enterica* ArnT proteins that transfer 4-amino-4-deoxy-L-arabinose to lipopolysaccharide share membrane topology and functional amino acids. *Scientific Reports* Jun1, 5:10773. doi: 10.1038/srep10773.
163. Khodai-Kalaki, M., A. Andrade, Y. Fathy Mohamed, and M.A. **Valvano\***. 2015. *Burkholderia cenocepacia* lipopolysaccharide modification and flagellin glycosylation affect virulence but not innate immune recognition in plants. *mBio* Jun 4;6(3).
162. Wong. A., D. Lange; S. Houle, N.P. Arbatsky, M.A. **Valvano**, Y.A. Knirel, C.M. Dozois, and C. Creuzenet. 2015. Role of capsular modified heptose in the virulence of *Campylobacter jejuni*. *Molecular Microbiology* **96**:1136-1158.
161. Schmerk, C.L, P.V. Welander, M.A. Hamad, K.L. Bain, M.A. Bernards, R.E. Summons, and M.A. **Valvano\***. 2015. Elucidation of the *Burkholderia cenocepacia* hopanoid biosynthesis pathway uncovers functions for conserved proteins in hopanoid-producing bacteria. *Environmental Microbiology* **17**: 735-750.
160. Furlong, S.E., A. Ford, L. Albarnez-Rodriguez, and M.A. **Valvano\***. 2015. Topological analysis of the Escherichia coli WcaJ protein reveals a new conserved configuration for the polyisoprenyl-phosphate hexose-1-phosphate transferase family. *Scientific Reports* **5**, 9178; DOI:10.1038/srep09178.
159. Hanuszkiewicz, A., P. Pittock, F. Humphries, H. Moll, A. Roa Rosales, A. Molinaro, P.N. Moynagh, G.A. Lajoie, and M.A. **Valvano\***. 2014. Identification of the flagellin glycosylation system in *Burkholderia cenocepacia* and the contribution of glycosylated flagellin to evasion from human innate immune responses. *Journal of Biological Chemistry* **289**: 19231-19244. (**“Recommended” in Faculty1000; Eberl; 2014**)
158. El-Halfawy, O.M, and M.A. **Valvano\***. 2014. Putrescine reduces antibiotic-induced oxidative stress as a mechanism of modulation of antibiotic resistance in *Burkholderia cenocepacia*. *Antimicrobials Agents and Chemotherapy* **58**:4162-4171.
157. Andrade, A. and M.A **Valvano\***. 2014. A *Burkholderia cenocepacia* gene encoding a non-functional tyrosine phosphatase is required for the delayed maturation of the bacteria-containing vacuoles in macrophages. *Microbiology* **160**:1332-1345.
156. Fathy Mohamed, Y. and M.A. **Valvano\***. 2014. A *Burkholderia cenocepacia* MurJ (MviN) homologue is essential for cell wall peptidoglycan synthesis and bacterial viability. *Glycobiology* **24**:564-576.

155. Khodai-Kalaki, M., D.F. Aubert, and M.A. **Valvano\***. 2013. Characterization of the AtsR phosphorelay pathway and identification of its response regulator in *Burkholderia cenocepacia*. *Journal of Biological Chemistry* **288**: 30473-30484.
154. El-Halfawy, O.M., and M.A. **Valvano\***. 2013. Chemical communication of antibiotic resistance by a highly resistant subpopulation of bacterial cells. *Plos One* Jul 3;8(7):e68874. doi: 10.1371/journal.pone.0068874. **(Featured in EveryONE PLOS ONE Community Blog “Resisting Antibiotics: Some Bacteria Get By With a Little Help From Their Friends” <http://blogs.plos.org/everyone/2013/07/03/resisting-antibiotics-some-bacteria-get-by-with-a-little-help-from-their-friends/>)**
153. Sass, A.M., C. Schmerk, K. Agnoli, P.J. Norville, L. Eberl, M.A. **Valvano**, and E. Mahenthalingam. 2013. Unexpected discovery of a novel low-oxygen activated locus for the anoxic persistence of *Burkholderia cenocepacia*. *ISME Journal* **7**:1568-1581.
152. Sarnacki, S.H., M. Aya Castañeda, M. Noto Llana, M.N. Giacomodonato, M.A. **Valvano**, and M.C. Cerquetti. 2013. Dam methylation participates in the regulation of PmrA/PmrB and RcsC/YojN/RcsB two component regulatory systems in *Salmonella enterica* serovar Enteritidis. *PLoS One* **8**(2):e56474.
151. Lee, T-W., T.B. Verhey, P.A. Antiperovitch, D. Atamanyuk, N.Desroy, C. Oliveira, A. Denis, V. Gerusz, E. Drocourt, S.A. Loutet, M. Hamad, C. Stanetty, S.N. Andres, S. Sugiman-Marangos, P. Kosma, M.A. **Valvano**, F. Moreau, and M.S. Junop. 2012. Structure, function and inhibition of D-glycero-β-D-manno-Heptose 7-Phosphate Kinase (HldA) from *Burkholderia cenocepacia*: insights for design of antivirulence drugs and antibiotic adjuvants targeting LPS biosynthesis in Gram-negative bacteria. *Journal of Medicinal Chemistry* **56**: 1405-1417.
150. Aubert, D.F., E.P. O’Grady, M.A. Hamad, P.A. Sokol, and M.A. **Valvano\***. 2013. The *Burkholderia cenocepacia* sensor kinase hybrid AtsR is a global regulator modulating quorum-sensing signaling. *Environmental Microbiology* **15**:372-385
149. Abdulrahman, B.A, A.A. Khweek, A. Akhter, K. Caution, M.T.H. Hassan, Y. Zhang, P.D. Rowland, S. Malhotra, F. Aeffner, I.C. Davis, M.A. **Valvano**, and A.O. Amer. 2013. Depletion of the ubiquitin binding adaptor molecule SQSTM1/p62 from macrophages harboring the *cfr* ΔF508 mutation improves the delivery of *Burkholderia cenocepacia* to the autophagic machinery. *Journal of Biological Chemistry* **288**:2049-2058.
148. Schmerk, C.L, and M.A. **Valvano\***. 2013. *Burkholderia multivorans* survival and trafficking in macrophages. *Journal of Medical Microbiology* **62**:173-184.
147. Furlong, S.E., and M.A. **Valvano\***. 2012. Characterization of the highly conserved VFMGD motif in a bacterial polyisoprenyl-phosphate *N*-acetylaminosugar-1-phosphate transferase. *Protein Science* **21**:1366-1375.
146. Rosales-Reyes, R., M.S. Saldías, D.F. Aubert, O.M. El-Halfawy, and M.A. **Valvano\***. 2012. The *subB* gene of *Burkholderia cenocepacia* is required for protein secretion, biofilm formation, motility and polymyxin B resistance. *Microbiology* **158**:2315-2324.
145. Rosales-Reyes, R. D.F. Aubert, J.S. Tolman, A.O. Amer, and M.A. **Valvano\***. 2012. *Burkholderia cenocepacia* Type VI Secretion System Mediates Escape of Type II Secreted Proteins into the Cytoplasm of Infected Macrophages. *PLoS One* **7**(7):e41726.
144. Hamad, M.A, F. Di Lorenzo, A. Molinaro, and M.A. **Valvano\***. 2012. Aminoarabinose is essential for lipopolysaccharide export and intrinsic antimicrobial peptide resistance in *Burkholderia cenocepacia*. *Molecular Microbiology* **85**:962-974. **(“Recommended” in Faculty1000; Matson & DiRita; 2012)**
143. Juhas, M., M. Stark, C. von Mering, P. Lumjaktase, D.W. Crook, M.A. **Valvano**, and L. Eberl. 2012. High confidence prediction of essential genes in the genus *Burkholderia*. *PLoS One* **7**(6):e40064.
142. Hoare, A., D. Bravo, M. Martinic, M.A. **Valvano**, I. Contreras, and S.A. Álvarez. 2012. The normal chain length distribution of the O antigen is required for the interaction of *Shigella flexneri* 2a with polarized Caco-2 cells. *Biological Research* **45**: 21-26.
141. Patel, K. B., E. Toh, X.B. Fernandez, A. Hanuszkiewicz, G.G. Hardy, Y.V. Brun, M.A. Bernards, and M.A. **Valvano\***. 2012. Functional characterization of UDP-Glucose:Undecaprenyl-Phosphate Glucose-1-Phosphate Transferases of *Escherichia coli* and *Caulobacter crescentus*. *Journal of Bacteriology* **194**:2646-2657.
140. Tolman, J.S., and M.A. **Valvano\***. 2012. Global changes in gene expression by the

- opportunistic pathogen *Burkholderia cenocepacia* in response to internalization by murine macrophages. *BMC Genomics* **13**:63.
139. Gavrillin, M.A., D.H.A. Abdelaziz, M. Mostafa, B.A. Abdulrahman, J. Grandhi, A. Akhter, A. Abu Khweek, D.F. Aubert, M.A. **Valvano**, M.D. Wewers, and A.O. Amer. 2012. Activation of the pyrin inflammasome by intracellular *Burkholderia cenocepacia*. *Journal of Immunology* **188**:3469-77.
138. Pan, Y. X. Ruan, M.A. **Valvano**, and L. Konermann. 2012. Validation of protein topology models by oxidative labeling and mass spectrometry. *Journal of the American Society for Mass Spectrometry* **23**:889-898.
137. Rosales-Reyes, R., A.M. Skeldon, D.F. Aubert, and M.A. **Valvano**\*. 2012. The Type VI secretion system of *Burkholderia cenocepacia* targets multiple Rho family GTPases disrupting the actin cytoskeleton and the assembly of NADPH oxidase complex in macrophages. *Cellular Microbiology* **14**: 255-273.
136. Flannagan, R.S., V. Jaumouillé, K.K. Huynh, J.D. Plumb, G.P. Downey, M.A. **Valvano**, and S. Grinstein. 2012. *Burkholderia cenocepacia* disrupts host cell actin cytoskeleton by inactivating Rac and Cdc42. *Cellular Microbiology* **14**: 239-254.
135. Ruan, X., D.E. Loyola, C.L. Marolda, J.M. Perez-Donoso, and M.A. **Valvano**\*. 2012. The WaaL O-antigen lipopolysaccharide ligase has features in common with metal ion-independent inverting glycosyltransferases. *Glycobiology* **22**:288-299.
134. Patel, K. B., E. Ciepichal, E. Swiezewska, and M.A. **Valvano**\*. 2012. The C-terminal domain of the *Salmonella enterica* WbaP (UDP-galactose:Und-P galactose-1-phosphate transferase) is sufficient for catalytic activity and specificity for undecaprenyl monophosphate. *Glycobiology* **22**:116-122.
133. Schmerk, C.L., M.A. Bernards, and M.A. **Valvano**\*. 2011. Hopanoid production is required for low pH tolerance, antimicrobial resistance, and motility in *Burkholderia cenocepacia*. *Journal of Bacteriology* **193**:6712-6723.
132. Loutet, S.A., F. Di Lorenzo, C.A. Clarke, A. Molinaro, and M.A. **Valvano**\*. 2011. Transcriptional responses of *Burkholderia cenocepacia* to polymyxin B in isogenic strains with diverse polymyxin B resistance phenotypes. *BMC Genomics* **12**:472.
131. Abdulrahman, B.A., A. Abu Khweek, A. Akhter, K. Caution, S. Kotrange, D.H.A. Abdelaziz, C. Newland, R. Rosales-Reyes, B. Kopp, K. McCoy, R. Montione, L.S. Schlesinger, M.A. Gavrillin, M.D. Wewers, M.A. **Valvano**, and A.O. Amer. 2011. Autophagy stimulation by Rapamycin suppresses lung inflammation and infection by *Burkholderia cenocepacia* in a model of cystic fibrosis. *Autophagy* **7**:1759-1770. **(Featured article: A. Nemchemko, Autophagy, 7: 1271, 2001; R.J. Devenish, Autophagy, 7:1269, 2011)**
130. Šulák, O. G. Cioci, E. Lameignère, V. Balloy, A. Round, I. Gutsche, L. Malinovská, M. Chignard, P. Kosma, D.F. Aubert, C.L. Marolda, M.A. **Valvano**, M. Wimmerová, A. Imberty. 2011. *Burkholderia cenocepacia* BC2L-C is a Super Lectin with Dual Specificity and Proinflammatory Activity. *PLoS Pathogens* **7**:e1002238.
129. Bravo, D. A. Hoare, L. Leyton, M.A. **Valvano**, I. Contreras. 2011. Type IV<sub>B</sub> pili are required for invasion but not for adhesion of *Salmonella enterica* serovar Typhi into BHK epithelial cells in a cystic fibrosis transmembrane conductance regulator-independent manner. *Microbial Pathogenesis* **51**:373-377.
128. Cremer, T.J., P. Shah, E. Cormet-Boyaka, M.A. **Valvano**, J.P. Butchar, and S. Tridandapani. 2011. Akt-mediated pro-inflammatory response of mononuclear phagocytes infected with *Burkholderia cenocepacia* occurs by a novel GSK3 $\beta$ -dependent, IKK-independent mechanism. *Journal of Immunology* **187**:635-643.
127. Kalynych, S. X. Ruan, M.A. **Valvano**, and M. Cygler. 2011. Structure-guided investigation of LPS O-antigen chain length regulators reveals regions critical for modal length control. *Journal of Bacteriology* **193**:3710-3721.
126. Kotrange, S. B. Kopp, A. Akhter, D. Abdelaziz, A. Abu Khweek, K. Caution, B. Abdulrahman, M.D. Wewers, K. McCoy, C. Marsh, S.A. Loutet, X. Ortega, M.A. **Valvano**, and A.O. Amer. 2011. *Burkholderia cenocepacia* O polysaccharide chain is required for caspase-1-dependent IL-1 $\beta$  production in macrophages. *Journal of Leukocyte Biology* **89**:481-488.
125. Bravo, D. A. Hoare, A. Silipo, S.A. Álvarez, A. Molinaro, M.A. **Valvano**, and I. Contreras. 2011. Different sugar residues of the lipopolysaccharide outer core are required for early



- interactions of serovars Typhi and Typhimurium with epithelial cells. *Microbial Pathogenesis* **50**:70-80.
124. Loutet, S.A., L.E. Mussen, R.S. Flannagan, and M.A. **Valvano\***. 2011. A two-tier model of antimicrobial peptide resistance in *Burkholderia cenocepacia*. *Environmental Microbiology Reports* **3**:278-285.
123. Marolda, C.L., B. Li, M. Lung, M. Yang, A. Hanuszkiewicz, A. Roa Rosales, and M.A. **Valvano\***. 2010. Membrane topology and identification of critical amino acid residues in the Wzx O-antigen translocase from *Escherichia coli* O157:H4. *Journal of Bacteriology* **192**:6160-6171.
122. Aubert, D., D.K. MacDonald, and M.A. **Valvano\***. 2010. BcsK<sub>C</sub> is an essential protein for the Type VI secretion system activity in *Burkholderia cenocepacia* that forms an outer membrane complex with BcsL<sub>B</sub>. *Journal of Biological Chemistry* **285**:35988-35998.
121. Huynh, K.K., J.D. Plumb, M.A. **Valvano**, and S. Grinstein. 2010. Inactivation of macrophage Rab7 by *Burkholderia cenocepacia*. *Journal of Innate Immunity* **2**:522-533.
120. Patel, K.B.; S.E. Furlong, and M.A. **Valvano\***. 2010. Functional analysis of the C-terminal domain of the WbaP protein that mediates initiation of O antigen synthesis in *Salmonella enterica*. *Glycobiology* **20**:1389-1401.
119. Hamad, M.A., A.M. Skeldon, and M.A. **Valvano\***. 2010. Construction of aminoglycoside-sensitive *Burkholderia cenocepacia* strains for use in studies of intracellular bacteria involving the gentamicin protection assay. *Applied and Environmental Microbiology* **76**:3170-3176.
118. Clarke, D.J., X.P. Ortega, C.L. Mackay, M.A. **Valvano**, J.R.W. Govan, D.J. Campopiano, P. Langridge-Smith, and A.R. Brown. 2010. Subdivision of the bacterioferritin comigratory protein (BCP) family of bacterial peroxiredoxins based on catalytic activity. *Biochemistry* **49**:1319-1330.
117. Taylor, P., S. Sugiman-Marangos, K. Zhang, M.A. **Valvano**, G. Wright, and M. Junop. 2010. Structural and kinetic characterization of the LPS biosynthetic enzyme D- $\alpha$ , $\beta$ -D-heptose-1,7-bisphosphate phosphatase (GmhB) from *Escherichia coli*. *Biochemistry* **49**:1333-1341.
116. Novoa-Garrido, M., T.M. Steinum, C.L. Marolda, M.A. **Valvano**, and H. Sørnum. 2009. Reduced lipopolysaccharide O antigen expression, increased acid susceptibility and multicellular behaviour in an *Escherichia coli* isolate after long-term *in vitro* exposure to formic acid. *Microbial Ecology in Health and Disease* **21**:87-94.
115. Buroni, S., M.R. Pasca, R.S. Flannagan, S. Bazzini, A. Milano, I. Bertani, V. Venturi, M.A. **Valvano**, and G. Riccardi. 2009. Assessment of three resistance-nodulation-cell division drug efflux transporters of *Burkholderia cenocepacia* in intrinsic antibiotic resistance. *BMC Microbiology* **9**:200.
114. Sarnacki, S.H., C.L. Marolda, M. Noto Llana, M.N. Giacomodonato, M.A. **Valvano**, and M.C. Cerquetti. 2009. Dam methylation controls O-antigen length chain in *Salmonella enteritidis* by regulating the expression of Wzz protein. *Journal of Bacteriology* **191**:6694-6700.
113. Saldías, M.S., X. Ortega, and M.A. **Valvano\***. 2009. *Burkholderia cenocepacia* O antigen lipopolysaccharide prevents phagocytosis by macrophages and adhesion to epithelial cells. *Journal of Medical Microbiology* **58**:1542-1548.
112. Saldías, M.S., and M.A. **Valvano\***. 2009. Interactions of *Burkholderia cenocepacia* and other *Burkholderia cepacia* complex bacteria with epithelial and phagocytic cells. *Microbiology* **155**:2809-2817.
111. Carter, J.A., J.C. Jiménez, M. Zaldívar, S.A. Álvarez, C.L. Marolda, M.A. **Valvano**, and I. Contreras. 2009. The cellular level of O-antigen polymerase Wzy determines chain length regulation by WzzB and Wzz<sub>pHS-2</sub> in *Shigella flexneri* 2a. *Microbiology* **155**:3260-3269.
110. Ortega, X., A. Silipo, M.S. Saldías, C.C. Bates, A. Molinari, and M.A. **Valvano\***. 2009. Biosynthesis and structure of the *Burkholderia cenocepacia* K56-2 lipopolysaccharide core oligosaccharide. Truncation of the core oligosaccharide leads to increased binding and sensitivity to polymyxin B. *Journal of Biological Chemistry* **284**:21738-21754.
109. Loutet, S.A., S.J. Bartholdson, J.R.W. Govan, D.J. Campopiano, and M.A. **Valvano\***. 2009. Contributions of two UDP-glucose dehydrogenases to viability and polymyxin B resistance of *Burkholderia cenocepacia*. *Microbiology* **155**:2029-2039.
108. Keith, K.E. D.W. Hynes, J.E. Sholdice, and M.A. **Valvano\***. 2009. Delayed association of the NADPH oxidase complex with macrophage vacuoles containing the opportunistic pathogen

- Burkholderia cenocepacia*. Microbiology 155:1004-1015.
107. Pérez, J.M., M.A. McGarry, C.L. Marolda, and M.A. Valvano\*. 2008. Functional analysis of the large periplasmic loop of the *Escherichia coli* K-12 WaaL O-antigen ligase. Molecular Microbiology 70:1424-1440.
106. Lamothe, J., and M.A. Valvano\*. 2008. *Burkholderia cenocepacia*-induced delay of acidification and phagolysosomal fusion in cystic fibrosis transmembrane conductance regulator (CFTR)-defective macrophages. Microbiology 154:3825-34.
105. Bravo, D., J. Carter, A. Hoare, S. Álvarez, C. Blondel, M. Zaldívar, M.A. Valvano, and I. Contreras. 2008. Growth-phase regulation of lipopolysaccharide O-antigen chain length influences serum resistance in serovars of *Salmonella*. Journal of Medical Microbiology 57:938-946.
104. Aubert, D.F., R.S. Flannagan, and M.A. Valvano\*. 2008. A novel sensor kinase-response regulator hybrid controls biofilm formation and virulence in *Burkholderia cenocepacia*. Infection and Immunity 76:1979-1991.
103. Flannagan, R.S., T. Linn, and M.A. Valvano\*. 2008. A system for the construction of targeted unmarked gene deletions in the genus *Burkholderia*. Environmental Microbiology 10:1652-1660.
102. Jorda-Vargas L, J. Degrossi, N.C. Castañeda, M. D'Aquino, M.A. Valvano, A. Procopio, L. Galanternik, D. Centrón. 2008. Prevalence of indeterminate genetic species of *Burkholderia cenocepacia* complex in a cystic fibrosis center from Argentina. Journal of Clinical Microbiology 46:1151-1152.
101. Marolda, C.L., E.R. Haggerty, M. Lung, and M.A. Valvano\*. 2008. Functional analysis of predicted coiled coil regions in the *Escherichia coli* K-12 O antigen polysaccharide chain length determinant Wzz. Journal of Bacteriology 190:2128-2137.
100. Saldías, M.S., J. Lamothe, R. Wu, and M.A. Valvano\*. 2008. *Burkholderia cenocepacia* requires the RpoN sigma factor for biofilm formation and intracellular trafficking within macrophages. Infection and Immunity 76:1059-1067.
99. Taylor, P.L., K.M. Blakely, G.P. de Leon, J.E. Walker, F. McArthur, E. Evdakimova, K. Zhang, M.A. Valvano, G.D. Wright, and M.S. Junop. 2008. Structure and function of GmhA (sedoheptulose 7-phosphate isomerase): A critical enzyme for lipopolysaccharide biosynthesis and a target for antibiotic adjuvants. Journal of Biological Chemistry 283:2835-2845.
98. Flannagan, R.S., and M.A. Valvano\*. 2008. *Burkholderia cenocepacia* requires RpoE for growth under stress conditions and delay of phagolysosomal fusion in macrophages. Microbiology 154:643-653.
97. Saldías, M.S., K. Patel, C.L. Marolda, M. Bittner, I. Contreras\*, and M.A. Valvano\*. 2008. Distinct functional domains of the *Salmonella enterica* WbaP transferase that is involved in the initiation reaction for synthesis of the O antigen subunit. Microbiology 154:440-453.
96. Keith, K.E., L. Killip, P. He, G.R. Moran, and M.A. Valvano\*. 2007. *Burkholderia cenocepacia* C5424 produces a pigment with antioxidant properties using a homogentisate intermediate. Journal of Bacteriology 189:9057-9065.
95. Ha, S-D., D. Ng, J. Lamothe, M.A. Valvano, J. Han, S.O. Kim. 2007. Mitochondrial proteins Bnip3 and Bnip3L are involved in anthrax lethal toxin-induced macrophage cell death. The Journal of Biological Chemistry 282:26275-26283.
94. Carter, J.A., C.J. Blondel, M. Zaldívar, S.A. Álvarez, C.L. Marolda, M.A. Valvano, I. Contreras. 2007. O-antigen modal chain length in *Shigella flexneri* 2a is growth-regulated through RfaH-mediated transcriptional control of the *wzy* gene. Microbiology 153:3499-3507.
93. Tatar, L.D., C.L. Marolda, A.N. Polischuk, D. van Leeuwen, and M.A. Valvano\*. 2007. An *Escherichia coli* undecaprenyl-pyrophosphate phosphatase implicated in undecaprenyl-phosphate recycling. Microbiology 153: 2518-2529.
92. Bertot, G.M., M. Restelli, L. Galanternik, R.C. Aranibar Urey, M.A. Valvano, and S. Grinstein. 2007. Nasal immunization with *Burkholderia multivorans* outer membrane proteins and the mucosal adjuvant adamantylamide dipeptide confers efficient protection against experimental lung infections with *B. multivorans* and *B. cenocepacia*. Infection and Immunity 75:2740-2752.
91. Ortega, X.P., S.T. Cardona, A.R. Brown, S.A. Loutet, R.S. Flannagan, D.J. Campopiano, J.R.W. Govan, and M.A. Valvano\*. 2007. A putative gene cluster for aminoarabinose

- biosynthesis is essential for *Burkholderia cenocepacia* viability. *Journal of Bacteriology* **189**:3639-3644. **(Featured in Nature Reviews in Microbiology, 5:335, 2007; "Sweet news for CF sufferers")**
90. Keith, K.E., and M.A. **Valvano**\*. 2007. Characterization of SodC, a periplasmic superoxide dismutase from *Burkholderia cenocepacia*. *Infection and Immunity* **75**:2451-2460.
89. Lehrer, J., K.A. Vigeant, L.D. Tatar, and M.A. **Valvano**\*. 2007. Functional characterization and membrane topology of *Escherichia coli* WecA, a sugar-phosphate transferase initiating the biosynthesis of enterobacterial common antigen and O antigen lipopolysaccharide. *Journal of Bacteriology* **189**:2618-2628.
88. Steiner, K., R. Novotny, K. Patel, E. Vinogradov, C. Whitfield, M.A. **Valvano**, P. Messner, and C. Schäffer. 2007. Functional characterization of the initiation enzyme for S-layer glycoprotein biosynthesis in *Geobacillus stearothermophilus* NRS 2004/3a. *Journal of Bacteriology* **189**:2590-2598.
87. Flannagan, R.S., D. Aubert, C. Kooi, P.A. Sokol, and M.A. **Valvano**\*. 2007. *Burkholderia cenocepacia* requires a periplasmic HtrA protease for growth under thermal and osmotic stress and for survival in vivo. *Infection and Immunity* **75**:1679-1689.
86. Lamothe, J., K.K. Huynh, S. Grinstein, and M.A. **Valvano**\*. 2007. Intracellular survival of *Burkholderia cenocepacia* in macrophages is associated with a delay in the maturation of bacteria-containing vacuoles. *Cellular Microbiology* **9**:40-53.
85. Maloney, K.E., and M.A. **Valvano**\*. 2006. The *mgtC* gene of *Burkholderia cenocepacia* is required for growth under magnesium limitation and intracellular survival in macrophages. *Infection and Immunity* **74**:5477-5486.
84. Marolda, C.L., L.D. Tatar, C. Alaimo, M. Aebi, and M.A. **Valvano**\*. 2006. Interplay of the Wzx translocase and its corresponding polymerase and chain length regulator proteins in the translocation and periplasmic assembly of lipopolysaccharide O antigen. *Journal of Bacteriology* **188**:5124-5135.
83. Wacker, M., M.F. Feldman, N. Callewaert, B.R. Clarke, M. Hernandez, E.D. Vinés, M.A. **Valvano**, C. Whitfield, and M. Aebi. 2006. Substrate specificity of bacterial oligosaccharyltransferase suggests a common transfer mechanism for the bacterial and eukaryotic systems. *Proceedings of the National Academy of Sciences USA* **103**:7088-7093.
82. De Leon, G.P., N.H. Elowe, K.P. Koteva, M.A. **Valvano**, G.D. Wright. 2006. An *in vitro* screen of bacterial lipopolysaccharide biosynthetic enzymes identifies the first inhibitor of ADP-heptose biosynthesis. *Chemistry & Biology* **13**:437-441. **(Featured Article)**.
81. Cardona, S.T., C.L. Mueller, and M.A. **Valvano**\*. 2006. Identification of essential operons in *Burkholderia cenocepacia* with a rhamnose-inducible promoter. *Applied and Environmental Microbiology* **72**:2547-2555.
80. Alaimo, C., I. Catrein, L. Morf, C.L. Marolda, N. Callewaert, M.A. **Valvano**, M.F. Feldman, and M. Aebi. 2006. Two distinct but interchangeable mechanisms for protein-mediated flipping of lipid-linked oligosaccharides across membranes. *EMBO Journal* **25**:967-976. **(“Recommended” in the Faculty of 1000)**
79. Loutet, S.A., R.S. Flannagan, C. Kooi, P.A. Sokol, and M.A. **Valvano**\*. 2006. A complete lipopolysaccharide inner core oligosaccharide is required for resistance of *Burkholderia cenocepacia* to antimicrobial peptides and bacterial survival *in vivo*. *Journal of Bacteriology* **188**:2073-2080.
78. Hoare, A., M. Bittner, J. Carter, S. Alvarez, M. Zaldívar, D. Bravo, M.A. **Valvano**, and I. Contreras. 2006. The outer core lipopolysaccharide of *Salmonella enterica* serovar Typhi is required for bacterial entry into epithelial cells. *Infection and Immunity* **74**:1555-1564.
77. Wopperer, J., S.T. Cardona, B. Huber, C.A. Jacobi, M.A. **Valvano**, and L. Eberl. 2006. A quorum quenching approach to investigate the conservation of quorum sensing regulated functions within the *Burkholderia cepacia* complex. *Applied and Environmental Microbiology* **72**:1579-1587.
76. Cardona, S.T., J. Wopperer, L. Eberl, and M.A. **Valvano**. 2005. Diverse pathogenicity of *Burkholderia cepacia* complex strains in the *Caenorhabditis elegans* host model. *FEMS Microbiology Letters* **250**:97-104.
75. Cardona, S.T. and M.A. **Valvano**\*. 2005. An expression vector containing a rhamnose-inducible promoter provides tightly regulated gene expression in *Burkholderia cenocepacia*. *Plasmid* **54**:219-228.

74. McArthur, F., E. Andersson, S. Loutet, S. Mowbray, and M.A. **Valvano\***. 2005. Structure-function of the HldE phosphoheptose kinase that is required for the biosynthesis of ADP-glycero-manno-heptose. *Journal of Bacteriology* **187**:5292-5300.
73. Lefebvre, M.D., R. S. Flannagan, and M.A. **Valvano\***. 2005. A minor catalase-peroxidase from *B. cenocepacia* is required for normal aconitase activity. *Microbiology* **151**:1975-1985.
72. Vinés, E., C.L. Marolda, A. Balachandran, and M.A. **Valvano\***. 2005. Defective O antigen polymerization in *tolA* and *pal* mutants of *Escherichia coli* in response to extracytoplasmic stress. *Journal of Bacteriology* **187**:3359-3368.
71. Linton, D., N. Dorrell, P.G. Hitchen, S. Amber, A. V. Karlyshev, H.R. Morris, A. Dell, M.A. **Valvano**, M. Aebi, B. Wren. 2005. Functional analysis of the *Campylobacter jejuni* N-linked protein glycosylation pathway. *Molecular Microbiology* **55**:1695-1703.
70. Feldman, M.F., M. Wacker, M. Hernandez, P.G. Hitchen, C.L. Marolda, M. Kowarik, H.R. Morris, A. Dell, M.A. **Valvano**, and M. Aebi. 2005. Engineering N-linked protein glycosylation with diverse O antigen lipopolysaccharide structures in *Escherichia coli*. *Proceedings of the National Academy of Sciences USA* **102**:3016-3021. (**"Recommended" in the Faculty of 1000**)
69. Riley, J.G., M. Menggad, P. Montoya-Peleaz, W.A. Szarek, C.L. Marolda, M.A. **Valvano**, J.S. Schutzbach, and I. Brockhausen. 2005. The *wbbD* gene of *Escherichia coli* strain VW187 (O7:K1) encodes a UDP-Gal: GlcNAc $\alpha$ -pyrophosphate-R  $\beta$ 1,3 galactosyltransferase involved in the biosynthesis of O7-specific lipopolysaccharide. *Glycobiology* **15**:605-613.
68. Ortega, X., T.A. Hunt, S. Loutet, A.D. Vinion-Dubiel, A. Datta, B. Choudhury, J.B. Goldberg, R. Carlson, and M.A. **Valvano\***. 2005. Reconstitution of O-specific lipopolysaccharide expression in the *Burkholderia cenocepacia* strain J2135 that is associated with transmissible infections in patients with cystic fibrosis. *Journal of Bacteriology* **187**:1324-1333.
67. Montoya-Peleaz, P., J.G. Riley, W.A. Szarek, M.A. **Valvano**, J.S. Schutzbach, and I. Brockhausen. 2005 Identification of a UDP-Gal: GlcNAc-R galactosyltransferase activity in *Escherichia coli* VW187. *Bioorganic & Medicinal Chemistry Letters* **15**:1205-1211.
66. Marolda, C.L., J. Vicarioli, and M.A. **Valvano\***. 2004. Wzx proteins involved in biosynthesis of O antigen function in association with the first sugar of the O-specific lipopolysaccharide subunit *Microbiology* **150**:4095-4105.
65. Lamothe, J., S. Thyssen, and M.A. **Valvano\***. 2004. *Burkholderia cepacia* complex isolates survive intracellularly without replication within acidic vacuoles of *Acanthamoeba polyphaga*. *Cellular Microbiology* **12**:1127-1138. (**"Must Read" in the Faculty of 1000**).
64. Hunt, T.A., C. Kooi, P.A. Sokol, and M.A. **Valvano\***. 2004. Identification of *Burkholderia cenocepacia* genes required for bacterial survival in vivo. *Infection and Immunity* **72**:4010-4022. (**Listed among the "Top most requested" articles for Infection and Immunity, Jul-Sep 2004**).
63. Flannagan, R.S., M.A. **Valvano\***, and S.F. Koval\*. 2004. Downregulation of the *motA* gene delays the escape of the obligate predator *Bdellovibrio bacteriovorus* 109J from bdelloplasts of bacterial prey cells. *Microbiology* **150**: 649-656.
62. Bittner, M., S. Saldías, F. Altamirano, M.A. **Valvano**, and I. Contreras. 2004. RpoS and RpoN are involved in the growth-dependent regulation of *rfaH* transcription and O antigen expression in *Salmonella enterica* serovar Typhi. *Microbial Pathogenesis* **36**:19-24.
61. Chamailard, M., M. Hashimoto, Y. Horie, J. Masumoto, Q. Su, L. Saab, Y. Ogura, A. Kawasaki, K. Fukase, S. Kusumoto, M.A. **Valvano**, S. J. Foster, T.W. Mak, G. Nuñez, and N. Inohara. 2003. An essential role for NOD1 in selective recognition of bacterial peptidoglycan containing diaminopimelic acid. *Nature Immunology* **4**:702-707. (**Featured in News and Views, "Intracellular debugging", by Kobayashi, K.S., E. E. Eynon & R.A. Flavell. Nature Immunology, 4:652-654, 2003**) (**"Must Read" in Faculty of 1000**)
60. Sajjan, U., H. Xie, M.D. Lefebvre, M.A. **Valvano**, and J. Forstner. 2003. Identification and molecular analysis of cable pilus biosynthesis genes in *Burkholderia cepacia* *Microbiology* **149**: 961-971.
59. **Valvano**, M.A. 2003. Export of O-specific lipopolysaccharide. 2003. *Frontiers in Bioscience* **8**: S452-471.
58. Gray, J.E., P.R. Norton, R. Alnouno, C.L. Marolda, M.A. **Valvano**, and K. Griffiths. 2003. Biological efficacy of electroless-deposited silver on plasma activated polyurethane.

- Biomaterials 24:2759-2765.
57. Lefebvre, M.D. and M.A. **Valvano\***. 2002. Construction and evaluation of plasmid vectors optimized for constitutive and regulated gene expression in *Burkholderia cepacia* complex isolates. Applied and Environmental Microbiology 68: 5956-5964.
56. Bittner, M., S. Saldías, C. Estévez, M. Zaldívar, C.L. Marolda, M.A. **Valvano**, and I. Contreras. 2002. O-antigen expression in *Salmonella enterica* serovar Typhi is regulated by nitrogen availability through RpoN-mediated transcriptional control of the *rfaH* gene. Microbiology 148: 3789-3799.
55. **Valvano\***, M.A., P. Messner, and P. Kosma. 2002. Novel pathways for biosynthesis of nucleotide-activated *glycero-manno*-heptose precursors of bacterial glycoproteins and cell surface polysaccharides. Microbiology 148:1979-1989.
54. Fehlner-Gardiner, C.C. and M.A. **Valvano\***. 2002. Cloning and characterization of the *Burkholderia vietnamiensis norM* gene encoding a multi-drug efflux pump. FEMS Microbiology Letters 215: 279-283.
53. Fehlner-Gardiner, C.C., T.M.-H. Hopkins, and M.A. **Valvano\***. 2002. Identification of a general secretory pathway in a clinical isolate of *Burkholderia vietnamiensis* (formerly *B. cepacia* genomovar V) that is required for the secretion of hemolysin and phospholipase C activities. Microbial Pathogenesis 32:249-254.
52. Helenius, J., D.T.W. Ng, C.L. Marolda, P. Walter, M.A. **Valvano**, and M. Aebi. 2002. The translocation of lipid-linked oligosaccharides across the ER membrane requires the RFT1 protein. Nature 415:447-450. **(Featured in News and Views, "Protein sweetener", by Parodi, A. Nature, 415:382-3, 2002) ("Recommended" in Faculty of 1000)**
51. Kneidinger, B., C.L. Marolda, M. Graninger, A. Zamyatina, F. McArthur, P. Kosma, M.A. **Valvano\***, and P. Messner\*. 2002. Biosynthesis pathway of ADP-D-*glycero*-D-*manno*-heptose in *Escherichia coli*. Journal of Bacteriology 184:363-369.
50. Amer, A.O. and M.A. **Valvano\***. 2002. Conserved aspartic acids are essential for the enzymic activity of the WecA protein initiating the biosynthesis of O-specific lipopolysaccharide and enterobacterial common antigen in *Escherichia coli*. Microbiology 148:571-582.
49. Amer, A.O. and M.A. **Valvano\***. 2001. Conserved amino acid residues found in a predicted cytosolic domain of the lipopolysaccharide biosynthetic protein WecA are implicated in the recognition of UDP-*N*-acetylglucosamine Microbiology 147:3015-3025.
48. Lefebvre, M.D. and M.A. **Valvano\***. 2001. In vitro resistance of *Burkholderia cepacia* complex isolates to reactive oxygen species in relation to catalase and superoxide dismutase production. Microbiology 147:97-109.
47. Gaspar, J.A., J.A. Thomas, C.L. Marolda, and M.A. **Valvano\***. 2000. Surface expression of O-specific lipopolysaccharide in *Escherichia coli* requires the function of the TolA protein. Molecular Microbiology 38:262-275.
46. Amer, A.O., and M.A. **Valvano\***. 2000. The *N*-terminal region of the *Escherichia coli* WecA (Rfe) protein containing three predicted transmembrane helices is required for function but not for membrane insertion. Journal of Bacteriology 182:498-503
45. **Valvano\***, M.A., C.L. Marolda, M. Bittner, M. Glaskin-Clay, T.L. Simon, and J.D. Klena. 2000. The *rfaE* gene from *Escherichia coli* encodes a bifunctional protein involved in the biosynthesis of the lipopolysaccharide core precursor ADP-L-*glycero*-*manno*-heptose. Journal of Bacteriology 182: 488-497.
44. Feldman, M.F., C.L. Marolda, M.A. Monteiro, M.B. Perry, A.J. Parodi, and M.A. **Valvano\***. 1999. The activity of a putative polyisoprenol-linked sugar translocase (Wzx) involved in *Escherichia coli* O antigen assembly is independent of the chemical structure of the O repeat. Journal of Biological Chemistry 274:35129-35138.
43. Saini, L.S., S. Galsworthy, M.A. John, and M.A. **Valvano\***. 1999. Intracellular survival of *Burkholderia cepacia* complex isolates in the presence of macrophage cell activation. Microbiology 145:3465-3475.
42. Marolda, C.L., M. F. Feldman, and M.A. **Valvano\***. 1999. Genetic organization of the O7-specific lipopolysaccharide biosynthesis cluster of *Escherichia coli* VW187 (O7:K1). Microbiology 145:2485-2495.
41. Marolda, C.L. B. Hauröder, M.A. John, R. Michel, and M.A. **Valvano\***. 1999. Intracellular survival and saprophytic growth of isolates from the *Burkholderia cepacia* Complex in free-

- living amoebae. *Microbiology* **145**:1509-1517. (**Featured Hot off the Press, "The enemy within", by M. Jones. *Microbiology Today*, 26:136, 1999.**)
40. Dick, S., L. Marrone, A.M. Thariath, M.A. **Valvano**, and T. Viswanatha. 1998. Co-factor and substrate-binding domains in flavin-dependent *N*-hydroxylating enzymes. *Trends in Biochemical Science* **23**:414 (Letter).
39. Marolda, C.L. and M.A. **Valvano**\*. 1998. The promoter region of the O7-specific lipopolysaccharide gene cluster: Structural and functional characterization of an upstream untranslated mRNA sequence. *Journal of Bacteriology* **180**: 3070-3079.
38. Reid, G., L. Dafoe, B. Niven, and M.A. **Valvano**. 1997. *Escherichia coli* and *Enterococcus faecalis* whole cells and metabolic by products reduce bladder cell viability. *International Biodeterioration and Biodegradation* **40**:37-41.
37. Reeves, P.R., M. Hobbs, M.A. **Valvano**, M. Skurnik, C. Whitfield, D. Coplin, N. Kido, J. Klena, D. Maskell, C.R.H. Raetz, and P.D. Rick. 1996. Bacterial polysaccharide synthesis and gene nomenclature. *Trends in Microbiology* **4**:495-503.
36. Marolda, C.L. and M.A. **Valvano**\*. 1996. The GalF protein of *Escherichia coli* is not an UDP-glucose pyrophosphorylase but interacts with the GalU protein to possibly regulate cellular levels of UDP-glucose. *Molecular Microbiology* **22**:827-840.
35. Brooke, J.S. and M.A. **Valvano**\*. 1996. Molecular cloning of the *Haemophilus influenzae gmhA (lpcA)* gene encoding a phosphoheptose isomerase required for lipooligosaccharide biosynthesis. *Journal of Bacteriology* **178**: 3339-3341.
34. Brooke, J.S. and M.A. **Valvano**\*. 1996. Biosynthesis of inner core lipopolysaccharide in enteric bacteria. Identification and characterization of a conserved phosphoheptose isomerase. *Journal of Biological Chemistry* **271**:3608-3614.
33. Marolda, C.L., and M.A. **Valvano**\*. 1995. Genetic analysis of the dTDP-rhamnose biosynthesis region of the *Escherichia coli* VW187 (O7:K1) *rfb* cluster: Identification of functional homologs of *rfbB* and *rfbA* in the *rff* cluster and correct location of the *rffE* gene. *Journal of Bacteriology* **177**:5539-5546.
32. Alexander, D.C. and M.A. **Valvano**\*. 1994. Role of the *rfe* gene in the biosynthesis of the *Escherichia coli* O7-specific lipopolysaccharide and other O-specific polysaccharides containing *N*-acetylglucosamine. *Journal of Bacteriology* **176**:7079-7084.
31. Bouchet, A., M. Dho-Moulin, D. LeRoy, M.A. **Valvano**\*, and A. Andremont. 1994. Immunological variants of the aerobactin-cloacin DF13 outer membrane protein receptor lutA among enteric bacteria. *Infection and Immunity* **62**:3017-3021.
30. Yao, Z. and M.A. **Valvano**\*. 1994. Genetic analysis of the O-specific lipopolysaccharide biosynthesis region (*rfb*) of *Escherichia coli* K-12 W3110: identification of genes that confer group 6-specificity to *Shigella flexneri* serotypes Y and 4a. *Journal of Bacteriology* **176**:4133-4143.
29. Reid, G., L. Dafoe, G. Delaney, M. Lacerte, M.A. **Valvano**, and K.C. Hayes. 1994. Use of adhesion counts to help predict asymptomatic infection and ability of fluoroquinolones to penetrate bacterial biofilms on bladder cells of spinal cord injured patients. *Paraplegia* **32**:468-472.
28. Thariath, A., K.L. Fatum, M.A. **Valvano**, and T. Viswanatha. 1993. Physico-chemical characterization of a recombinant cytoplasmic form of lysine:*N*<sup>6</sup>-hydroxylase. *Biochimica et Biophysica Acta (Protein Structure and Molecular Enzymology)* **1203**:27-35.
27. Thariath, A., D. Socha, M.A. **Valvano**\*, and T. Viswanatha. 1993. Construction and biochemical characterization of recombinant cytoplasmic forms of the lucD protein (lysine *N*<sup>6</sup>-hydroxylase) encoded by the pColV-K30 aerobactin gene cluster. *Journal of Bacteriology* **175**:589-596.
26. Thomas, J.A. and M.A. **Valvano**\*. 1993. The role of *tol* genes in cloacin DF13 susceptibility of *Escherichia coli* K-12 strains expressing the cloacin DF13/ferric aerobactin receptor lutA. *Journal of Bacteriology* **175**:548-552.
25. Marolda, C.L. and M.A. **Valvano**\*. 1993. Identification, expression, and DNA sequence of the GDP-mannose biosynthesis genes encoded by the O7 LPS *rfb* region of strain VW187 (*Escherichia coli* O7:K1). *Journal of Bacteriology* **175**:148-158.
24. Yao, Z., H. Liu, and M.A. **Valvano**\*. 1992. Acetylation of *Shigella flexneri* 3a and 2a O-specific lipopolysaccharides occurs in *Escherichia coli* K-12 carrying recombinant *S. flexneri* 3a and 2a *rfb* genes. *Journal of Bacteriology* **174**:7500-7508.

23. Kappos, T., M.A. John, Z. Hussain, and M.A. **Valvano\***. 1992. Outer membrane protein profiles and multilocus enzyme electrophoresis for differentiation among clinical isolates of *Proteus mirabilis* and *Proteus vulgaris*. *Journal of Clinical Microbiology* 30:2632-2637.
22. **Valvano**, M.A. 1992. Diphenylamine increases cloacin DF13 sensitivity in avian strains of *Escherichia coli*. *Veterinary Microbiology* 32:149-161.
21. Thomas, J.A. and M.A. **Valvano\***. 1992. *tolQ* is required for cloacin DF13 susceptibility in *Escherichia coli* expressing the aerobactin/cloacin DF13 receptor *lutA*. *FEMS Microbiology Letters* 91:107-112.
20. **Valvano\***, M.A. and C.L. Marolda. 1991. Relatedness of O-specific lipopolysaccharide side chain genes from strains of *Shigella boydii* type 12 belonging to two clonal groups and from *Escherichia coli* O7:K1. *Infection and Immunity* 59:3917-3923.
19. Marolda, C.L., M.A. **Valvano**, and J.H. Crosa. 1991. Polymorphism in the aerobactin/cloacin DF13 receptor genes from an enteroinvasive strain of *Escherichia coli* and pColV-K30 is only associated with a decrease in cloacin susceptibility. *Infection and Immunity* 59:357-364.
18. Marolda, C.L., J. Welsh, L. Dafoe, and M.A. **Valvano\***. 1990. Genetic analysis of the O7-polysaccharide biosynthesis region from the *Escherichia coli* O7:K1 strain VW187. *Journal of Bacteriology* 172:3590-3599.
17. **Valvano\***, M.A. and J.H. Crosa. 1989. Molecular cloning and expression in *Escherichia coli* K-12 of chromosomal genes determining the O7-lipopolysaccharide antigen of a human invasive strain of *E. coli* O7:K1. *Infection and Immunity* 57:937-943.
16. **Valvano**, M.A. and J.H. Crosa. 1988. Molecular cloning, expression, and regulation in *Escherichia coli* K-12 of a chromosome-mediated aerobactin iron transport system from human invasive isolate of *E. coli* K-1. *Journal of Bacteriology* 170:5529-5538.
15. **Valvano**, M.A., A.I. Hartstein, V.H. Morthland, M.E. Dragoon, S.A. Potter, J. Reynolds, and J.H. Crosa. 1988. Plasmid DNA analysis of *Staphylococcus epidermidis* isolated from blood and colonization cultures in very low birth weight neonates. *Paediatric Infectious Diseases Journal* 7:116-120.
14. Marolda, C.L., M.A. **Valvano**, K.M. Lawlor, S.M. Payne, and J.H. Crosa. 1987. Flanking and internal regions of chromosomal genes mediating aerobactin iron uptake systems in enteroinvasive *Escherichia coli* and *Shigella flexneri*. *Journal of General Microbiology* 133:2269-2278.
13. Hartstein, A.I., M.A. **Valvano**, V.H. Morthland, P.C. Fuchs, S.A. Potter, and J.H. Crosa. 1987. Antimicrobial susceptibility and isolates of coagulase-negative staphylococci. *Journal of Clinical Microbiology* 25:589-593.
12. **Valvano**, M.A., R.P. Silver, and J.H. Crosa. 1986. Occurrence of chromosome- or plasmid-mediated aerobactin iron transport systems and hemolysin production among clonal groups of human invasive strains of *Escherichia coli* K1. *Infection and Immunity* 52:192-199.
11. **Valvano**, M.A. and J.H. Crosa. 1984. Aerobactin iron transport genes commonly encoded by certain ColV plasmids occur in the chromosome of a human invasive strain of *Escherichia coli* K1. *Infection and Immunity* 46:159-167.
10. **Valvano**, M.A. and S. Grinstein. 1983. Hemagglutination and yeast agglutination of *Escherichia coli* K1 and non-K1 strains isolated from extraintestinal infections in hospitalized children. *Bacteriología Clínica Argentina (Buenos Aires)* 2:5-127. (Article in Spanish).
9. **Valvano**, M.A. and S. Grinstein. 1983. *Escherichia coli* K-1 infections as a model for bacterial virulence. *Revista del Hospital de Niños (Buenos Aires)* 25:79-84. (Article in Spanish).
8. **Valvano**, M.A., and S. Grinstein. 1982. Prognostic value of the quantification of *Haemophilus influenzae* type b polysaccharide capsular antigens in cerebrospinal fluid. *Medicina (Buenos Aires)* 42:475-482. (Article in Spanish).
7. **Valvano**, M.A. and S. Grinstein. 1982. *Escherichia coli* K1 capsular polysaccharide antigens in cerebrospinal fluids from neonates without meningitis. *Medicina (Buenos Aires)* 42:67-73. (Article in Spanish).
6. Corral, R., M.A. **Valvano**, and S. Grinstein. 1981. Incorporation of dextran to agarose gels for countercurrent immunoelectrophoresis. *Revista de la Asociación Bioquímica Argentina (Buenos Aires)* 46:96-98. (Article in Spanish).
5. Grinstein, S., S. Tisminetzky, M.A. **Valvano**, T. Kahn, E. Lopez, E. Rubeglio, A. Schugurenski, and N. Bonesana. 1980. Meningococcal disease in Argentina. *Clinical and*

- epidemiological studies, rapid diagnosis, and first experiences with vaccine use. *Archivos Argentinos de Pediatría* (Buenos Aires) **78**:774-791. (Article in Spanish).
4. **Valvano**, M.A., S. Tisminetzky, E. Lopez, T. Kahn, E. Rubeglio, A. Schugurenski, R. Corral, N. Bonesana, and S. Grinstein. 1980. Meningococcal disease in pediatric patients. Prognostic and epidemiological value of counter current immunoelectrophoresis. *Orientación Médica* (Buenos Aires) **29**:145-147. (Article in Spanish).
  3. **Valvano**, M.A. and S. Grinstein. 1980. *Escherichia coli* K-antigens. General aspects and specific involvement of *E. coli* K-1 in neonatal infections. *Revista del Hospital de Niños* (Buenos Aires) **22**:45-47. (Article in Spanish).
  2. **Valvano**, M.A. J.A. Bodino, and S. Grinstein. 1980. Measurement of type b capsular antigen from *Haemophilus influenzae* in cerebrospinal fluid from infants with meningitis. *Revista del Hospital de Niños* (Buenos Aires) **22**:215-217. (Article in Spanish).
  1. **Valvano**, M.A., A. Bercovich, A. Paolini, and S. Grinstein. 1979. Meningitis due to group B *Neisseria meningitidis*. First observations in Argentina. *Revista del Hospital de Niños* (Buenos Aires) **21**:81-84. (Article in Spanish).

## II. Review articles and book chapters

37. **Valvano**, M.A. 2022. Remodelling of the Gram-negative bacterial Kdo<sub>2</sub>-lipid A and its functional implications. *Microbiology* **168**:001159; DOI 10.1099/mic.0.001159.
36. **Turton**, K., R.J. Ingram, and M.A. **Valvano**\*. 2021. Macrophage dysfunction in cystic fibrosis: nature or nurture? *Journal of Leukocyte Biology*, **109**:573-582; doi.org/10.1002/JLB.4RU0620-245R.
35. **Valvano**, M.A. 2020. Glycan ligation reactions in the periplasmic space. *In*: A. Pilar Rauter, B.E. Christensen, L. Somsák, P. Kosma & R. Adamo (eds.), *Recent Trends in Carbohydrate Chemistry*, Vol 2, Elsevier, 37-49; doi.org/10.1016/B978-0-12-820954-7.00002-5.
34. **Wang**, G., P. **Zarodkiewicz**, and M.A. **Valvano**\*. 2020. Current Advances in *Burkholderia* Vaccines Development. *Cells*, **9**, 2671; doi:10.3390/cells9122671
33. **Monjaras-Feria**, J., and M.A. **Valvano**\*. 2020. An overview of anti-eukaryotic T6SS effectors. *Frontiers in Cellular and Infection Microbiology*, **10**:617; doi.org/10.3389/fcimb.2020.584751.
32. **Tavares-Carreón**, F., X. **Ruan**, A. **Ford**, and M.A. **Valvano**\*. 2019. Sulfhydryl Labeling as a Tool to Investigate the Topology of Membrane Proteins Involved in Lipopolysaccharide Biosynthesis. *In*: I. Brockhausen (ed.), *Bacterial Polysaccharides: Methods and Protocols*, *Methods in Molecular Biology*, vol. 1954, Springer, 203-213. doi.org/10.1007/978-1-4939-9154-9\_16.
31. **Gula**, G, A. **Dorotkiewicz-Jach**, K. **Korzekwa**, M.A. **Valvano**, and Z. **Drulis-Kawa**. 2019. Complex signaling networks controlling dynamic molecular changes in *Pseudomonas aeruginosa* biofilm. *Current Medicinal Chemistry* **26**: 1979-1993. doi: 10.2174/0929867325666180912110151.
30. **Knirel**, Y.A., and M.A. **Valvano**. 2018. Bacterial polysaccharides structure and biosynthesis. *In*: C.K. Roberts & A. Watts (eds.), *European Biophysical Societies' Association (EBSA)*, *Encyclopedia of Biophysics*; Springer Verlag. https://doi.org/10.1007/978-3-642-35943-9\_91-1.
29. **Olszak**, T., A. **Latka**, B. **Roszniowski**, M.A. **Valvano**, and Z. **Drulis-Kawa** Z. 2017. Phage life cycles behind bacterial biodiversity. *Current Medicinal Chemistry* **24**: 3987-4001. doi:10.2174/0929867324666170413100136.
28. **Maldonado**, R.F., I. **Sa-Correia**, and M.A. **Valvano**\*. 2016. Lipopolysaccharide modification in Gram-negative bacteria during chronic infection. *FEMS Microbiology Reviews* **40**:480-493.
27. **Valvano**, M.A. 2015. Intracellular survival of *Burkholderia cepacia* complex in phagocytic cells. *Canadian Journal of Microbiology* **61**:607-615.
26. **Valvano**, M.A. 2015. Genetics and biosynthesis of lipopolysaccharide. *In*: Y-W. Tang, M. Sussman, D. Liu, I. Poxton, and J. Schwartzman (eds.), *Molecular Medical Microbiology*, Academic Press, Elsevier, Vol. 1: 55-91.
25. **El-Halfawy**, O.M., and M.A. **Valvano**\*. 2015. Antimicrobial heteroresistance: An emerging field in need of clarity. *Clinical Microbiology Reviews* **28**:191-207.
24. **Aubert**, D.F, M.A. **Hamad**, and M.A. **Valvano**\*. 2014. A markerless deletion method for genetic manipulation of *Burkholderia cenocepacia* and other multi antibiotic resistant Gram-



- negative bacteria. *In*: A. Vergunst and D.O. Callaghan (eds.), *Host-bacteria interactions: Methods and Protocols*, a series from *Methods in Molecular Biology* (series editor J. M. Walker), Vol. 1197: 311-327; Humana Press.
23. **Valvano**, M.A., R. Rosales-Reyes, C.L. Schmerk, and H. Ostapska. 2014. Molecular mechanisms of virulence of *Burkholderia cepacia* complex bacteria. *In*: T. Coeyne and E. Mahenthalingam (eds.), *Burkholderia: From Genomes to Function*. Caister Academic Press, Norfolk, UK. Chapter 7, pp. 149-160.
22. Ruan, X., and M.A. **Valvano**\*. 2013. *In vitro* O-antigen ligase assay. *In*: I. Brockhausen (ed.), *Glycosyltransferases*, a series from *Methods in Molecular Biology* (series editor J. M. Walker), Vol. 1022: 185-197; Humana Press.
21. Patel, K.B., and M.A. **Valvano**\*. 2013. *In vitro* UDP-sugar:undecaprenyl-phosphate sugar-1-phosphate transferase assay and product detection by thin layer chromatography. *In*: I. Brockhausen (ed.), *Glycosyltransferases*, a series from *Methods in Molecular Biology* (series editor J. M. Walker), Vol. 1022: 173-183; Humana Press.
20. Knirel, Y.A., and M.A. **Valvano**. 2013. Chapter 114. Bacterial polysaccharides structure and biosynthesis. *In*: G.C.K. Roberts (ed.), *Encyclopedia of Biophysics*; Springer Verlag.
19. Kalynych, S., M.A. **Valvano**, and M. Cygler. 2012. Polysaccharide co-polymerases: the enigmatic conductors of the O-antigen assembly orchestra. *Protein Engineering Design & Selection* **25**: 797-802.
18. El-Halfawy, O.M., and M.A. **Valvano**\*. 2012. Non-genetic mechanisms communicating antibiotic resistance: Rethinking strategies for antimicrobial drug design. *Expert Opinion on Drug Discovery* **7**:923-933.
17. **Valvano**, M.A., and A. Hanuszkiewicz. 2012. Proteins involved in the membrane translocation of O-antigen lipopolysaccharide. *In*: M Andrade (ed.), *An overview on the chemistry and biochemistry of carbohydrates*. Mini-Reviews in Carbohydrate Chemistry. Bentham Science Publishers Ltd., Bussum, The Netherlands, Vol 9:261-269
16. Loutet, S.A., and M.A. **Valvano**\*. 2011. Extreme antimicrobial peptide and polymyxin B resistance in the genus *Burkholderia*. *Frontiers in Cellular and Infection Microbiology* **2**:159.
15. **Valvano**, M.A. 2011. Common themes in glycoconjugate assembly using the biogenesis of O-antigen lipopolysaccharide as a model system. *Biochemistry (Moscow)* **76**:729-735.
14. **Valvano**, M.A., S.E. Furlong, and K.B. Patel. 2011. Genetics, biosynthesis and assembly of O antigen. *In*: Y. Knirel and M.A. **Valvano** (eds.), *Bacterial lipopolysaccharides: Structure, chemical synthesis, biogenesis and interaction with host cells*. Springer Verlag Publishing Inc., Wein, pp. 275-310.
13. Loutet, S.A., and M.A. **Valvano**\*. 2010. Minireview. A decade of *Burkholderia cenocepacia* virulence determinant research. *Infection and Immunity* **78**: 4088-4100.
12. **Valvano**\*, M.A. 2010. O antigen biosynthesis. *In*: L.N. Mander and H-W. Liu (eds.), *Comprehensive Natural Products Chemistry II*. Vol. 6. Carbohydrates, nucleosides & nucleic acids. Elsevier Ltd., Oxford.
11. **Valvano**\*, M.A. 2007. MicroCommentary: Undecaprenyl phosphate recycling comes out of age. *Molecular Microbiology* **67**:232-235.
10. **Valvano**\*, M.A., K.E. Maloney, J. Lamothe, and S. Saldías, 2007. Intracellular survival of *Burkholderia cepacia* complex isolates. *In*: T. Coeyne, P. Vandamme (eds.), *Burkholderia: Molecular Biology and Genomics*; Horizon Scientific Press.
9. Marolda, C.L., P. Lahiry, E. Vinés, S. Saldías, and M.A. **Valvano**\*. 2006. Micromethods for the characterization of lipid A-core and O antigen lipopolysaccharide. *In*: "Glycobiology Protocols", a series from *Methods in Molecular Biology* (series editor J. M. Walker), vol. 347 (ed. I. Brockhausen); pp. 237-252, Humana Press Inc.
8. **Valvano**\*, M.A., K.E. Keith, and S.T. Cardona. 2005. Survival and persistence of opportunistic *Burkholderia* species in host cells. *Current Opinion in Microbiology* **8**:99-105.
7. Heinrichs, D.E., M.A. **Valvano**, and C. Whitfield. 1999. Biochemistry and Genetics of lipopolysaccharide core, pp. 305-330. *In*: H. Brade, D.C. Morrison, S.N. Vogel, S. Opal (eds.), *Endotoxin in Health and Disease*. Marcel Dekker, Inc., New York.
6. **Valvano**, M.A. 1999. Biosynthesis and genetics of ADP-heptose. *Journal of Endotoxin Research* **5**:90-95.
5. Reid, G., H.J.L. Brooks, H. Bialkowska-Hobrzanska, and M.A. **Valvano**. 1996. Bacteriuria in spinal cord injured patients. *In*: S.G. Mulholland (ed.), *Antibiotic therapy in urology*, pp187-

199. Lippincott-Raven Publishers, Philadelphia.
4. Thariath, A., M.A. **Valvano**, and T. Viswanatha. 1994. Biochemical and genetic studies on lysine:N6-hydroxylase involved in aerobactin biosynthesis. *In*: R.J. Bergeron and G.M. Brittenham (eds.), The development of iron chelators for clinical use. pp. 169-186. CRC Press. (invited review).
3. Whitfield, C. and M.A. **Valvano**. 1993. Biosynthesis and expression of cell-surface polysaccharides in gram-negative bacteria. *In*: A.H. Rose (ed.), Advances in Microbial Physiology 35:135-246, Academic Press Ltd., London, UK (invited review).
2. **Valvano**, M. A. 1992. Pathogenicity and molecular genetics of O-side chain lipopolysaccharides of *Escherichia coli*. Canadian Journal of Microbiology 38:711-719.
1. Crosa, J.H., L.A. Actis, Y. Mitoma, J. Perez-Casal, M.E. Tolmasky, and M.A. **Valvano**. 1985. Plasmid-mediated iron sequestering systems in pathogenic strains of *Vibrio anguillarum* and *Escherichia coli*. *In*: D.R. Helinski, S.N. Cohen, D.B. Clewell, D.A. Jackson, and A. Hollaender (Eds.), Plasmid in Bacteria. Plenum Press, NY, pp. 759.

### III. Edited Books

1. Knirel, Y.A. and M.A. **Valvano** (eds.). 2011. Bacterial lipopolysaccharides: Structure, chemical synthesis, biogenesis and interaction with host cells. 411 pages. Springer Verlag, Wien. ISBN-978-3-7091-0732-4. **(24,396 chapter downloads by 2018)**.

### IV. Non-peer reviewed articles

4. El-Halfawy, O.M, and M.A. **Valvano**\*. 2013. EDITORIAL: Communication is key: do bacteria use a universal 'language' to spread resistance? Future Microbiology 8:1357-1359.
3. El-Halfawy, O.M., and M.A. **Valvano**\*. 2011. EDITORIAL: Heteroresistance of opportunistic bacteria to antimicrobial peptides: A new challenge to antimicrobial therapy. Therapy 8:591-595.
2. **Valvano**, M.A. 2006. EDITORIAL: Infections by *Burkholderia* species: The psycho-dramatic life of an opportunistic pathogen. Future Microbiology 1:145-149.
1. Ortega, X., and M.A. **Valvano**. 2005. Transcriptional organization of the O antigen biosynthesis cluster in the GC-rich bacterium *Burkholderia cenocepacia*. Biochemica No. 3:14-15.

### V. Abstracts

Trainees in my laboratory regularly present work in progress at local, national, and international meetings and conferences. I do not keep a record of the abstracts, but typically 6 to 8 abstracts are submitted from my laboratory to conferences and scientific meetings per year.

### VI. Patents

**Valvano**, M.A, and G. Wang. 2021. Diagnosis and treatment of *Burkholderia* infections. PCT/EP2021/073608, International application; 26/08/2021; Priority # P133558GB00, 26/08/2020.

Mohamed, Y.F, and M.A. **Valvano**. A general protein glycosylation system in *Burkholderia* applicable to vaccine or diagnostic development (under negotiation with Queen's University Research & Enterprise). 2016.

Flannagan, R.S., and M.A. **Valvano**. A system for creating unmarked gene deletions in *Burkholderia cenocepacia*. Technology ID: 08-021; Provisional US patent application, October 1, 2007.

Hunt, T.A., and M.A. **Valvano**. *Burkholderia cenocepacia* Genes Required for Bacterial Survival; U.S. PTO60/602764, August 19, 2004.