

CURRICULUM VITAE

Dr. Dawn M. E. Bowdish

h-index = 29 (Google Scholar)

Business Address:

Department of Pathology & Molecular Medicine
Associate Member of Chemistry & Chemical Biology
McMaster Immunology Research Centre
MG DeGrootte Institute for Infectious Disease Research
McMaster University, MDCL 4020
1200 Main Street West
Hamilton ON L8N 3Z5
Tel: (+1) 905-525-9140, ext 22313
Fax: (+1) 905-522-6750
E-mail: bowdish@mcmaster.ca

Educational Background:

2005 – 2008



Canadian Institute of Health Research Post-doctoral Fellow

University of Oxford, Department of Pathology, Oxford U.K
Laboratory of Prof. Siamon Gordon

“Genetic and Functional Analysis of the scavenger receptor, MARCO”

2000 – 2005



PhD. (Microbiology & Immunology)

University of British Columbia, Dept. of Microbiology & Immunology
Vancouver, Canada

Laboratory of Prof. R.E.W. Hancock

“Interactions of the human host defence peptide, LL-37 and the innate immune response”

1995 – 1999



BSc. Honours (Microbiology)

University of Guelph, Dept. of Microbiology, Guelph, Canada

Undergraduate project and summer studentship in the lab of Prof. J.S. Lam and supervised by Dr. Lori Burrows

“Genetics of the O-antigen of the O5 serogroup of *Pseudomonas aeruginosa*”

Honours:

2016-2017	Breathe New Life Award – Top rated grant in the Ontario Thoracic Society/Ontario Lung Association’s Grant in Aid program
2014-2019	Canada Research Chair in Aging & Immunity, Tier 2
2014	Best Teacher Award from the Department of Pathology & Molecular Medicine
2013	Nomination for the President’s Award for Excellence in Graduate Student Supervision
2012	Ontario Lung Association-Pfizer Canada Research Award
2011	G. Jeanette Thorbecke New Investigator Award, Society of Leukocyte Biology
2010	ASPIRE, Pfizer Young Investigator Award for study of post-influenza pneumonia in the elderly
2006 – 2008	JMH Junior Research Fellowship awarded by Linacre College at the University of Oxford
2006	Cangene Gold Award, Awarded by the Canadian Society of Microbiology for the highest ranked PhD thesis in Microbiology
2005 – 2008	Post-doctoral Fellowship awarded by the Canadian Institutes of Health Research
2003 – 2005	Canada Graduate Scholarship awarded by the Canadian Institute of Health Research
February, 2005	Honorarium for having abstract chosen to present at the Innate Immunity in Human Disease Research Day: BC Research Institute for Children’s & Women’s Health
November, 2004	Travel Allowance awarded by the International Endotoxin Society 8th Biennial Conference of the International Endotoxin Society, Kyoto, Japan

Current Status at McMaster University:

July 1, 2014 – present **Associate Professor, Tenure-Track**
Department of Pathology & Molecular Medicine
MG DeGrootte Institute for Infectious Disease Research
McMaster Research Immunology Centre
“The role of macrophage receptors in innate immunity and host defence”

February 1, 2009 – June 30, 2014 **Assistant Professor, Tenure-Track**
Department of Pathology & Molecular Medicine

MG DeGroot Institute for Infectious Disease Research
McMaster Research Immunology Centre
“The role of macrophage receptors in innate immunity and host defence”

Professional Organizations:

Canadian Society of Microbiology
Canadian Thoracic Society
Society for Leukocyte Biology
Canadian Society for Immunology
American Society for Immunology

Employment History:

Academic

July 2014- present: Associate Professor, Department of Pathology & Molecular Medicine, McMaster Immunology Research Centre, McMaster University, Hamilton, ON.

February 1, 2009- June 30, 2014: Assistant Professor, Department of Pathology & Molecular Medicine, McMaster Immunology Research Centre, McMaster University, Hamilton, ON.

Scholarly & Professional Activities:

Professional development

Attended:

The Faculty of Health Sciences Leadership Management course 2016-2017
The Emotionally Intelligent Manager: Ontario Hospital Association. November 25-27, 2015.

Completed:

“R Basics – R programming Language Introduction” online course. Udemy July, 2016

Journal Referee (ad hoc)

- PLoS Pathogens
- Journal of Leukocyte Biology
- Molecular Therapeutics
- Mucosal Immunology
- Frontiers in Immunology
- American Journal of Respiratory Cell and Molecular Biology
- American Journal of Respiratory and Critical Care Medicine
- Journal of Immunology
- FASEB
- European Journal of Immunology
- EMBO Journal
- PLoS ONE
- Journal of Innate Immunity
- Journal of Royal Society Interface
- Journal of Inflammation
- Infection & Immunity
- American Journal of Physiology
- Molecular Autism

Guest Editor

- Guest editor for special issue entitled “Bioinformatics for Immunologists” of *Frontiers in Immunology* (2014-2015)

External Grant Reviews

- Banting Research Foundation (2016-ongoing)
- Fondazione Cariplo, Italy (2016)
- ANR (Agence Nationale du Recherche), France (2012, 2016)
- Irish Science Foundation (Ireland) (2016)
- Biotechnology & Biological Sciences Research Council (UK) (2014, 2015)
- NSERC (Discovery Grant Competition, Jan 2011, 2013, 2016, 2017)
- CIHR (Biomedical Sciences, Institute of Aging) external reviewer (2014)
- The Lung Association (Basic Science panel, March 2014)
- Israeli Science Foundation (2014)
- CIHR Microbiology & Infectious Disease Panel (Operating Grant, May 2013)
- Multiple Sclerosis Society of Canada (Operating Grant competition, Jan 2011 & 2013)
- Asthma UK (2012)

Contributions to Scientific Societies

Board of Directors, Ontario Lung Association (June 2015-2019)

Major initiatives include;

- i) participating in the “Breathing as One” campaign, designed to increase research funding for lung health by 10-12 million in the next 5 years. (2014-present)
- ii) Advocating for Bill 41: Lung Health Act, a private members bill to create a lung health action plan for Ontario (2014-present).

Vice-chair of the 2016 Gordon conference on Acute Respiratory Infections (Galveston, Texas)

co-Chair of the 2018 Gordon conference on Acute Respiratory Infections (Ventura, California)

Scientific Advisory Board, “Exploiting plant-made vaccines to protect the elderly against respiratory viruses” Génome Québec / le Ministère de l'Économie, de la Science et de l'Innovation (2017-2019)

Administrative Responsibilities:

Committee Membership

- University* CFI Infrastructure internal review committee (2016)
- Animal Research Ethics Board member (2014-ongoing)
- Focus Group on Identification and Support of Emerging Leaders at the Assistant and Associate Professor Levels (October 2014)
- Graduate Council Scholarships Member: Rank scholarships for OGS, NSERC, CIHR (Oct 2010 – Aug 2013)
- Department* Tenure & Promotion Committee – Pathology & Molecular Medicine, 2017-ongoing.

MIRC communications committee 2013-ongoing
-responsible for website design, content and social media activities

Institute for Infectious Disease Research Communications Committee Aug 2013-Aug 2014

Institute for Infectious Disease Research Opening Symposium Organizing Committee – Aug-Oct 2010

Organizer of Trainee Poster Presentations and Awards: Michael G. DeGroot Institute for Infectious Disease Research Opening Symposium (October 24th, 2009)

Faculty

Executive Committee of the M. G. DeGroot Institute for Infectious Disease Research (July 2013-ongoing)

Infection & Immunity Area Co-ordinator for the Medical Sciences Graduate Program (2012-2013).

FHS Research Plenary Award Selection Committee: Selected graduate winners of awards presented at the Inaugural Faculty of Health Sciences Research Plenary (May 14th, 2010)

Judge – Poster session: 1st Annual FHS Postdoctoral Research Day (June, 3rd, 2010)

Judge – Student Award Symposium: Canadian Society of Microbiology 2010 Annual Conference (June 2010)

Areas of Interest:

Research: immunosenescence, macrophage biology, macrophage receptor expression, scavenger receptor and phagocytic receptor function and signalling, aging and immunity, innate immunity & host defence, bacterial colonization and infections (e.g. *Streptococcus pneumoniae*), animal models of pneumonia and post-influenza pneumonia, microbiome of the upper respiratory tract, pathogens & commensals of the upper respiratory tract

Teaching: immunology, innate immunity, host defence, immunosenescence, host-pathogen interactions

Courses Taught:

Course Title

Undergraduate

HTH SCI 4I13	Advanced Immunology (2018-ongoing, X lectures/semester)
HTH SCI 4I13	Advanced Immunology (Jan 2011-2017) – Course co-ordinator & lecturer
HTH SCI 3I03	Immunology (Sept 2015-ongoing, 1 lecture/semester)
HTH SCI 1DT3	Introduction to Immunology (Jan 2014-ongoing, 2 lectures/semester)
BDC3A03	Road to Biomedical Discovery (November 2016-ongoing)
Biol4C09	Biology Senior Thesis (Sept 2015-Apr 2016)
SCIENCE 3EX6	Applied Placement Course (Sept 2014-Apr 2015)
HTH SCI 4DM3	Demystifying Medicine (Sept 2013-Dec 2013)
ISCI 4A12	Independent Study (Sept 2013-Apr 2014, 2 students)
Life Sci 3C09	Independent Study (Sept 2013-Apr 2014)

SCIENCE 3RP3	Research Practicum (Jan 2012-Apr 2012)
HTH SCI 4A09	Independent Study (Sept 2012-Apr 2013)
Biochem 3A03	Independent Study, (Sept- Dec 2012)
HTH SCI 4A09	Independent Study, (Sept 2010-Apr 2011)
Biochem 4B03	Independent Study, (Sept 2010-Apr 2011)
Biochem 3A03	Independent Study, (May- Jun 2010)
Biochem 4B06	Independent Study, (Sept 2009-Apr 2010)
HTH SCI 3H03	Independent Study, (Sept 2009-Apr 2010)
SCIENCE 4C09	Independent Study, (Sept 2009-Apr 2010)

Graduate Courses: MS 799 Independent Study in Medical Sciences (2010 & 2012)

Graduate Lectures: MS715 Advanced Immunobiology (1 lecture per term 2010-ongoing)
BBS 771 Immunometabolism (1 lecture per term 2016-ongoing)

Supervisorships:

(For a complete list of awards and distinctions received by trainees see www.bowdish.ca/people)

MSc (in progress)

Helen Luu 2016-ongoing “Structured surfaces alter macrophage function”
(co-supervised with Dr. Jose Moran-Mirabal).

Grace Teskey 2016-ongoing “Peripheral immunophenotype is changed during autism spectrum disorder”

MSc (completed)

Aveshni Naidoo 2013-2016 “Age-associated inflammation impairs the anti-bacterial activity of macrophages.”

Netusha 2014-2016 “Age related changes in the microbiome of the URT predispose the elderly to *S. pneumoniae* infection”
Thevaranjan

Nick Yap 2014 - 2016 “Phylogenetic approaches to characterize the evolution of pattern recognition receptors”
(co-supervised with Brian Golding)

Fiona Whelan 2010 - 2012 “Evolution of the class A scavenger receptors”.

Zhongyuan Tu 2010 - 2012 “Discovery of novel signalling motifs in the cytoplasmic domain of MARCO”.

Mariliis Kroos 07/2007- 09/2008 Co-supervised with Prof. Siamon Gordon, University of Oxford

“The role of the cytoplasmic domain of MARCO in adhesion and motility”.

PhD (in progress)

Jessica Breznik 2016-ongoing “Immunological changes during pregnancy are compounded by a high fat diet”

Pat Schenck 2014-ongoing “The composition of the airway microbiota influences infection risk”
(co-supervised with Mike Surette)

Sara Makaremi 2014-ongoing “Structural requirements for macrophage adhesion”
(co-supervised with Jose Miran-Mirabel)

Kyle Novakowski 2012- ongoing “The importance of the scavenger receptor cysteine rich domain of MARCO in bacterial recognition & signalling”.

Dessi Loukov	2013-ongoing	“Age-associated inflammation drives macrophage dysfunction and susceptibility to pneumococcal infection.”
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PhD (completed)

Fan Fei	2013-2015	“Metabolomic analysis of the inflammatory response of macrophages from young and old mice.”
Mike Dorrington	2010 – 2015	“The role of MARCO in control of pneumococcal colonization of the nasopharynx”.
Alicja Puchta	2010- 2014	“Age associated macrophage dysfunction contributes to susceptibility to pneumonia”.

Post-doctoral (in progress)

Dr. Christian Schulz (DFG fellowship recipient)	2016-2018	“Host-microbiome interactions influence colonization and infection with <i>S. pneumoniae</i> ”.
Dr. Janine Strehmel	2016-2018	“Mining the URT microbiota for novel antimicrobials”

Post-doctoral (completed)

Dr. Chris Verschoor	2010- 2016	“Age-associated myeloid cell immunosenescence contributes to susceptibility of the elderly to <i>Streptococcus pneumoniae</i> ”.
Dr. Preethi Jayanth	2011 – 2013	Co-supervised with Dr. Mike Surette “Mechanisms of host immune evasion by the <i>Streptococcus milleri</i> group”
Dr. Peter Pelka	2011 – 2012	“Host immune responses to the microbiota of the upper respiratory tract”.

Undergraduate students

Zhongyuan Tu	05/2009-08/2010	Biochemistry -4 th year thesis
Alex Jiang	06/2009-04/2012	BHSc- 3 rd & 4 th year thesis
Harikesh Wong 0	7/2009-04/2010	Biochemistry- 4 th year thesis
Sarah Chauvin	06/2010-04/2011	Biochemistry- 3 rd year project & 4 th year thesis
Jaskiran Nanda	05/2011-08/2011	Biology -Summer research student
Michael Danesi	05/2011-08/2011	Biology & Psychology –Summer Research
Charles Yin	05/2012-08/2012	iSci- 3 rd year thesis student
	09/2013-04/2013	4 th year thesis student (ISCI 4A12)
Keith Lee	05/2012-04/2013	BHSc- 4 th year thesis student
Peter Mu	08/2011-04/2013	Undergraduate Lab Manager
Samathy Balachandran	01/2013-04/2013	Pharmacology – 4 th year thesis student
Netusha Thevaranjan	05/2013-04/2014	Undergraduate Technician, Summer student, Biology- 4 th year thesis student (Life Sci 4C09)
James Han	05/2013-04/2014	iSci- 4 th year thesis student (ISCI 4A12)
Prashant Kalvapalle	05/2013-08/2013	MITACS summer studentship recipient
Jessica Wallace	09/2013-04/2014	Biology 4 th year thesis student
Robert Valencia	09/2013-04/2014	Lab Co-ordinator
Dessi Loukov	01/2014-04/2014	4 th year thesis student
Philip Lauman	01/2014-04/2014	iSci-3 rd year thesis student
Melissa Ling	01/2014-04/2014	iSci-3 rd year thesis student
	09/2014-04/2015	iSci- 4 th year thesis student
Ben Su	09/2014-04/2015	Academic advisor for SCIENCE 3EX6 Applied Placement

Alan Zhou	01/2015-04/2015	iSci-3 rd year thesis student
Mohamad Malik	01/2015-08/2015	Biotechnology co-op student
Vikash Chawla	09/2015-04/2016	Biology Senior Thesis student (Biol 4C09)
Alejandra Lagos	09/2015-04/2016	Biology Senior Thesis student (Biol 4C09)
Thilini Delungahawatta	09/2015-04/2016	Biology Senior Thesis student (Biol 4C09, co-supervised with David Rollo)
Justin Boyle	09/2015-04/2016	Chemistry Senior Thesis student (co-supervised with Dr. José Moran-Mirabal)
Jenny Sun	01/2016-08/2016	Biology & Pharmacology co-op student
Mohammad Malik	05/2016-09/2016	Biotechnology co-op student
Melodie Na-Yoon Kim	05/2016-09/2016	3 rd year BHSc student HTH SCI 3H03
Joseph Chong	09/2016-04/2017	4 th year Biochemistry student
Jason Fan	09/2015-04/2016	3 rd year BHSc HTHSCI3H03
	09/2016-04/2017	4 th year BHSc
Sureka Pavalagantharajah	09/2016-04/2017	4 th year BHSc
Dhanyasri Maddiboina	09/2016-04/2017	iSci- 4 th year thesis student

Supervisory Committees (in progress)

Caressa Tai, MSc (Coombes, Biochemistry)	2017-ongoing
Jeff Lam, MSc (Kaushic, Pathology)	2017-ongoing
Emily Paolucci, MSc (Heisz, Kinesiology)	2016-ongoing
Shawna Thompson, PhD (Foster, Psychiatry)	2016-ongoing
Elizabeth Chau, MSc (Coombes, Biochemistry)	2016-ongoing
Josh McGrath, MSc (Stampfli, Pathology)	2016-ongoing
Alex Qian, MSc (Trigatti, Biochemistry)	2016-ongoing
Nadia Iftekhharu, MSc (Miller, Biochemistry)	2016-ongoing
Aric Huang, MSc (Werstuck, Biochemistry)	2016-ongoing
Doris Li, MSc (Kaushic, Pathology)	2016-ongoing
Alexander Qian, MSc (Trigatti, Biochemistry)	2016-ongoing
Katherine Kennedy, PhD (Sloboda, Biochemistry)	2015-ongoing
Jenna Dowhaniuk, MSc (Ratcliffe, Medicine)	2015-ongoing
Trevor Lau, PhD (Schertzer, Biochemistry)	2015-ongoing
Ken Mwawasi, PhD (Bramson, Pathology)	2015-ongoing
Vi Dang, PhD (Werstuck, Biochemistry)	2014-ongoing
Sohail Mahmood, MSc (Ask, Pathology)	2014-ongoing
Brian Tuinema, PhD (Coombes, Biochemistry)	2014-ongoing
Bushra Ilyas, PhD (Coombes, Biochemistry)	2014-ongoing
David Hare, PhD (Mossman, Pathology)	2013-ongoing

Supervisory Committees (completed)

Sara Dizzel, MSc (Kaushic, Pathology)	2015 - 2017
Phil Staibano, MSc (Nazi, Medicine)	2015 - 2016
Michelle Mendoça, PhD (Surette, Biochemistry)	2011 - 2016
Stacey Muise, MSc (Boreham, Radiation Medicine)	2015 - 2016
Jessica Wallace, MSc (Sloboda, Biochemistry)	2015 - 2016
Jane McBride, MSc (Schertzer, Biochemistry)	2015 - 2016
Ashley Beaulieu, MSc (Stampfli, Pathology)	2015 - 2016
Sarah Karampatos, MSc (Maly, Rehabilitation Science)	2015 - 2016

Pamela Shen, PhD (Stampfli, Pathology)	2011 - 2016
Karissa Giraldi, MSc (Surette, Biochemistry)	2013 - 2015
Tatianna Wong, MSc (Gilberger, Biochemistry)	2013 - 2015
Ken Mwasi, MSc (Mahoney, Pathology)	2013 - 2014
Vi Dang, MSc (McCarry/Britz-McKibbin), Chemistry)	2013 - 2014
Alexandra Ruyter, MSc (Mahoney, Pathology)	2011 - 2013
Julie Kaiser, MSc (Surette, Biochemistry)	2011 - 2013
Tamara Krneta, MSc(As hkar, Pathology)	2010 - 2012
Elena Pretus, MSc (Stampfli, Pathology)	2010 - 2012
Lauren Waller, MSc (Coombes, Biochemistry)	2010 - 2012
Elspeth Smith, MSc (Lichty, Pathology)	2010 - 2012
Josip Marcinko, MSc (Jordana, Pathology)	2009 - 2011
Devanghi Mehta , MSc (Mossman, Pathology)	2009 - 2011

External Examiner - Comprehensive Examiner

Kyle Flannigan	March 3, 2014	McMaster University
Varun Anipindi	May 7, 2012	McMaster University
Bethany Heinrick	July 15, 2010	McMaster University
Dannie Bernard	June 5, 2009	McMaster University

Comprehensive Exam advisor

Ken Mwawasi	June 30, 2016	McMaster University
Pamela Shen	May 8, 2013	McMaster University

External Examiner- PhD Transfer

Daphne Lamarchée(Biochemistry)	Jun 26, 2015	McMaster University
Uyen Nguyen (Biochemistry)	Apr 29, 2013	McMaster University
Brian Tuinema (Biochemistry)	Feb 7, 2013	McMaster University
Leticia Gonzalez Jara (Biochemistry)	June 21, 2012	McMaster University
Carly Horvath (Pathology)	July 7, 2010	McMaster University
Afia Aziz Ur Rehman(Medicine)	Dec 17, 2010	McMaster University

Chair- PhD Transfer

John-Paul Oliveria	June 13, 2013	McMaster University
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Chair- PhD Defence

Victor Ferriera	November 6, 2014	McMaster University
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External Examiner- MSc defense

Andrea Monjo	December 8,2016	Sir Wilfred Laurier University
Sarah Poynter	August, 5, 2013	Sir Wilfred Laurier University
Joshua Kong	September 16, 2013	McMaster University
Elena Pretus	August 15, 2012	McMaster University
Elishka Pek	July 3, 2009	McMaster University
Aman Thatte	December 18, 2009	McMaster University

External Examiner- PhD defense

Alyssa Cull	February 2017	Queen's University
Otto Strauss	May 2016	University of Auckland, New Zealand

Emma de Jong	December 2015	Murdoch University, Australia.
Amra Saric	December 16, 2015	Ryerson University
Cameron Stuart McAlpine	June 19, 2015	McMaster University
Paula Beaumont	September, 12, 2014	University of Edinburgh, Scotland, UK
Aswin Hari	October 30, 2013	University of Calgary
Kenneth Chalcraft	March 20, 2013	McMaster University
Katherine J. Kasper	January 30, 2013	University of Western Ontario
Amal Al-Gawari	June 25, 2012	McMaster University

Other contributions to teaching

University of Guelph MICR*4010 Bacterial Pathogenesis (1 lecture) January 2014
 February 2015
 February 2016

Dundas Central – Grade 4 class “Dirt Microbiology” (2 science classes) March 2017
 Dundas Central-Grade 1 class “Good germs/bad germs” (2 science classes) January 2014

Mohammed Malik (Jan 2015-Aug 2015), Co-op student, Biotechnology program

Kazi Akther (August 2014), High School Student, winner of the IIDR internship for the Bay Area Science & Engineering Fair

Priynka Dhillon (August 2014), High School Student, winner of the IIDR internship for the Bay Area Science & Engineering Fair

Judge for Trainee presentations at the 1st Annual Perey Symposium (June 2014) and member of awards committee

Catharine Bowman, High School Student, performed a science fair project for the Bay Area Science and Engineering Fair (Jan- Mar 2014).

Dessi Loukov, Co-op student, industrial student with Qu Biologics (May –Dec 2013)

Prashant Kalvapalie, MITACS summer exchange student (May-Aug 2013)

Eisha Ahmed, High School Student, competing in the International Science Fair (Apr -Aug 2013), supervised preparation for the International Science fair & hosted with Dr. Mike Surette for her receipt of the IIDR Summer Student Internship

Leonard Rivet, High School Student, member of Youth Engaged in Science (YES) Mentorship program (Sept 2012-June 2013, with Dr. Alba Guarné)

Jason Fan, High School Student, IIDR internship winner (May- Aug 2012)

Julia Lee, High School Student, member of Youth Engaged in Science (YES) Mentorship program (Oct 2009-Mar 2010)

Research Funding:

Currently Held:

01/04/2016- 31/03/2018	Ontario Brain Institute - Interdisciplinary Program Province of Ontario Neurodevelopmental Disorders Network (POND) Collaborator, Stelios Georgiades (PI) Jane Foster (co-PI),	\$27,500
01/08/2016- 30/07/2017	“The aging microbiome as a risk factor for developing pneumococcal pneumonia in mid- to late-life” Ontario Lung Association	\$48,023
01/09/2016 - 30/08/2021	Hugs for HEALTH (Healthy Gut Bugs for Healthy Babies) DOHaD Team: Maternal gut health and impacts on transgenerational obesity risk Collaborator with Dr. Deborah Sloboda	\$1.5 million total \$25,000/yr to Bowdish
01/07/2015 - 30/06/2016	Ontario Lung Association – Grant in Aid Host-pathogen strain specificity as determinant in complicated pneumonia and pleural empyema Collaborator with Dr. Mike Surette (PI)	\$49,500
2015-2023	<u>IMPROVE: Improving Outcomes Of Critically Ill Patients</u> Principal Investigator: <u>D Cook</u> Senior Scientists & Program Experts: MO Meade, JC Marshall, GH Guyatt, L Thebane, PJ Devereaux, M Surette, J Marshall, R Hall, M Herridge, P Hebert, C Martin, J Muscedere, H Chochinov Research Scholars & Young Investigators: M Kho, D Bowdish, W Alhazzani, O Smith, E Belley-Cote Funding Agency: CIHR Foundation Scheme Live Pilot Research Program	Funds Awarded: \$2,252,588 (\$0 to Bowdish)
01/01/2015- 01/01/2020	Ontario Research Fund Solving the Antibiotic Resistance Crisis Principal Applicant: Gerry Wright Co-applicants: D. Bowdish, E. Brown, L. Burrows, B. Coombes, A. Capretta, N. Magarvey, M. Surette, D. Mertz, A. Savchenko, M. Organ	\$10,655,996 \$75,000/yr to Bowdish
01/05/2015- 31/04/2020	NSERC (National Science & Engineering Research Council of Canada) “Uncovering mechanisms of phagocytosis by class A scavenger receptors” - Principal Applicant	\$45,000/yr x 5yr
09/01/2014- 03/31/2019	Ontario Early Researcher Award “Interplay between inflammation & impaired anti-bacterial immunity in the elderly” -Principal Applicant	\$100,000 total
09/01/2012- 08/01/2017	Canadian Institute for Health Research (CIHR) “The Viral toxin: understanding binding, internalization and signaling of dsRNA”	\$ 709,615 total \$1500 to Bowdish

-co-Applicant with Karen Mossman

09/01/2012- Canadian Institute for Health Research (CIHR) \$1,047,395 total
08/01/2017 “Macrophage function changes with age and contributes to susceptibility to infectious disease”
-Principal Applicant

Previously held:

01/06/2014- Health Canada \$316,000/yr x
31/05/2017 Health Canada Biotechnology Initiative 3yrs
“Enhanced Scientific Capacity for Risk Assessment of the Pathogenicity Potential of Microbes Associated with Biotechnology” \$6000 to D. Bowdish
-collaborator (Principal Applicants Drs. Philip S. Shwed, Azam F. Tayabali)

01/01/2014- Labarge Optimal Aging Initiative \$58,000
01/01/2015 “Establishing age-related chronic inflammation as a modifiable risk factor for poor immune function in the elderly”
- co-Applicant with Dr. Mark Loeb, Dr. Chris Verschoor, Dr. Guillaume Pare

01/01/2013- Labarge Optimal Aging Initiative \$200,000 total
01/01/2016 “Probiotics to Prevent Respiratory Infections in the Elderly”
- co-Applicant with Dr. Mark Loeb, Dr. Jonathan Bramson, Dr. Mike Surette, Dr. Jennie Johnstone, Dr. Param Nair

09/01/2010- Canadian Institutes for Health Research (CIHR) \$500,000 total
31/08/2015 Emerging Team Grant
“Respiratory tract microbiome dynamics and the interplay of commensal bacteria with resident pathogens”
-co- Applicant with Dr. Mike Surette

01/09/2010- Canadian Foundation for Innovation (CFI) \$352,693 total
31/08/2015 Leaders Opportunity Fund
“Drug Discovery in a post-antibiotic world: Infrastructure for development of novel immunomodulators”
- Principal Applicant

01/05/2010- NSERC (National Science & Engineering Research Council of Canada) \$33,000/yr x 5yr
31/04/2015 “Novel signaling motifs in macrophage pattern recognition receptors”
- Principal Applicant

01/01/2014- Industrial Contract – Qu Biologics \$63,734.40
05/2015 “SSI treatment as a novel immunotherapeutic”

03/01/2013- Canadian Institute for Health Research (CIHR) \$146,863/yr
02/28/2015 Probiotics: Prevention of Severe Pneumonia and Endotracheal Colonization Trial (PROSPECT): A Feasibility and Proof of Concept Pilot Trial
-co-applicant with Drs. Deborah Cook (PI), Daren Heyland, Jennie

Johnstone, John Marshall, Maureen Meade, Mike Surette & Lehana, Thabane

03/01/2012- 02/28/2015	Role of MARCO in Susceptibility & Resistance to Tuberculosis Subcontract – Lead PI Kaori Sakamoto at University of Georgia	\$29,000/yr x 3 yrs
03/31/2014 - 09/01/2014	Connect Canada Internship awards supporting Kyle Novakowski (MSc student) and Dr. Chris Verschoor (PDF) “Lung Cancer Diagnostic” -co-applicant with Miami Mice	\$20,000
03/31/2014 - 09/01/2014	Ontario Centres of Excellence “Lung Cancer Diagnostic” -co-applicant with Miami Mice	\$20,000
03/31/2014 - 09/01/2014	NSERC-Engage Quantitative immunoassay for TLE1 protein -Principal Applicant Industrial collaboration with Miami Mice	\$25,000
05/2013- 12/2013	Industrial Contract – Qu Biologics “SSI treatment as a novel immunotherapeutic”	\$25,200
08/01/2012- 08/01/2013	Ontario Lung Association-Pfizer Canada Research Award “Age-associated pneumonia results from impaired immune control of nasopharyngeal carriage” -Principal Applicant	\$50,000/yr
01/01/2012- 01/05-2012	Effects of pneumococcal colonization on SSI therapy Industrial contract- Qu Biologics (Vancouver).	\$25,575.68 x 0.5yrs
07/01/2010- 06/01/2013	National Institutes of Health (NIH) RO1- subcontract “Control of <i>Streptococcus pneumoniae</i> carriage” -co-applicant with Dr. Jeffrey Weiser	\$50,000/yr x 3yr
01/01/2011 - 31/12/2011	ASPIRE-Pfizer New Investigator Award “Intranasal administration of Linezolid to prevent seasonal & post-influenza pneumococcal pneumonia in the elderly.”	\$100,000/1yr
06/01/2010- 05/31/2011	Canadian Institutes for Health Research (CIHR) Catalyst Grant “Molecular mechanisms of monocyte/macrophage immunosenescence and susceptibility to <i>Streptococcus pneumoniae</i> infection in the nursing home elderly” - Principal Applicant	\$50,000/1yr

12/01/2010- 12/01/2011	Ontario Lung Association Grant-in-Aid “Macrophage scavenger receptors – novel recognition receptors for <i>Mycobacterium tuberculosis</i> ” - Principal Applicant	\$50,000/1yr
03/01/2010- 31/03/2011	CIHR (Canadian Institutes of Health Research) “The role of macrophage function in prevention of <i>Streptococcus pneumoniae</i> infection in the nursing home elderly” - Principal Applicant	\$100,000/yr x 1 yr
01/5/2010- 31/04/2011	Institute for Infectious Disease Research (IIDR) “Clinical markers of monocyte immunosenscence” -Co- applicant with Dr. Jonathan Bramson & Dr. Jack Gauldie	\$10,000/yr x 1 yr
05/2009- 06/2010	Institute for Infectious Disease Research, McMaster University, “Colonization vs Infection: Why aren’t macrophage responses to <i>Streptococcus pneumoniae</i> immunizing?” - Principal Applicant	\$20,000/yr x 1 yr

Patents

- “Biological Membrane-Based Sensor” Maikel C. Rheinstädter, Sebastian Himbert, Richard J. Alsop, Jose M. Moran-Mirabal, Kevin Saem, Dawn M. E. Bowdish. U.S. Provisional Pat. Ser. No. 62/413,652, filed October 27, 2016
- Structured Glassy Surfaces for Use as Substrates for Immune Cell Assays. DME. Bowdish, J. Moran-Mirabal, J. Boyle, Y. Zhu. Disclosure agreement filed May 2016.
- Blockade of TNFalpha for treatment of age related tissue damage and impaired anti-bacterial activity. D. Bowdish & A. Puchta. Provisional patent filed May 23rd, 2014, Serial No. 62/002,40, 6.
- Effectors of innate immunity. R.E.W. Hancock, B. Finlay, M. Scott, D. Bowdish, C. Rosenberger and J.P. Powers. U.S. provisional patent No 60/336,632, filed Dec. 3, 2001 Full US application 10/308,905 filed Dec. 2, 2002; published Sept 16, 2004. US patent 7,507,787, granted March 24, 2009.
- Effectors of innate immunity. R.E.W. Hancock, B. Finlay, M. Scott, D. Bowdish, C. Rosenberger, J.P. Powers, N. Mookherjee, J. Yu. CIP of US application 10/308,905; Application no. US11/400,411, filed April 7, 2006.
- Effectors of innate immunity. R.E.W. Hancock, B. Finlay, M. Scott, D. Bowdish, C. Rosenberger and J.P. Powers. South African Patent No. 2004/4919, granted May 31, 2006.
- Effectors of innate immunity. R.E.W. Hancock, B. Finlay, M. Scott, D. Bowdish, C. Rosenberger and J.P. Powers. Australian Patent No. 200223365675, granted April 5, 2007.
- Effectors of innate immunity. R.E.W. Hancock, B. Finlay, M. Scott, D. Bowdish, C. Rosenberger and J.P. Powers. Chinese Patent No. 02827327.3, granted Dec 2, 2007.
- Effectors of innate immunity. R.E.W. Hancock, B. Finlay, M. Scott, D. Bowdish, C. Rosenberger and J.P. Powers. Hong Kong Patent HK1075677, granted August 22, 2008.

Lifetime Publications (Peer reviewed, trainees in bold): **Contributions to books (Book chapters)**

- 1 Rauh, M., Cook, E., **Bowdish, D.M.E.** Myeloid derived suppressor cells in aged humans. Handbook of Immunosenescence: Basic Understanding and Clinical Applications, edited by Tamas Fulop, Claudio Franceschi, Katsui Hirokawa and Graham Pawelec. In press.
- 2 **Bowdish, D.M.E.**, 2016. Macrophage Activation and Polarization. In: Ratcliffe, M.J.H.(Editor in Chief), Encyclopedia of Immunobiology, Vol. 1, pp. 289–292. Oxford Academic Press.
- 3 **Novakowski, K.E., Loukov, D., Chawla, V., Bowdish, D.M.E.** Assays for bacterial binding, phagocytosis and killing. Methods in Molecular Biology: Phagocytosis and Phagosome Maturation. Methods Mol Biol. 2017;1519:297-309. Editor: Roberto J. Botelho.
- 4 **Loukov, D., Naidoo, A., Bowdish, D.M.E.** (Aug 2015) Immunosenescence: implications for vaccination programs in the elderly. Vaccine: Development and Therapy. Volume 2015:5 Pages 17–29
- 5 **Lee, Keith M, Yin, Charles, Verschoor, Chris P, and Bowdish, Dawn ME**(Sep 2013) Macrophage Function Disorders. In: eLS. John Wiley & Sons Ltd, Chichester. <http://www.els.net> [doi: 10.1002/9780470015902.a0002174.pub3]
- 6 **Verschoor CP, Puchta A, Bowdish DME.** The Macrophage. Methods Mol Biol. (2012);844:139-56. doi: 10.1007/978-1-61779-527-5_10.
- 7 **Bowdish, D.M.E.** & Gordon. S. Macrophage Function Disorders: a genetic perspective. Encyclopaedia of Life Sciences. (2009) DOI:10.1002/9780470015902.a0002174.pub2
- 8 **Bowdish, D.M.E., Gordon, S.** Introduction to macrophage biology. In: Protozoans in Macrophages. Landes Biosciences. Edited by E.Y. Denkers and R. Gazzinelli. (2007)1-15.
- 9 **Bowdish, D.M.E.,** Davidson, D.J., Hancock, R.E.W. Immunomodulatory properties of defensins and cathelicidins. In: Current Topics in Microbiology and Immunology. Edited by W. Shafer (2006)306:27-66.

Journal articles

Accepted/In press:

1. **Puchta, A, Naidoo, A, Verschoor, C.P,** Jury, J., Szamosi, J.C., Surette, MG., Verdú, E., **Bowdish, D.M.E.** New evidence for Metchnikoff's hypothesis of aging: the intestinal microbiota drives age-associated inflammation and impaired macrophage function. Cell Host & Microbe.
2. Prabhudas, M., Baldwin, CL., Bollyky, P., Bowdish, D.M.E., Drickamer, K., Febbraio, M., Herz, J., Kobzik, L., Krieger, M., Loike, J., McVicker, B., Means, TK., Moestrup, S., Post, SR., Sawamura, S., Silverstein, S., Speth, RC., Telfer, JC., Thiele, MG., Wang, X., Wright, SD., El Khoury, J.A A Consensus Definitive Classification of Scavenger Receptors and their Roles in Health and Disease. Journal of Immunology.

In revision (1):

In review (2):

Submitted (2):

Preparation for Submission (3):

Journal Articles (published):

- 1 Mendonca ML, Szamosi JC, Lacroix AM, Fontes ME, **Bowdish DM,** Surette MG. The sil Locus in *Streptococcus Anginosus* Group: Interspecies Competition and a Hotspot of Genetic Diversity. Front Microbiol. 2017 Jan 10;7:2156. doi: 10.3389/fmicb.2016.02156.
- 2 Dutzan N, Abusleme L, Bridgeman H, Greenwell-Wild T, Zangerle-Murray T, Fife ME, Bouladoux N, Linley H, Brenchley L, Wemyss K, Calderon G, Hong BY, Break TJ, **Bowdish DM,** Lionakis MS, Jones SA, Trinchieri G, Diaz PI, Belkaid Y, Konkel JE, Moutsopoulos NM. On-going Mechanical Damage from Mastication Drives Homeostatic Th17 Cell Responses at the Oral Barrier. Immunity. 2017 Jan 6. pii: S1074-7613(16)30516-7. doi: 10.1016/j.immuni.2016.12.010

- 3 Himbert S, Alsop RJ, Rose M, Hertz L, Dhaliwal A, Moran-Mirabal JM, **Verschoor CP, Bowdish DM**, Kaestner L, Wagner C, Rheinstädter MC. The Molecular Structure of Human Red Blood Cell Membranes from Highly Oriented, Solid Supported Multi-Lamellar Membranes. *Sci Rep*. 2017 Jan 3;7:39661. doi: 10.1038/srep3966
- 4 Mullarkey CE, Bailey MJ, Golubeva DA, Tan GS, Nachbagauer R, He W, **Novakowski KE, Bowdish DM**, Miller MS, Palese P. Broadly Neutralizing Hemagglutinin Stalk-Specific Antibodies Induce Potent Phagocytosis of Immune Complexes by Neutrophils in an Fc-Dependent Manner. *MBio*. 2016 Oct 4;7(5). pii: e01624-16. doi: 10.1128/mBio.01624-16
- 5 Lelic A, **Verschoor CP**, Lau VW, Parsons R, Eveleigh C, **Bowdish DM**, Bramson JL, Loeb MB. Immunogenicity of Varicella Zoster Vaccine and Immunologic Predictors of Response in a Cohort of Elderly Nursing Home Residents. *J Infect Dis*. 2016 Oct 5. pii: jiw462
- 6 Cook, D., Johnstone, J., Marshall, J., Lauzier, F., Thabane, J., Mehta, S., Dodek, P., McIntyre, L., Pagliarello, J., Henderson, J., Taylor, R., Carten-Cebo, R., Golan, E., Herridge, M., Wood, G., Ovakim, D., Karachi, T., Surette, M., **Bowdish, D.**, Lamarche, D., **Verschoor, C.**, Duan, E., Heels-Ansdell, D., Arabi, Y., Meade, M. PROSPECT Investigators and the Canadian Critical Care Trials Group. *Trials*. 2016 Aug 2;17:377. doi: 10.1186/s13063-016-1495-x.
- 7 Lee, E.-S.A., F.J. Whelan, **D.M. Bowdish**, and A.K. Wong. 2016. Partitioning and Correlating Subgroup Characteristics from Aligned Pattern Clusters. *Bioinformatics* btw211.
- 8 Bridle, B.W., A. Nguyen, O. Salem, L. Zhang, S. Koshy, D. Clouthier, L. Chen, J. Pol, S. Swift, and **D.M. Bowdish**. 2016. Privileged Antigen Presentation in Splenic B Cell Follicles Maximizes T Cell Responses in Prime-Boost Vaccination. *The Journal of Immunology* 1600106.
- 9 **Loukov, D., Naidoo, A., Puchta, A.**, Bowdish, DME., Tumour Necrosis Factor drives increased splenic monoopoiesis in aged mice. *J Leukoc Biol*. 2016 Apr 1. pii: jlb.3MA0915-433RR.
- 10 **Fei, F., Lee, K.M.**, McCarry, BE., Bowdish, DME. Age-associated metabolic dysregulation in macrophages during inflammation. *Sci Rep*. 2016 Mar 4;6:22637.
- 11 Shen P, Morissette MC, Vanderstocken G, Gao Y, Hassan M, Roos A, Thayaparan D, Merlano M, **Dorrington MG**, Nikota JK, Bauer CM, Kwiecien JM, Labiris R, **Bowdish DM**, Stevenson CS, Stämpfli MR. Cigarette smoke attenuates the nasal host response to *Streptococcus pneumoniae* and predisposes to invasive pneumococcal disease in mice. *Infect Immun*. 2016 Feb 29. pii: IAI.01504-15
- 12 Magun, R., **Verschoor, CP., Bowdish, DME.**, Provias, J., *Mycoplasma pneumoniae*, a trigger for Weston Hurst Syndrome. *Neuroimmunology & Neuroinflammation. Neurol Neuroimmunol Neuroinflamm*. 2016 Jan 21;3(1):e187. doi: 10.1212/NXI.000000000000187. eCollection 2016 Feb.
- 13 **Puchta A, Naidoo A, Verschoor CP, Loukov D, Thevaranjan N**, Mandur TS, Nguyen PS, Jordana M, Loeb M, Xing Z, Kobzik L, Larché MJ, **Bowdish DM**. TNF Drives Monocyte Dysfunction with Age and Results in Impaired Anti-pneumococcal Immunity. *PLoS Pathog*. 2016 Jan 14;12(1):e1005368. doi: 10.1371/journal.ppat.1005368. eCollection 2016 Jan.
- 14 **Fei, F.**, Mendonca, ML., McCarry, BE., Surette, MG., **Bowdish, DME**. Comprehensive Metabolic and Transcriptomic Profiling of *Streptococcus intermedius* during Aerobic and Anaerobic Growth. *Metabolomics* 12 (3), 1-13.
- 15 **Thevaranjan, N.**, Whelan, FJ., **Puchta, A., Ashu, E.**, Rossi, L., Surette, MG., **Bowdish, DME**. *Streptococcus pneumoniae* colonization disrupts the microbial community within the upper respiratory tract of aging mice. *Infect Immun*. 2016 Jan 19. pii: IAI.01275-15.
- 16 **Fei, F.**, diCenzo, G., **Bowdish, D.M.E.**, McCarry, B.E., Finan, T. Effects of synthetic large-scale genome reduction on metabolism and metabolic preferences in a nutritionally complex environment. *Metabolomics*. Effects of synthetic large-scale genome reduction on metabolism and metabolic preferences in a nutritionally complex environment. *Metabolomics*, 12(2), 1-14. DOI:10.1007/s11306-015-0928-y
- 17 Zuccaro L, Cox A, Pray C, Radford K, **Novakowski K, Dorrington M**, Surette MG, **Bowdish D**, Nair P. Histone deacetylase activity and recurrent bacterial bronchitis in severe eosinophilic asthma. *Allergy*. 2015 Dec 30. doi: 10.1111/all.12831

- 18 Nellimarla S, Baid K, Loo YM, Gale M Jr, **Bowdish DM**, Mossman KL. Class A Scavenger Receptor-Mediated Double-Stranded RNA Internalization Is Independent of Innate Antiviral Signaling and Does Not Require Phosphatidylinositol 3-Kinase Activity. *J Immunol*. 2015 Sep 11. pii: 1501028.
- 19 **Yap, N. V.**, Whelan, F. J., **Bowdish, D. M.E***, & Golding, G. B.* (2015). The Evolution of the Scavenger Receptor Cysteine-Rich Domain of the Class A Scavenger Receptors. *Frontiers in Immunology*. *Joint corresponding authors
- 20 **Verschoor, C. P.**, Lelic, A., Bramson, J., & **Bowdish, D. M.E** (2015). An introduction to automated flow cytometry gating tools and their implementation. *Frontiers in Immunology*, 6, 380.
- 21 **Verschoor, CP.**, Singh, P., Russell, ML., **Bowdish, DME**, Ward, BJ, Loeb, M. *PLoS one*. Microneutralization Assay Titres Correlate with Protection against Seasonal Influenza H1N1 and H3N2 in Children. *PLoS One*. 2015 Jun 24;10(6):e0131531. doi: 10.1371/journal.pone.0131531. eCollection 2
- 22 Johnstone J, Meade M, Marshall J, Heyland DK, Surette M, **Bowdish D**, Lauzier F, Thabane L, Cook DJ. Probiotics: Prevention of Severe Pneumonia and Endotracheal Colonization Trial: PROSPECT: Protocol for A Feasibility Randomized Pilot Trial. *Pilot and Feasibility Studies* 2015; 1:19.
- 23 Roos, AB., Sethi, S., Nikota, J., Wrona, C.T., **Dorrington, MG.**, Sandén, C., Bauer, CMT., Shen, P., **Bowdish, D.**, Stevenson, CS., Erjefält, JS., Stampfli, MR. Interleukin-17A Promotes Neutrophilia in Acute Exacerbation of Chronic Obstructive Pulmonary Disease. *Am J Respir Crit Care Med*. 2015 Jun 3.
- 24 **Verschoor CP, Loukov D, Naidoo A, Puchta A**, Johnstone J, Millar J, Lelic A, **Novakowski KE, Dorrington MG**, Loeb M, Bramson JL, **Bowdish DM**. Circulating TNF and mitochondrial DNA are major determinants of neutrophil phenotype in the advanced-age, frail elderly. *Mol Immunol*. 2015 Feb 4;65(1):148-156. doi: 10.1016/j.molimm.2015.01.015.
- 25 **Stearns JC**, Davidson CJ, McKeon S, Whelan FJ, Fontes ME, Schryvers AB, **Bowdish DM**, Kellner JD, Surette MG. Culture and molecular-based profiles show shifts in bacterial communities of the upper respiratory tract that occur with age. *ISME J*. 2015 Jan 9. doi: 10.1038/ismej.2014.250
- 26 **Verschoor C.P.**, Johnstone J., Loeb M., Bramson J.L., and **Bowdish D.M.E**. Anti-pneumococcal deficits of monocyte-derived macrophages from the advanced-age, frail elderly and related impairments in PI3K-AKT signalling. *Hum Immunol*. 2014 Oct 13;75(12):1192-1196. doi: 10.1016/j.humimm.2014.10.004
- 27 **Verschoor, C.P., Naidoo, A., Wallace, J.G.**, Johnstone, J., Loeb, M., Bramson, J.L., **Bowdish, D.M.E**. Circulating muramyl dipeptide is negatively associated with interleukin-10 in the advanced-age, frail elderly. *Inflammation*. 2014 Oct 3. [Epub ahead of print]
- 28 Kaiser JC, **Verschoor CP**, Surette MG, **Bowdish DM**. Host cytokine responses distinguish invasive from airway isolates of the *Streptococcus milleri/anginosus* group. *BMC Infect Dis*. 2014 Sep 11;14(1):498. doi: 10.1186/1471-2334-14-498.
- 29 **Verschoor C.P., Dorrington M.G.**, Kaiser J., **Novakowski K.**, Radford, K., Surette, M.G., Nair P. and **Bowdish D.M.E**. MicroRNA-155 is a critical regulator of the IL-17A-mediated recruitment of macrophages during *S. pneumoniae* colonization. *Infect Immun*. 2014 Nov;82(11):4824-33. doi: 10.1128/IAI.02251-14.
- 30 **Verschoor CP**, Johnstone J, Millar J, Parsons R, Lelic A, Loeb M, Bramson JL, **Bowdish DM**. Alterations to the frequency and function of peripheral blood monocytes and associations with chronic disease in the advanced-age, frail elderly. *PLoS One*. 2014 Aug 8;9(8):e104522. doi: 10.1371/journal.pone.0104522. eCollection 2014
- 31 Love RJ, Patenaude M, **Dorrington M, Bowdish DM**, Hoare T, Jones KS. An investigation of scavenger receptor mediated leukocyte binding to polyanionic and uncharged polymer hydrogels. *J Biomed Mater Res A*. 2014 Aug 2.
- 32 **Bowdish D.M.E**. You give me fever: Transcriptional responses to LPS. *J. Leuk. Biology (Invited editorial)*. *J Leukoc Biol*. 2014 Aug;96(2):161-3. doi: 10.1189/jlb.3CE0314-163R.
- 33 Chu, DK, Jimenez-Saiz, R., **Verschoor, CP.**, Walker, TD., Goncharova, S., Llop-Guevara, A., Shen, P., Gordon, ME., Barra, NG., Bassett, J., Kong, J., Fattouh, R., McCoy, KD, **Bowdish, DM.**, Erjefält, JS., Pabst, O., Humbles, A., Kolbeck, R., Waserman, S., Jordana, M. Indigenous Enteric Eosinophils Control DCs to

- Initiate a Primary Th2 Immune Response in vivo. *J Exp Med*. 2014 Jul 28;211(8):1657-72. doi: 10.1084/jem.20131800.
- 34 Kafka JK, Osborne BJW, Sheth PM, Nazli A, Dizzell S, Huibner S, Kovacs C, **Verschoor CP, Bowdish DM**, Kaul R, Kaushic C. Latent TGF- β 1 is compartmentalized between blood and seminal plasma of HIV-positive men and its activation in semen is negatively correlated with viral load and immune activation. *Am J Reprod Immunol*. 2014 Jul 23. doi: 10.1111/aji.12300.
- 35 Perry JA, Koteva K, **Verschoor CP**, Wang W, **Bowdish DM**, Wright GD. A macrophage-stimulating compound from a screen of microbial natural products. *J Antibiot (Tokyo)*. 2014 Jul 2. doi: 10.1038/ja.2014.83.
- 36 **Fei F, Bowdish DM**, McCarry BE. Comprehensive and simultaneous coverage of lipid and polar metabolites for endogenous cellular metabolomics using HILIC-TOF-MS. *Anal Bioanal Chem*. 2014 Jun;406(15):3723-33. doi: 10.1007/s00216-014-7797-5. Epub 2014 Apr 10
- 37 Whelan FJ, **Verschoor CP**, Stearns JC, Rossi L, Luinstra K, Loeb M, Smieja M, Johnstone J, Surette MG, **Bowdish DM**. The loss of topography in the microbial communities of the upper respiratory tract in the elderly. *Ann Am Thorac Soc*. 2014 May;11(4):513-21. doi: 10.1513/AnnalsATS.201310-351OC.
- 38 **Puchta, A., Verschoor, C. P., Thurn, T., Bowdish, D. M. E.** Characterization of Inflammatory Responses During Intranasal Colonization with *Streptococcus pneumoniae*. *J. Vis. Exp.* (83), e50490, doi:10.3791/50490 (2014).
- 39 Nazli, A., Ferreira, V.H., Anipindi, V., Mueller, K., Kafka, J., Osborne, B.J., **Chauvin, S.**, Mian, F., Ouellet, M., Tremblay, M.J., Mossman, K., Ashkar, A., Kovacs, C., **Bowdish, D.M.E.**, Snider, D.P., Kaul, Kaushic, C. HIV-1 glycoprotein 120 induces TLR-2 and 4 mediated innate immune activation in human female genital epithelium. *J Immunol*. 2013 Sep 16.
- 40 Farha, MA., **Verschoor, CP., Bowdish D.**, Brown, E.D. Collapsing the proton motive force to identify novel synergistic combinations against *Staphylococcus aureus*. Publication date Aug 2013. *Chem Biol*. 2013 Aug 20. doi:p11: S1074-5521(13)00273-1. 10.1016/j.chembiol.2013.07.006.
- 41 Raizman JE, Chen YX, Seibert T, Hibbert B, Cuerrier CM, Salari S, Zhao X, Hu T, Shi C, Ma X, Simard T, Caravaggio J, Rayner K, **Bowdish D**, Moore K, O'Brien ER. Heat Shock Protein-27 Attenuates Foam Cell Formation and Atherogenesis by Down-regulating Scavenger Receptor-A Expression via NF- κ B Signaling. *Biochim Biophys Acta*. 2013 Aug 9. pii: S1388-1981(13)00160-1. doi: 10.1016/j.bbaliip.2013.07.015. [Epub ahead of print]
- 42 Mian, F., Chew, M., **Bowdish, DME.** Ashkar, A. Length of dsRNA (Poly I:C) drives distinct innate immune responses depending on the cell types. *J Leukoc Biol*. 2013 Aug 2. [Epub ahead of print]
- 43 **Bowdish, D.M.E.** Myeloid Derived Suppressor Cells, Aging & Cancer. Invited commentary in *Oncol Immunology* 2:7, e24754; July 2013.
- 44 **Bowdish DME.**, Sakamoto, K., Lack, N.A., Sirugo, G., Newport, M., Gordon, S., Hill, AVS., Vannberg, FO., Genetic variants in MARCO are associated with susceptibility to tuberculosis. *BMC Med Genet*. 2013 Apr 23;14:47. doi: 10.1186/1471-2350-14-47.
- 45 **Verschoor, C.P.**, Johnstone, J., **Dorrington, M.G.** Millar, J., Habibagahi, M., Lelic, A., Loeb, M., Bramson, JL., **Bowdish, DME.** Blood CD33(+)HLA-DR(-) myeloid-derived suppressor cells are increased with age, frailty and a previous history of cancer. *J Leukoc Biol*. 2013 Apr;93(4):633-7. doi: 10.1189/jlb.0912461.
*most highly downloaded papers in *J. Leukoc Biol* in 2013
- 46 Lelic A, **Verschoor CP**, Ventresca M, Parsons R, Eveleigh C, **Bowdish D.**, Betts, MR., Loeb, MB., Bramson, JL. (2012) The Polyfunctionality of Human Memory CD8+ T Cells Elicited by Acute and Chronic Virus Infections Is Not Influenced by Age. 2013. *PLoS Pathog* 8(12): e1003076. doi:10.1371/journal.ppat.1003076
- 47 **Dorrington, MG.**, Roche, A., **Chavin, SE, Tu, Z,** Weiser, JN, **Bowdish, DME.** MARCO is required for TLR2- and NOD2-mediated responses to *Streptococcus pneumoniae* and clearance of pneumococcal colonization in the murine nasopharynx. *J Immunol*. 2013 Jan 1;190(1):250-
- 48 **Whelan, FJ.**, Meehan, C., Golding, B., McConkey, B., **Bowdish DME.** The evolution of the class A scavenger receptors. *BMC Evol Biol*. 2012 Nov 27;12(1):227.

- 49 Geiger-Maor A, Levi I, Even-Ram S, Smith & **Bowdish DM**, Nussbaum G, Rachmilewitz J. Cells exposed to sublethal oxidative stress selectively attract monocytes/macrophages via scavenger receptors and MyD88-mediated signaling. *J Immunol.* 2012 Feb 1;188(3):1234-44. Epub 2012 Jan 4.
- 50 Pelka P, Miller MS, Cecchini M, Yousef AF, **Bowdish DM**, Dick F, Whyte P, Mymryk JS. Adenovirus E1A directly targets the E2F/DP-1 complex. *J Virol.* 2011 Sept;85(17):8841-51. Epub 2011 Jun 29.
- 51 Mukhopadhyay S., Plüddemann A., Hoe J.C., Williams K., Varin A., Makepeace K. **Bowdish D.**, Smale S, Moxon E.R., Barclay A.N., Gordon S. CD200 induction by TLRs and NLRs limits macrophage activation to protect the host from meningococcal septicaemia. *Cell Host Microbe.* 2010 Sep 16;8 (3):236-47.
- 52 DeWitte-Orr SJ, Collins SE, Bauer CM, **Bowdish DM**, Mossman KL. *PLoS Pathog.* An accessory to the 'Trinity': SR-As are essential pathogen sensors of extracellular dsRNA, mediating entry and leading to subsequent type I IFN responses. 2010 Mar 26; 6(3):e1000829.
- 53 Gong JH, Nicholls EF, Elliott MR, Brown KL, Hokamp K, Roche FM, Cheung CY, Falsafi R, Brinkman FS, **Bowdish DM**, Hancock RE. G-protein-coupled receptor independent, immunomodulatory properties of chemokine CXCL9. *Cell Immunol.* 2010;261(2):105-13.
- 54 **Bowdish D.M.E.**, Sakamoto K., Kim M., Kroos M., Mukhopadhyay S., Leifer C.A., Gordon S., Russell D.G. Mycobacterial trehalose 6, 6' dimycolate uses MARCO and TLR2 as co-receptors for macrophage activation. *PLoS Pathogens.* 2009 Jun;5(6):e1000474.
- 55 **Bowdish DM**, Gordon S. Conserved domains of the class A scavenger receptors: evolution and function. (2009) *Immunol Rev.* Jan;227(1):19-31.
- 56 Pistolic J., Cosseau C., Li Y., Yu J., Filewod N.C.J., Gellatly S., Rehaume L.M. **Bowdish D.M. E.**, Hancock R.E.W. Host defense peptide LL-37 induces IL-6 expression in human bronchial epithelial cells by activation of the NF- κ B signaling pathway. *J. Innate Immun.* 2008 Nov 6.
- 57 Yu J., Mookherjee N., **Bowdish D.M.E.**, Pistolic J., Li Y., Rehaume L., Hancock R.E.W. Host defence peptide LL-37, in synergy with inflammatory mediator IL-1 β , augments immune responses by multiple pathways. *J. Immunol.* 2007 Dec 1;179(11):7684-91.
- 58 Chang, G.W., Davies, J.Q., Stacey, M., Yona, S., **Bowdish, D.M.E.**, Hamann, J., Chen, T.C., Lin, C.Y., Gordon, S., Lin, H.H. CD312, the human adhesion-GPCR EMR2, is differentially expressed during differentiation, maturation, and activation of myeloid cells. *Biochem Biophys Res Commun.* 2007 Feb 2;353(1):133-8
- 59 Davidson, D.J., Currie, A.J., **Bowdish, D.M.E.**, Brown, K.L., Rosenberger, C.M., Ma, R.C., Bylund, J., Campsall, P.A., Puel, A., Picard, C., Casanova, J.L., Turvey, S.E., Hancock, R.E.W., Devon, R.S., Speert, D.P. IRAK-4 mutation (Q293X): rapid detection and characterization of defective post-transcriptional TLR/IL-1R responses in human myeloid and non-myeloid cells. *J. Immunol.* 2006 Dec1;177(11):8202-11.
- 60 Barlow, P.G., Li, Y, Wilkinson, T.S., **Bowdish, D.M.E.**, Lau, Y.E., Cosseau, C., Haslett, C., Simpson, A.J., Hancock, R.E.W., Davidson, D.J. The human cationic host defense peptide LL-37 mediates contrasting effects on apoptotic pathways in different primary cells of the innate immune system. *J. Leukoc Biol.* 2006 Sep;80(3):509-20.
- 61 Mookherjee, N, Brown, K.L, **Bowdish, D.M.E.**, Doria, S., Falsafi, R., Hokamp, K., Roche, F.M., Mu, R., Doho, G.H., Pistolic, J., Powers, J.P., Bryan, J., Brinkman, F.S.L., Hancock, R.E.W. 2006. Modulation of the Toll-like receptor-mediated inflammatory response by the endogenous human host defence peptide LL-37. *J. Immunol.* 2006 Feb 15;176(4):2455-64.
- 62 Lau, Y.E., **Bowdish, D.M.E.**, Cosseau, C., Hancock, R.E.W., Davidson, D.J. Apoptosis of airway epithelial cells: human serum sensitive induction by the cathelicidin LL-37. *Am J Respir Cell Mol Biol.* 2006 Apr;34(4):399-409.
- 63 **Bowdish, D.M.E.**, Davidson, D.J., Scott, M.G., Hancock R.E.W. 2005. Immunomodulatory activities of small host defence peptides. *Antimicrob Agents Chemother.* 2005. May;49:1727-32.
- 64 **Bowdish, D.M.E.**, Davidson D.J., Lau Y.E., Lee K, Scott, MG, Hancock, R.E.W. Impact of LL-37 on anti-infective immunity. *J Leukoc Biol.* 2005. 77:451-9.

- 65 **Bowdish, D. M. E.**, Davidson, D.J., Speert, D.P., Hancock, R.E.W. The Human Cationic Peptide LL-37 Induces Activation of the Extracellular Signal-Regulated Kinase and p38 Kinase Pathways in primary human monocytes. *J. Immunol.* 2004.172:3758-65.
- 66 Davidson, D. J., Currie, A. J., Reid, G. S., **Bowdish, D.M.E.**, MacDonald, K. L., Ma, R., Hancock, R.E.W., and Speert, D. P. The cationic antimicrobial peptide LL-37 modulates dendritic cell differentiation and dendritic cell-induced T cell polarization. *J Immunol.* 2004.172:1146-56.
- 67 Scott, M. G., Davidson, D. J., Gold, M. R., **Bowdish, D.**, Hancock, R.E.W. The human antimicrobial peptide LL-37 is a multifunctional modulator of innate immune responses. *J Immunol.* 2002. 169:3883-91.
- 68 Low, A.M., **Bowdish, D.M.**, Prashad, T.R., Gaspar, V. Interactions of chloroethylclonidine with rauwolfscine- and prazosin-sensitive adrenoceptors in dog saphenous vein. *Br J Pharmacol.* 1994. 113(4):1263-8.

Conference Proceedings

1. Lee, E. A., **Whelan, F. J.**, **Bowdish, D. M. E.**, & Wong, A. K. C., (2013, October). Characterizing Amino Acid Variations in Aligned Pattern Clusters of Scavenger Receptors. In: *Proceedings of the ACM Conference on Bioinformatics, Computational Biology and Biomedicine* (pp. 818). ACM.

Review articles

- 1 Staibano P, Arnold DM, **Bowdish DM**, Nazy I. The unique immunological features of heparin-induced thrombocytopenia. *Br J Haematol.* 2017 Apr 3. doi: 10.1111/bjh.14603.
- 2 **Schenck, L.P.**, Surette, M.G., **Bowdish, D.M.E.** Composition and immunological significance of the upper respiratory tract microbiota. Invited Review. *FEBS Lett.* 2016 Oct 12. doi: 10.1002/1873-3468.12455.
- 3 Kline, KA & **Bowdish DME.** Infections in an Aging Population. *Current Opinions in Microbiology. Curr Opin Microbiol.* 2015 Dec 10;29:63-67. doi: 10.1016/j.mib.2015.11.003.
- 4 Lai, F., Lichty, B., **Bowdish, DME.** Microvesicles: Ubiquitous contributors to infection and immunity. *J Leukoc Biol.* 2014 Dec 3. pii: jlb.3RU0513-292RR.
- 5 Prabhudas M, **Bowdish D**, Drickamer K, Febbraio M, Herz J, Kobzik L, Krieger M, Loike J, Means TK, Moestrup SK, Post S, Sawamura T, Silverstein S, Wang XY, El Khoury J. Standardizing scavenger receptor nomenclature. *J Immunol.* 2014 Mar 1;192(5):1997-2006. doi: 10.4049/jimmunol.1490003.
- 6 **Whelan, F.J.**, Yap, N., Golding, B. **Bowdish, DME.** Bioinformatics for Immunologists. *Frontiers in Immunology. Frontiers in Immunology.* 2014. 4, 416. doi: 10.3389/fimmu.2013.00416
*2nd most highly downloaded paper from this journal in 2014
- 7 **Dorrington, MG.**, **Bowdish, DME.** Immunosenescence and novel vaccination strategies for the elderly. *Frontiers in Immunology* (Editor Dr. Lorne Babiuk). 2013. doi:10.3388/immu.2013.00171
- 8 **Bowdish, D.M.E.** Gordon, S. Conserved domains of the class evolution and function. *Immunol Rev.* 2009 Jan;227(1):19-31.
- 9 **Bowdish DM**, Loffredo MS, Mukhopadhyay S, Mantovani A, Gordon S. (2007) Macrophage receptors implicated in the “adaptive” form of innate immunity. *Microbes infect.* Nov-Dec; 9(14-15): 1680-7.
- 10 Gibbons, MA., **Bowdish, D.M.E.**, Davidson, D.J., Salleneuve, JM., Simpson, A.J. Endogenous pulmonary antibiotics. *Scott Med J.* 2006 May;51(2):37-42.
- 11 **Bowdish, D.M.E.**, Hancock, R.E.W. 2005. Anti-endotoxin properties of cationic host defence peptides and proteins. 2005. *J. Endotoxin Res.* 11(4):230-6.
- 12 **Bowdish, D.M.E.**, Davidson, D.J., Hancock, R.E.W. 2004. A Re-evaluation of the role of host defence peptides in mammalian immunity. *Curr Protein Pept Sci.* 2005 Feb;6(1):35-51

Figures

S. Gordon. 2007. “Leukocyte migration” and “Phagocytosis & Autophagy” for: Macrophages and Phagocytosis. In: *Fundamental Immunology 6th Ed.* W. Paul Lippincott Raven. Publ. Philadelphia. Chapt 17.

Presentations (Invited):

1. Northwestern University. Division of Pulmonary and Critical Care Medicine Invited Speaker Series. "The microbiome drives age-associated inflammation and myeloid immunosenescence" April 3, 2017.
2. Queen's University. Department of Pathology & Molecular Medicine Seminar Series. "Aging less than Gracefully: Age-associated inflammation alters monocyte development and increases susceptibility to infection". February 22, 2017.
3. Wilfred Laurier University. Department of Biology Seminar Series. "Aging less than Gracefully: Age-associated inflammation alters monocyte development and increases susceptibility to infection". January 20, 2017
4. Firestone Respiriology Research Christmas Rounds. "Kiss your grandmother: The perils of intergenerational contact during the holiday season." December 13, 2016.
5. University of Toronto Immunology Speaker Series. "Age, inflammation and microbial dysbiosis conspire to impair anti-microbial immunity". December 5, 2016.
2. Society for the Immunobiology of Cancer Annual International Meeting. "Myeloid-Derived Suppressor Cells (MDSC), Age and Cancer". November 13, 2016.
3. University of Maryland (UMB) Invited Speaker Series. "Aging less than gracefully: Inflammation and the microbiome impair antimicrobial activity." November 9, 2016.
4. University of Georgia (UGA) Center for Vaccines & Immunology Seminar Series. "Age, infection & inflammation: More than the sum of their parts". Georgia, Alabama. October 17, 2016.
5. The Society for Leukocyte Biology's 49th Annual Meeting "The aging microbiota reprograms inflammatory Monocytes." September 15-17, 2016.
6. Louisiana State University Invited Speaker Series. Baton Rouge, Louisiana. "Metchnikoff's theory of aging: Intestinal permeability drives age-associated inflammation and susceptibility to infection" September 8, 2016.
7. Canadian Critical Care Trials Network. Halifax, NS. "Mechanistic Sub-study: Circulating Inflammatory and Immunomodulators in Critically ill patients in the PROSPECT trial" June 14, 2016.
8. PROSPECT Launch and Investigator meeting. Halifax, NS. "The potential of probiotics" and "Immunology for the Uninitiated" June 13, 2016. Informational sessions for research co-ordinators and nurses in the PROSPECT trial.
9. McMaster Geriatric Grand Rounds. Juravinski Hospital, Hamilton, ON. "Age-associated inflammation & susceptibility to *Streptococcus pneumoniae* infection" April 11, 2016.
10. Gordon Conference on Acute Respiratory Infections. Galveston, Texas. "Novel vaccination strategies for the elderly". February 26, 2016.
11. Invited Speaker series. Department of Microbiology & Immunology. University of Buffalo. "Age, infection & inflammation: More than the sum of their parts." November 18, 2015.
12. Invited speaker series. Department of Biology, Ryerson University. "Aging less than gracefully: how macrophage function declines with age and contributes to susceptibility to infection." October 22, 2015.
13. McMaster Institute of Geroscience Inaugural Symposium. "Age, infection & inflammation: More than the sum of their parts." October 1, 2015.
14. Allergy & Immunology Rounds. McMaster University. "The microbiome drives age-associated inflammation." May 22, 2015
15. Province of Ontario Neurodevelopmental disorders network Science Day. "Inflammation, infection, cognition and age" May 8, 2015
16. Ottawa-Carleton Institute of Biology Student Conference. "Aging gracefully: how aging and immunity intersect." Keynote speaker. April 29, 2015.
17. Buffalo Immunology Conference. Maryville NY. "The aging microbiome drives age-associated inflammation." April 23-24, 2015.

18. EMPHASIS seminar series, McMaster University. Keynote speaker. "The metabolism of age-associated inflammation". Keynote speaker. April 23, 2015.
19. University of Georgia Invited Speaker Series. "The role of phagocytic receptors in *Streptococcus pneumoniae* infections." March 28, 2015
20. Keystone Symposia: Dendritic Cells and Macrophages Reunite. Workshop presentation "Metchnikoff's theory of aging: Intestinal permeability drives age-associated inflammation and macrophage dysfunction." Mar 8 -10, 2015, Montreal, QC.
21. Farncombe Institute of Digestive Health Seminar Series. "Age, inflammation & the microbiota: Why the choices that you make in youth haunt/help you in old age". January 7, 2015
22. Biology of Aging Seminar Series. "Aging or inflamm-aging? Which causes immune decline with age?" McMaster University, Hamilton, ON. December 5, 2014.
23. Pfizer sponsored Research Exchange Meeting in conjunction with the Canadian Immunization conference. "Age-associated inflammation contributes to susceptibility to pneumococcal infection". Ottawa, Ontario. December 3rd, 2014
24. Health Canada Invited speaker series. "Aging, inflammation and the microbiome". Ottawa, Ontario. December 3rd, 2014
25. Labarge Optimal Aging Research Day. "Probiotics to prevent respiratory infections in the frail nursing home elderly. November 10, 2014.
26. Respiratory Research Rounds. Firestone institute. November 25 2014. "Age-associated inflammation impairs host-defence towards *Streptococcus pneumoniae*"
27. Nathan Shock Aging Center. "The microbiome drives age-associated inflammation." San Antonio, Texas. October 18, 2014.
28. Albany Medical School. Invited Speaker Series. "Inflammation drives macrophage dysfunction and susceptibility to pneumococcal infection". Sept 25, 2014
29. University of Guelph. Department of Pathobiology. Invited Speaker Series. "Macrophage scavenger receptors are required for control of colonization in the upper respiratory tract." Sept 19, 2014
30. British Society of Immunology. Inflammation and Immunity. University of Manchester, UK. September 9-10, 2014. "Metchnikoff 's theory of aging: the intestinal microbiota drives age-associated inflammation and impaired macrophage function"
31. Federation of Clinical Immunology Societies (FOCIS) Annual Meeting. July 25-28, 2014. Chicago Illinois. "Phagocytosis, Endocytosis and Motility: Scavenger Receptor Functions at the Interface of Homeostasis and Host Defense."
32. IIDR Colloquium. "A Breath of Fresh Air: Preventing pneumonia in older adults." May 30, 2014. McMaster University.
33. The American Association of Immunologist Annual Meeting -Immunology 2014. May 2-6, 2014. Pittsburgh, Pennsylvania. "Scavenger receptors and host-pathogen interactions."
34. iSci Symposium Keynote Speaker. McMaster University. Apr 3, 2014. "Pneumo a no no: Preventing pneumonia in older adults."
35. Biology of Acute Respiratory Infection Gordon Research Conference. Feb 23-28, 2014. Lucca Italy. Invited speaker, "Pneumonia, inflammation and age."
36. Lung Association. Better Breathing Conference. Pfizer sponsored keynote lecture "Age, inflammation and pneumonia." February 2, 2014
37. McMaster University. Department of Chemistry & Chemical Biology Seminar Series. "Does macrophage metabolism decrease with age?" January 7th, 2014.
38. Vaccine Preventable Disease Program at Hamilton Public Health Services. November, 21, 2013. Hamilton. "Vaccine Hesitancy – why has the public turned against vaccines?"
39. University of Western Ontario Department of Microbiology & Immunology Invited Speakers Series. "Macrophage phagocytosis is required for control of nasopharyngeal colonization." November 7th, 2013

40. McMaster Immunology Research Centre Infection & Immunity Seminar Series. May 29th, 2013. "Macrophages- my favourite cell."
41. Panel on the Status of Women in Science & Technology. The Canadian Science Policy Centre. Panel participant. April 23rd, 2013. <http://www.youtube.com/watch?v=18psL0ilZOk>
42. Macrophage Immunobiology, Current Research and Prospects. Kavli Royal Society International Centre U.K. April 13, 2013. "Macrophage scavenger receptors and immune defence in the upper respiratory tract."
43. MRC Centre for Inflammation Research Seminar Program. Edinburgh, U.K. April 12, 2013. "Interplay between chronic inflammation, age & anti-bacterial activity."
44. Molecular & Integrative Physiological Sciences seminar series. Harvard School of Public Health. Boston, U.S. March 26th, 2013. "Macrophage phagocytosis - old cells protecting old people."
45. Respiratory Research Rounds. Firestone institute. February 12th, 2013. "Phagocytosis & age-associated inflammation - an evolutionary approach."
46. Scavenger Receptors Nomenclature Workshop, Division of Allergy, Immunology, and Transportation, National Institute of Allergy and Infectious Diseases , National Institute of Health, Bethesda, Maryland. November 29 - 30, 2012. "Scavenger Receptors and Host-Pathogen Interactions."
47. Demystifying Medicine Seminar Series, McMaster University, November 5, 2012. "Pneumonia, still the old man's friend?"
48. Infection and Immunity Seminar Series, McGill University. October 25, 2012. "Aging gracefully with the pattern recognition receptors."
49. South-Western Ontario Pathogenesis Working Group meeting. University of Guelph. September 29, 2012. "Those "other" pattern recognition receptors: Phagocytic receptors in host defence to *Streptococcus pneumoniae*."
50. University of Calgary Invited Speaker. September 25, 2012. "The role of phagocytic receptors in recognition of *Streptococcus pneumoniae*."
51. Firestone Institute. St. Joe's Research Rounds. January 27, 2012. "Age-Associated Changes in Monocyte/Macrophage Function Predispose the Elderly to Infectious Disease."
52. Department of Microbiology & Immunology. Queen's University, Kingston. Jan 19, 2011. "Save the Grandparents! How an aging immune system predisposes the elderly to pneumonia."
53. Department of Pathobiology. University of Guelph. Invited speaker series. Jan 14, 2011. "Mechanisms of Immune Control of *Streptococcus pneumoniae* in the Upper Respiratory Tract".
54. Society for Leukocyte Biology/International Endotoxin Society Meeting. Vancouver. Oct 7, 2010. "Immunosenescent macrophages cannot control *Streptococcus pneumoniae* colonization, resulting in invasive pneumococcal disease"
55. Institute of Molecular Biology and Biochemistry (IBMB) Invited Speaker Series. "The Scavenger Receptors: Ancient Pattern Recognition Receptors essential for the innate immune response" University of Waterloo. January, 26, 2010.
56. Department of Chemical Engineering. Invited Speaker Series. McMaster University. Nov. 11, 2009 "Macrophage scavenger receptors: roles in adhesion, uptake & motility."
57. IIR Opening Symposium. McMaster University. Oct. 24, 2009. New insights into an ancient disease: A novel macrophage receptor essential for host defence towards tuberculosis.
58. Bench-to-Bedside. McMaster University. Sept. 21, 2009. "Recurrent Pneumococcal Infections: A breach in Innate Immunity".
59. Bowdish, D. (2009), "Cationic peptides in innate immunity", in Gordon, S. (ed.), Innate Immunity: Host recognition and response in health and disease, The Biomedical & Life Sciences Collection, Henry Stewart Talks Ltd, London (online at <http://www.hstalks.com/?t=BL0612078-Bowdish>)
60. Invited speaker. The University of British Columbia. May 15, 2009`. "The Class A Scavenger receptors are associated with host defence to tuberculosis."

61. Tuberculosis and International Child Health meeting. Imperial College London, U.K., March 7, 2008. "Macrophage Receptors in Innate Immunity: The class A scavenger receptors in mycobacterial and neisserial disease."
62. The Karolinska Institute. Stockholm, Sweden. January 20, 2008. "Genetic analysis of the scavenger receptor, MARCO".
63. The Whitechapel Society Invited Speaker Series. London, U.K. June 14, 2007. "MARCO – a macrophage receptor associated with mycobacterial infection".
64. Invited Speaker Series. Trinity College, Dublin, Ireland. April 27, 2007. "MARCO – a macrophage receptor associated with mycobacterial infection"
65. 5th PhD Students Workshop. January 25, 2007. Riva del Gara, Italy. "Fundamental Concepts in Immunology"
66. 6th Annual Meeting of the Canadian Society of Microbiology. June, 21, 2006. "LL-37, a host defence peptide with immunomodulatory properties".
67. Invited Speaker Series. University of Gothenburg, Sweden. March 3, 2006. "LL-37, a human host defence peptide with immunomodulatory properties"
68. Innate Immunity in Human Disease: BC Research Institute for Children's & Women's Health, February, 1, 2005. "LL-37 is a host defence peptide which interacts directly with monocytes & epithelial cells and modulates the innate immune response"
69. 8th Biennial Conference of the International Endotoxin Society, Kyoto, Japan, November 15-18, 2004. "The host defence peptide LL-37 is a multi-functional immunomodulator"
70. International Symposium SFB 617 – Molecular Mechanisms of Epithelial Defense, Kiel, Germany, June 11-13, 2004 "The Involvement of Peptides in Host Defense against Infections."

Community Engagement/Knowledge translation presentations (Invited):

- 1 McMaster Children's University. April 22, 2017. "Who's got more cooties, boys or girls?"
- 2 Amica Retirement Community. December 12, 2013. "Health & the aging Immune system". With Dessi Loukov.
- 3 McMaster Undergraduates in Research Association. December 1, 2016. "Opportunities for undergraduates in research".
- 4 Lung Association Pop-up Park "Take a Breather" event. November 3, 2016. "Why I'm Taking a Breather with the Lung Association."
- 5 PROSPECT (Probiotics for prevention of infection clinical trial) retreat. "The immunology of frailty and implications in the ICU". October, 3, 2016. Talk for research co-ordinators, nurses and PIs of the PROSPECT clinical trial. Gravenhurst, ON.
- 6 Hamilton Association of Arts, Literature and Science. "Age, infection and inflammation". September 10, 2016.
- 7 Public outreach event at Amica retirement community. "Age, infection and inflammation". July 12, 2016.
- 8 Deputation for the Standing Committee on Social Policy on Bill 41 – "The Lung Health Act will benefit older adults." Queen's Park, Toronto, ON. June 6, 2016.
- 9 The Human Book event, "Careers" edition. Halton District School Board. May 4, 2016.
 - At this event I was a "Human Book". Participants could check me out for 20 min intervals and ask me questions about science or research. Media coverage by the radio station Y108. <http://www.hdsb.ca/library/docs/HumanLibrary.pdf>
- 10 The Cerebral Café – a discussion of Death & Disease. Hamilton, ON with Drs Ellen Badone, Megan Brickley and Ms Rochelle Martin.
- 11 Ontario Lung Association – Breathe Gala. January 28th, 2016. I was the MC for the major fundraising event for the Ontario Lung Association. This evening raised >\$168,000 to support lung health research in Ontario.

- 12 Interview with Chatelaine magazine “8 things you can do every day to avoid the flu”. December 2015.
<http://www.chatelaine.com/health/flu-free-guide-immune-system/>
- 13 Lobby day in support of Bill 41 “The Lung Health Act”. Queen’s Park, Toronto, ON. November 30, 2015
 - I, and some of my trainees, met with MPPs including Speaker of the House, MPP Dave Levac on the importance of establishing a Lung Health Act for Ontarians.
- 14 Interview in which I discuss the benefits of vaccination for older adults on [Metro Morning podcast, Thu Nov 12, 2015, Jfrom CBC Radio Toronto \(Highlights\). Released: 2015. Track 1. Genre: Podcast.](#) and on London AM 960 The Pulse with Devon Peacock (airdate: Nov 13, 2015) click [here](#).
- 15 Ontario Lung Association/Firestone Respiratory Health Institute joint presentation & fundraiser. “Introducing the Breathing as One campaign”. October,26, 2015
- 16 “Lung Health is Good Health in Older Adults”. Presentation hosted by the Lung Association for the Investors Group. August 25, 2015.
- 17 Research2Reality social media campaign. Research2Reality is a groundbreaking initiative that shines a spotlight on world-class scientists engaged in innovative and leading edge research in Canada. This video series is continually updated to celebrate the success of researchers who are establishing the new frontiers of science and to share the impact of their discoveries with the public. My video is featured here...<http://research2reality.com/videos/immune-systems/>
- 18 “Lung Health is Good Health in Older Adults”. Presentation to Hamilton Probus club. April 14, 2015.
- 19 “My career path as a scientist”. Westdale High School- Career day. Hamilton, Ontario. March 31, 2015.
- 20 Lung Association Breathe Gala. Interview in support of lung health. January 29, 2015.
- 21 Café Scientifique “Breathing Easy: Lung Health is Good Health for Older Adults”. Public event co-sponsored by the Ontario Lung Association and the Canadian Longitudinal Study of Aging. Hamilton, Ontario. November 27th, 2014.
- 22 Ontario Lung Association Board meeting. “Aging and Lung Health – spreading the word.” Toronto, ON. October 24, 2014.
- 23 McMaster Undergraduates in Research Association (MURSA). October 22, 2014. “Undergraduate opportunities in Research”
- 24 Presentation of donation from Gamma-Dynacare to the Lung Association. “Lung Health is Good Health in Older Adults” July 16, 2014
- 25 PROSPECT trial mechanistic sub-study retreat. “What are endotoxins and cytokines?” June 9, 2014.
- 26 Lung Association Webinar. “A Breath of Fresh Air: Preventing Pneumonia in Older Adults”. April 14, 2014.
- 27 MIRC Trainee Association Event. August 12, 2013. “Choosing a post-doctoral position, in Canada or overseas.”
- 28 Café Scientifique. Canadian Human Immunology Network. Hamilton, ON, April 26th, 2013. Panel speaker. “Vaccines: Truths and Myths.”
- 29 FHS Post-doctoral fellow association. June 5, 2013. “Advice on applying for a faculty position.”
- 30 Presentation for the Hamilton chapter of CAGIS (Canadian Association of Girls in Science). McMaster University. March 7th 2013. “Good germs/Bad germs.”
- 31 Biomedical Leadership conference. University of Guelph. January, 26th, 2013. “My career path: From McMaster & back again.”
- 32 McMaster Undergraduates in Research Association (MURSA). October 12, 2012. “Undergraduate opportunities in Research”