Academic appointments

2016 – 2021 Assistant Professor
2021 – present Associate Professor
Department of Microbiology and Immunology, Faculty of Medicine

Work experiences

2010 – 2015 Postdoctoral Fellow
Department of Molecular Biology, Massachusetts General Hospital and
Department of Genetics, Harvard Medical School
Supervisor: Dr. Frederick Ausubel

2004 – 2006 Research Technician, University of Waterloo
Supervisor: Dr. Brendan McConkey

Educations

2006 – 2010 **Ph.D., Department of Biology, University of Waterloo**
Thesis title: "Proteomic analyses of plant-bacterial interactions"
Supervisors: Dr. Bernard Glick and Dr. Brendan McConkey

2002 – 2004 **M.Sc., Department of Biology, University of Waterloo**
Thesis title: "Transcriptional regulation of ACC deaminase gene expression in *Pseudomonas putida* UW4"
Supervisor: Dr. Bernard Glick

1998 – 2002 **B.Sc., Wuhan University, Wuhan, China**

Peer-reviewed grants

2023 – 2028 NSERC Discovery Grant. "Unravel the role of quorum sensing in driving plant-microbial interactions." $260,000.

2023 – 2023 Faculty of Medicine Conference Grant. "Tackling antimicrobial resistance – surveillance, prevention, and new treatments." $5,000.

2022 – 2024 New Frontiers in Research Fund (NFRF), Special Call. "A novel field-based surveillance approach for antimicrobial resistance for pandemic preparedness." $237,970.

2022 – 2024 Early Career Award, Beatrice Hunter Cancer Research Institute. "RACK1 regulates stress granule dynamics." $100,000.

2021 – 2023 New Frontiers in Research Fund (NFRF), Exploration Competition. "Creating a breakthrough technology to overcome antibiotic resistance." $250,000.

2019 – 2024 Canadian Institutes of Health Research (CIHR), Project Grants Program. "*Pseudomonas* protease promotes chronic inflammation and immune evasion." $963,900.

2019 – 2020 Natural Sciences and Engineering Research Council of Canada (NSERC), Research Tools and Instruments (RTI). "High throughput single cell imaging flow cytometry platform." $149,999

2019 – 2020 Ocean Frontier Institute, Seed Grants. "Biodegradable plastic production by the novel marine heterotrophic diazotroph *Thalassolituus halegoni.*" $20,000

2019 – 2019	NSERC, Engage Grant. “Effects of iron chelator on dynamics of bacterial biofilm.” $25,000
2018 – 2021	Nova Scotia Health Research Foundation (NSHRF), Establishment Grant. “Fighting chronic *Pseudomonas aeruginosa* infection in cystic fibrosis patients.” $150,000
2018 – 2019	Canadian Institutes of Health Research (CIHR), Operating Grants Program. “Boosting host immunity against *Pseudomonas aeruginosa* lung infection.” $251,749
2018 – 2019	Lung Association Nova Scotia, Legacy Grant. “Boosting host immunity against *Pseudomonas aeruginosa* lung infection.” $25,000
2018 – 2018	Canada Foundation of Innovation (CFI), John Evans Leaders Fund (JELF). “System biology characterization of host-microbe interactions.” $278,000
2017 – 2018	Beatrice Hunter Cancer Research Institute, Seed Grant. “Characterization of the role of RACK1 in lung cancer.” $10,000
2017 – 2018	NSHRF, Catalyst Grant. “Tackling pathogen biofilm formation.” $50,000
2017 – 2017	Dalhousie Medical Research Foundation (DMRF), Equipment Grant. “Imaging markers in stress responses.” $28,910
2017 – 2017	NSERC, Engage Grant. “Identification of immune elicitors from seaweed extract.” $22,160.
2017 – 2019	Springboard, Proof of Concept award. “Developing infection models for treating biofilm on medical equipment.” $25,000
2016 – 2022	NSERC, Discovery Grants Program. “Characterization of plant-bacterial interactions.” $250,000
2016 – 2018	Cystic Fibrosis Canada, New Investigator Award. “Characterization of *Pseudomonas aeruginosa* antibiotics persistence mechanisms.” $198,000

Awards

The President’s Research Excellence Awards for Emerging Investigators, 2020
The CIHR Bhagirath Singh Early Career Prize in Infection and Immunity, 2019
Faculty of Medicine Award for Excellence in Medical Research, 2018
Martha Morton Early Career Investigator Award, 2016-2018
Harvard Medical School Tosteson Medical Research Award, 2015
Banting Postdoctoral Fellowship, 2012-2014
NSERC Postdoctoral Fellowship, 2010-2012
W.B. Person Medal for outstanding PhD thesis, 2010
Best Teaching Assistant of the Year, 2007

Publications

a. Publications from Dalhousie University (*corresponding author)

1. Zhang W., Liang G., **Cheng Z.,** Guo Y., Jiang B., Liu T, Liao W., Lu Q., Wen G., Zhang T, Luo Q. (2023) *Flos populi* (male inflorescence of Populus tomentosa Carrière) aqueous extract suppresses *Salmonella* Pullorum infection by affecting T3SS-1. Pathogens 12:790.

2. Zhang T., Nickerson R., Zhang W., Peng X., Shang Y., Zhou Y., Luo Q., Wen G., **Cheng Z.** (2023) The impacts of animal agriculture on One Health – zoonosis, antimicrobial resistance, and beyond. One Health. Under review.

3. O'Brien C.L., Spencer S., Jafari N., Huang A.J., Scott A.J., **Cheng Z.,** Leung B.M. Modeling cystic fibrosis chronic infection using engineered mucus-like hydrogels. Communications Biology Under review.

4. Dou J., Wang Z., Li L., Lu Q., Ling X., Jin X., **Cheng Z.,** Zhang T., Shao H., Zhai X., Luo Q. (2023) Multiplex quantitative polymerase chain reaction for rapid differential detection of subgroup A, B, J and K avian leukosis viruses. Viruses 15:1789.

5. Valenzuela K.N., Farrashzadeh E., Chang Y.-Y., Shi Y., Raudonis R., Leung B.M., Rohde J.R., Enninga J., **Cheng Z.** (2023) RACK1 promotes *Shigella flexneri* actin-mediated invasion, motility and cell-to-cell spreading. iScience. 26: 108216.

6. Grandy S., Scur M., Dolan K., Nickerson R., **Cheng Z.** (2023) Using model systems to unravel host-*Pseudomonas aeruginosa* interactions. Environmental Microbiology 25: 1765–1784.

7. Zhang X., Hu Y., **Cheng Z.,** Archibald JM. (2023) HSDecipher: A pipeline for comparative genomic analysis of highly similar duplicate genes in eukaryotic genomes. STAR Protocols 4 (1):102014

8. Wijesundara N.M., Lee S.F., **Cheng Z.,** Davidson R., Langelaan D.N., and Rupasinghe H.P.V. (2022) Bactericidal activity of carvacrol against Streptococcus pyogenes involves alteration of membrane fluidity and integrity through interaction with membrane phospholipids. Pharmaceutics 14:1992.

9. Grandy S., Raudonis R., **Cheng Z.*** (2022) The identification of *Pseudomonas aeruginosa* persisters using flow cytometry. Microbiology 168 (10):001252.

10. Cook J., Hui J., Zhang J., Kember M., Berrue F., Zhang J., and **Cheng Z.*** (2022) Production of quorum sensing-related metabolites and phytoalexins during *Pseudomonas aeruginosa-Brassica napus* interaction. Microbiology 168 (8):001212.

11. Luo Y., Zhang W., Cheng Y., Lu Q., Guo Y., Wen G., Shao H., **Cheng Z.**, Luo Q., and Zhang T. (2022) Droplet digital PCR-based detection and quantification of GyrA Thr-86-Ile mutation based fluoroquinolone-resistant *Campylobacter jejuni*. Microbiology Spectrum 10 (2):e02769-21.

12. Vasquez-Rifo A., Cook J., McEwan D.L., Shikara D., Ausubel F.M., Di Cara F., **Cheng Z.*** (2022) ABCDs of the relative contributions of *Pseudomonas aeruginosa* quorum sensing systems to virulence in diverse non-vertebrate hosts. mBio 13 (2):e00417-22.

13. Kember M., Grandy S., Raudonis R.*, **Cheng Z.*** (2022) Non-canonical host intracellular niche links to new antimicrobial resistance mechanism. Pathogens 11(2):220.

14. Wijesundara N.M., Lee S.F., Davidson R., **Cheng Z.,** and Rupasinghe V.H.P. (2022) Carvacrol suppresses inflammatory biomarkers production by lipoteichoic acid and peptidoglycan-stimulated human tonsil epithelial cells. Molecules 14(3):503.

15. Cook J., Douglas G., Zhang J., Glick B.R., Langille M., Liu K.-H., and **Cheng Z.*** (2021) *Pseudomonas aeruginosa* activates the expression of the three main defense-related phytohormone signaling pathways in *Brassica napus* seedlings. Innate Immunity 27(2):143-157.

16. Zhang J., Cook J., Nearing J.T., Zhang J., Glick B.R., Langille M.G.I., and **Cheng Z.*** (2021)

Harnessing the plant microbiome to promote the growth of agricultural crops. Microbiological Research 245:126690.

17. Wijesundara N.M., Lee S.F., **Cheng Z.,** Davidson R., and Rupasinghe V.H.P. (2021) Carvacrol exhibits rapid bactericidal activity against *Streptococcus pyogenes* through cell membrane damage. Scientific Reports 11(1):1487.

18. Daboor S., Raudonis R., and **Cheng Z.*** (2021) Characterizations of the viability and gene expression of dispersal cells from *Pseudomonas aeruginosa* biofilms released by alginate lyase and tobramycin. PLoS One 16(10):e0258950.

19. Daboor S., Rohde, J.R., and **Cheng Z.*** (2021) Disruption of the extracellular polymeric network of *Pseudomonas aeruginosa* biofilms by alginate lyase enhances pathogen eradication by antibiotics. Journal of Cystic Fibrosis 20(2):264-270.

20. Omar T., Ziltenera P., Chamberlaina E., **Cheng Z.,*** and Johnston B.* (2020) Role of γδT cells in *Pseudomonas aeruginosa* lung infection. Infection and Immunity 88(6):e00171-20.

21. Pang Z., Raudonis R., McCormick C., and **Cheng Z.*** (2020) Early growth response 1 deficiency protects host against *Pseudomonas aeruginosa* lung infection. Infection and Immunity 88(1):e00678-19.

22. Vasquez-Rifo A., Veksler-Lublinsky I., **Cheng Z.,** Ausubel F. M., and Ambros V. (2019) The *Pseudomonas aeruginosa* accessory genome elements influence virulence towards *Caenorhabditis elegans*. Genome Biology 20:270.

23. Lin P., Pu Q., et al., **Cheng, Z.,** Lan L., Jiang J., and Wu M. (2019) High-throughput screen reveals sRNAs regulating crRNA biogenesis by targeting CRISPR leader to repress Rho termination. Nature Communications 10:3728.

24. Pang Z., Raudonis R., Glick B.R., Lin T.J., and **Cheng Z.*** (2019) Antibiotic resistance in *Pseudomonas aeruginosa*: mechanisms and alternative therapeutic strategies. Biotechnology Advances 37(1): 177-192.

25. Daboor S., Raudonis R., Cohen A., Rohde, J.R., and **Cheng Z.*** (2019) Marine bacteria, a source for alginolytic enzyme to disrupt *Pseudomonas aeruginosa* biofilms. Marine Drugs 17(5):1-22.

26. Yan C., Fullsack P., Huang W.-Y., Boudreau J., **Cheng Z.,** and Wang J. (2019) IL-17RA deletion predicts high-grade colorectal cancer and poor clinic outcomes. International Journal of Cancer 145(2):548-558.

27. Pringle E.S., McCormick C., and **Cheng Z.*** (2018) Polysome profiling analysis of mRNAs and associated proteins engaged in translation. Current Protocols in Molecular Biology 125(1):e79.

28. Bain W., Olonisakin T., et al., **Cheng Z.,** and Lee J.S. (2018) Platelets protect against infection-induced lung injury by inhibiting caspase 3-mediatedlung epithelial cell death. Blood Advances 3(3):432-445.

29. Pang Z., Junkins R.D., MacNeil A.J., McCormick C., **Cheng Z.,** and Lin T.J. (2018) Regulator of calcineurin 1 differentially regulates TLR-Dependent MyD88 and TRIF signaling pathways. PLoS One 13(5): 1-13.

30. Qu Y., Olonisakin T., Bain W., Zupetic J., Brown R., Hulver M., Xiong Z., Shanks, R.M.Q., Bomberger J.M., Cooper V.S., Zegans M.E., Ryu H., Han J., Pilewski J., Ray A., **Cheng Z.,** Ray P., and Lee

J.S. (2018) Thrombospondin-1 protects against pathogen-induced lung injury by limiting extracellular matrix proteolysis. Journal of Clinical Investigation Insight 3(3): 1-16.

31. Cook J., Zhang J., Norrie J., and **Cheng Z.*** (2018) Seaweed extract activates innate immune responses in *Arabidopsis thaliana* and protects host against bacterial pathogens. Marine Drugs 16: 1-12.

32. Pang Z., Junkins R.D., MacNeil A.J., McCormick C., **Cheng Z.,** Chen W.M., and Lin T.J. (2017) The calcineurin-NFAT axis contributes to host defense during *Pseudomonas aeruginosa* lung infection. Journal of Leukocyte Biology 102(6):1461-1469.

33. Finlayson-Trick E., Getz L.J., Slaine P.D., Thornbury M., Lamoureux E., Cook J., Langille M.G.I., Murray L.E., McCormick C., Rohde J.R., and **Cheng Z.*** (2017) Taxonomic differences of gut microbiomes drive cellulolytic enzymatic potential within hind-gut fermenting mammals. PLoS One 12(12):e0189404.

34. **Cheng Z.*** (2016) A *Pseudomonas aeruginosa*-secreted protease modulates host intrinsic immune responses, but how? BioEssays 38(11):1084-1092.

b. Previous publications

35. **Cheng Z.,** Li J.-F., Niu Y., Zhang X.-C., Woody O.Z., Xiong Y., Djonovic S., Millet Y., Bush J., McConkey B.J., Sheen J., and Ausubel F.M. (2015) Pathogen-secreted proteases activate a novel plant immune pathway. Nature 521:213-216.

36. Zhang X.-C., Millet Y., **Cheng Z.,** Bush J., and Ausubel F.M. (2015) SGT1b/HSP70/HSP90 chaperone complexes play an essential role in jasmonate signaling in *Arabidopsis*. Nature Plants 1(5):Article number 15049.

37. Benedetti M., Pontiggia D., Raggi S., **Cheng Z.,** Scaloni F., Ferrari S., Ausubel F.M., Cervone F., and De Lorenzo G. (2015) Plant immunity triggered by engineered release of oligogalacturonides, damage-associated molecular patterns. Proceedings of the National Academy of Sciences 112(17):5533-5538.

38. Mammarella N.D., **Cheng Z.,** Fu Z.-Q., Daudi A., Bolwell G.P., Dong X., and Ausubel F.M. (2015) Apoplastic peroxidases are required for salicylic acid-mediated defense against *Pseudomonas syringae*. Phytochemistry 112:110-121.

39. Jiang W., **Cheng Z.,** McConkey B.J., and Glick B.R. (2013) Investigating the role of protein UnkG from *Pseudomonas putida* UW4 in the ability of the bacterium to facilitate plant growth. Current Microbiology 66:331-336.

40. Duan J., Jiang W., **Cheng Z.,** Heikkila J.J., and Glick B.R. (2013) The complete genome sequence of the plant growth-promoting bacterium *Pseudomonas putida* UW4. PLoS One 8(3):e58640.

41. Li J., McConkey B.J., **Cheng Z.,** Guo S., and Glick B.R. (2013) Identification of plant growth-promoting bacteria-responsive proteins in cucumber roots under hypoxic stress using a proteomic approach. Journal of Proteomics 84:119-131.

42. **Cheng Z.,** Woody O.Z., McConkey B.J., and Glick B.R. (2012) Combined effects of the plant growth-promoting bacterium *Pseudomonas putida* UW4 and salinity stress on the *Brassica napus* proteome. Applied Soil Ecology 61:255-263.

43. Daudi A., **Cheng Z.,** O'Brien J., Mammarella N., Khan S., Ausubel F.M., and Bolwell G.P. (2012) The apoplastic oxidative burst peroxidase in *Arabidopsis* is a major component of pattern triggered immunity. Plant Cell 24:275-287.

44. **Cheng Z.,** Woody O.Z., Glick B.R., and McConkey B.J. (2010) Characterization of plant-bacterial interactions using proteomic approaches. Current Proteomics 7:244-257.

45. **Cheng Z.,** McConkey B.J., and Glick B.R. (2010) Proteomic studies of plant-bacterial interactions. Soil Biology and Biochemistry 42:1673-1684.

46. Sun Z., **Cheng Z.,** Taylor C., McConkey B.J., and Thompson J.E. (2010) Apoptosis induction by eIF5A involves activation of the intrinsic mitochondrial pathway. Journal of Cellular Physiology 223:798-809.

47. Doxey A.C., **Cheng Z.,** Moffatt B.A., and McConkey B.J. (2010) Structural motif screening reveals a novel, highly conserved carbohydrate-binding surface in the pathogenesis-related protein PR-5d. BMC Structural Biology 10:23.

48. **Cheng Z.,** Woody O.Z., Song J., Glick B.R., and McConkey B.J. (2009) Proteome reference map for the plant growth-promoting bacterium *Pseudomonas putida* UW4. Proteomics 9: 4271-4274.

49. **Cheng Z.,** Wei Y.C., Sung W.W.L., Glick B.R., and McConkey B.J. (2009) Proteomic analysis of the response of the plant growth-promoting bacterium *Pseudomonas putida* UW4 to nickel stress. Proteome Science 7:18.

50. **Cheng Z.,** Duan J., Hao Y., McConkey B.J., and Glick B.R. (2009) Identification of bacterial proteins mediating the interactions between *Pseudomonas putida* UW4 and *Brassica napus* (canola). Molecular Plant-Microbe Interactions 22:686-694.

51. Sun Y., **Cheng Z.,** and Glick B.R. (2009) The presence of a 1-aminocyclopropane-1-carboxylate (ACC) deaminase deletion mutation alters physiology of the endophytic plant growth-promoting bacterium *Burkholderia phytofirmans* PsJN. FEMS Microbiology Letters 296:131-136.

52. **Cheng Z.**, Duncker B.P., McConkey B.J., and Glick B.R. (2008) Transcriptional regulation of ACC deaminase gene expression in *Pseudomonas putida* UW4. Canadian Journal of Microbiology 54: 128-136.

53. Doxey A.C., **Cheng Z.**, and McConkey B.J. (2008) Discrimination of insoluble carbohydrate binding proteins and their binding sites using a 3D motif detection method. in Proceedings of the IEEE International Conference on Bioinformatics and Biomedicine (BIBM, November 2008). Philadelphia, Pennsylvania, USA. Page 207-213.

54. **Cheng Z.**, Park E., and Glick B.R. (2007) 1-Aminocyclopropane-1-carboxylate (ACC) deaminase from *Pseudomonas putida* UW4 facilitates the growth of canola in the presence of salt. Canadian Journal of Microbiology 53: 912-918.

55. Glick B.R., **Cheng Z.**, Czarny J., and Duan J. (2007) Promotion of plant growth by ACC deaminase-producing soil bacteria. European Journal of Plant Pathology 119: 329-339.

56. Glick B.R., Todorovic B., Czarny J., **Cheng Z.**, Duan J., and McConkey B.J. (2007) Promotion of plant growth by bacterial ACC deaminase. Critical Reviews in Plant Sciences 26: 227-242.

Patent

U.S. Patent (joint inventor). Patent number: **US 8445638 B2**

Patent title: Use of a truncated eIF-5A1 polynucleotide to induce apoptosis in cancer cells.

Selected Presentations (*corresponding author)

1. **Zhenyu Cheng.** Novel strategies for *Pseudomonas aeruginosa* biofilm disruption. 2023. Invested speaker at the 18th National Cystic Fibrosis Canada Broken Arrow National Conference, Toronto, Canada

2. **Zhenyu Cheng.** *Shigella flexneri* requires the host protein RACK1 to efficiently exploit actin cytoskeleton. 2021. University of Waterloo, Department of Biology seminar, Waterloo, Canada

3. **Zhenyu Cheng**. Fight *Pseudomonas aeruginosa* infections: from plants to macrophages. Center for Comparative Genomics & Evolutionary Biology monthly meeting. 2020. Halifax, Canada

4. Zheng Pang, **Zhenyu Cheng.*** Early growth response 1 deficiency protects the host against *Pseudomonas aeruginosa* lung infection. Annual Conference of the American Association of Immunologists, 2019. San Diego, USA

5. Karla Valenzuela, **Zhenyu Cheng.*** RACK1 regulates *Shigella flexneri* entry and intracelluar motility. American Society of Microbiology Annual meeting, 2019. San Francisco, USA

6. Toka Omar, **Zhenyu Cheng.*** *Pseudomonas* aeruginosa activates the unfolded protein response in mammalian cells. Canadian Society of Microbiology Annual meeting, 2019. Sherbrooke, Quebec, Canada

7. Karla Valenzuela, **Zhenyu Cheng.*** Silencing RACK1 inhibits *Shigella flexneri* motility within HeLa cells. 14th International Conference on Molecular Epidemiology and Evolutionary Genetics of Infectious Diseases, 2018. Sitges, Spain

8. **Zhenyu Cheng**. RACK1-mediated immune signaling for detection of *Pseudomonas aeruginosa*-secreted protease. Department of Physiology and Biophysics seminar, 2017. Halifax, Canada

9. Jamie Cook, **Zhenyu Cheng.*** Characterization of the antipseudomonal effects of seaweed extracts. Canadian Society of Microbiology Annual meeting, 2017. Waterloo, Canada

10. **Zhenyu Cheng.** *Pseudomonas aeruginosa* biofilm and antibiotic persistence. QEII Infectious Disease Group Research Round meeting, 2017. Halifax, Canada

11. **Zhenyu Cheng.** Implication of the studies of broad-host range pathogen, *Pseudomonas aeruginosa*. First International Young Scholars Forum of Tongji Hospital, 2016. Wuhan, China

12. **Zhenyu Cheng.** Protease-Mediated Innate Immunity in *Arabidopsis*. 2016. University of Waterloo, Department of Biology seminar, Waterloo, Canada

13. **Zhenyu Cheng.** Isolation of marine bacterial strains. Dalhousie University, Department of Biology Seminar, 2016. Halifax, Canada

14. Dalhousie iGEM team 2016, **Zhenyu Cheng.*** Biofuel productions set to spike. International Genetic Engineering Machinery Jamboree, 2016. Bronze Medal. Boston, USA

15. **Zhenyu Cheng.** Evolutionary Perspective of Host-Bacterial Interactions. Plant in New England, 2015. Boston, USA

16. **Zhenyu Cheng.** Characterization of a novel immune signaling pathway in *Arabidopsis*. Monthly Host Pathogen Hospital Meeting, 2014. Boston, USA

17. **Zhenyu Cheng.** Using proteomic tools to characterize PGPB and rhizosphere. 8th International PGPR Workshop, 2009. Portland, USA

Media and Interviews

1. Maritimers helping in China's coronavirus outbreak. CTV News Program. 2020
   https://atlantic.ctvnews.ca/maritimers-helping-in-china-s-coronavirus-fight-1.4784244

2. Cystic Fibrosis awareness month, TV News Program, CBC, Global News. 2020
   http://globalnews.ca/news/2688881/cystic-fibrosis-research-providing-hope-for-fall-riverfamily/

3. Cystic Fibrosis award, News Video Network, AllNovaScotia, CTV. 2017
   http://atlantic.ctvnews.ca/video?clipId=852680&binId=1.1145729&playlistPageNum=1

4. Plant immune pathways, Keener A, Interview by The Scientist magazine. 2015
   http://www.the-scientist.com/?articles.view/articleNo/43032/title/New-Immunity/

Academic and Administrative Services

Reviewer for the following grant agencies:

CIHR, Microbiology & Infectious Diseases (MID) (review panel) F2022, S&F2023, S2024
Hong Kong Research Council, 2023
Cystic Fibrosis Canada, (review panel) 2022, 2023
Graduate Women in Science Fellowship, 2021
Lung Association Nova Scotia Legacy Grant, 2021
US-Israel Agriculture Joint Grant, 2017, 2020
Beatrice Hunter Cancer Research Institute (BHCRI) Breast Cancer Research Grant, 2018
NSERC Discovery Grant, 2019, 2020, 2021, 2023
Cystic Fibrosis Canada Operating Grant and student scholarships, 2018, 2019
Ontario research fund – Research Excellence, 2019

Editor and Review for the following journals (last 5 years):

Annals of New York Academy of Sciences
Current Microbiology
Environmental Microbiology
FEMS Microbiology Letters
Frontiers in Bioengineering and Biotechnology (Guest Editor of a Special Topic)
Frontiers in Cellular and Infection Microbiology (Editorial Board Review Editor)
Frontiers in Microbiology (Editorial Board Review Editor)
International Journal of Molecular Sciences
Journal of Plant Growth Regulation
Journal of Proteome Research
Journal of Soil Science and Plant Nutrition
Microbiome
Pathogens (Guest Editor of a Special Topic)
Plant and Soil
PLoS One
Proteome Science
PNAS
Scientific Reports
The ISEM Journal

Virulence

Invited reviewer and judge for the following academic events:
Research Day Conference, Department of Pathology, 2018, 2019
Research Symposium, BHCRI, 2017-2020
Scientific Merit Review for the University Committee in Lab Animals, 2017

Network and Society Affiliations:
Member, Canadian Society of Microbiologists 2016-present
Member, American Society for Microbiology, 2018-present
Member, CIHR College of Reviewers, 2019-present
Member, CIHR Institute of Infection and Immunity, New Investigator Forum Planning Committee, 2023
Member, I3V Wave 1 Team, 2020-present
Member, Institute for Comparative Genomics, 2019-present
Member, Canadian Center for Vaccinology, Discovery Group, 2019-present
Member, Atlantic Cystic Fibrosis Translational Research Group, 2017-present
Associate Member, Beatrice Hunter Cancer Research Institute, 2016-present

Dalhousie Committees:
Elected Members-at-Large, Faculty Council, Faculty of Graduate Studies, 2020-2026
Membership Committee, I3V Wave 1 Team, 2021- (Chair 2022)
Research Advisory Committee, Scholarship Reviewing Committee, Faculty of Medicine, 2018-2021
Research Advisory Committee, CORES Scientific Advisory Committee, Faculty of Medicine, 2023-2026
Executive Committee, Department of Microbiology and Immunology, 2017, 2018, 2020-2024
Graduate Studies Committee (Associate Chair), Department of Microbiology and Immunology, 2018-2021, Chair 2021-2024
Associate Graduate Coordinator, Department of Microbiology and Immunology, 2018-2021; Graduate Coordinator, 2021-
Faculty Search Committee, Department of Microbiology and Immunology, 2019, 2020, 2021, 2023
Faculty Search Committee, Department of Applied Oral Science, Faculty of Dentistry, 2020, 2023
Faculty Search Committee, Department of Biochemistry & Molecular Biology, 2024
Department Head Search Committee, Department of Microbiology and Immunology, 2021
Oversight Committee, FoM CORES Cellular & Molecular Digital Imaging (CMDI) Facility

Research Uptake Strategies and Community Engagement
Organizer, Faculty of Medicine Antimicrobial Resistance Conference, 2023
Planning Committee member for ID Research Day/CCfV Symposium. 2021-
Facilitator, Science Fair Project of West Hants Middle School students, 2016
Organizer, Educational tour by Horton High School International Baccalaureate students, 2017
Organizer, Department of Microbiology and immunology Research Retreat, 2019
Coordinator, Faculty of Medicine, Graduate Research Day, 2020

Teaching

2019, Development and coordination of capstone course: MICI4119 Host Pathogen Interactions

2017 – 2018, Instructor for the following courses:
MICI5029/5049 Advanced Topics in Microbial Pathogenesis
MICI4033/5033 Advanced Microbial Genetics
MICI3119 Physiology of Prokaryotic Cell
PATH5067 Directed Study

2016, Lead Faculty for the Dalhousie iGEM project

Trainees supervision

2023 – present Rhea Nickerson, technician
2021 – present Shannen Grandy (NSGS, RNS)
2020 – present Katie Dolan (CGS-D, NSGS)
2019 – present Yunnuo Shi, Ph.D. (Nova Scotia Graduate Scholarship, BHCRI CRTP award)
2017 – present Zhong Sun, postdoctoral fellow
2016 – present Said Daboor, postdoctoral fellow
2016 – present Renee Raudonis, technician
2021 – 2023 Michaela Kember (CRTP, NSGS)
2021 – 2022 Michal Scur, Postdoc
2019 – 2021 Dave Allan, technician
2019 – 2019 Elmira Farrashzadeh (NSERC USRA award)
2017 – 2020 Toka Omar, M.Sc. (Cystic Fibrosis Canada scholarship)
2016 – 2022 Karla Valenzuela, Ph.D. (Chile PhD Scholarship Abroad)
2016 – 2019 Zheng Pang, Ph.D. (BHCRI CRTP award)
2016 – 2018 Jamie Cook, M.Sc. (Department graduate scholarship)
2016 – 2017 Jin Duan, postdoctoral fellow
2016 – 2017 Anna Dunn-Suen, honours (Governor General's All-Canadian Commendation)
2016 – 2017 Emma Finlayson-Trick, honours (Ron Carr Award, CRTP award

Graduate student thesis committee

2023 – present Maggie Hosmer, Ph.D. (supervisor: Dr. John Rohde)
2023 – present Valeriia Spirina, Ph.D. (supervisor: Dr. Denys Khaperskyy)
2023 – present Rajaswaminathan Vairavan, Ph.D. (supervisor: Dr. Sophie Stone, Biology)
2023 – present Andrew Smith, M.Sc. (supervisor: Dr. Brendan Leung, Applied Oral Science)
2022 – 2024 Sofia Lama, M.Sc. (supervisor: Dr. Brendan Leung, Applied Oral Science)
2022 – present Sarah Spencer, Ph.D. (supervisor: Dr. Brendan Leung, Applied Oral Science)
2020 – present Yizhu Mu, Ph.D. (supervisor: Francesca DiCara)
2020 – present Mengnan Xu, Ph.D. (supervisor: Dr. Xianpin Dong, Physiology & Biophysics) 2020 – 2023 Taylor Caddell, M.Sc. (supervisor: Dr. Craig McCormick)
2019 – present Kayle Dickson, M.Sc. (supervisor: Dr. Christian Lehmann)
2017 – 2023 Animamalar Mayavannan, Ph.D. (supervisor: Dr. Jun Wang)
2020 – 2022 Courtney O'Brian, M.Sc. (supervisor: Dr. Brendan Leung, Applied Oral Science)
2019 – 2022 Madeleine Stolz, M.Sc. (supervisor: Dr. Craig McCormick)
2018 – 2022 Jacob Nearing, Ph.D. (CRTP, supervisor: Dr. Morgan Langille)
2018 – 2020 Gavin Douglas, Ph.D. (supervisor: Dr. Morgan Langille)
2018 – 2020 Daniel Kim, M.Sc. (NSHRF scholarship, supervisor: Dr. Jong Sun Kim)
2017 – 2019 Eric Pringle, Ph.D. (CRTP-funded, supervisor: Dr. Craig McCormick)
2017 – 2019 Andra Sterea, M.Sc. (supervisor: Dr. Yassine El Hiani, Physiology & Biophysics)
2017 – 2019 Alexa Jollimore, M.Sc. (supervisor: Dr. Vathansa Rupasinghe, Biology)
2017 – 2019 Arthur Li, M.Sc. (supervisor: Dr. Sophie Stone, Biology)
2017 – 2019 Adam Aitchison, M.Sc. (CIHR scholarship, supervisor: Dr. Jong Sun Kim)
2016 – 2023 Nilu Wijesundara, Ph.D. (supervisor: Dr. Vathansa Rupasinghe, Biology)
2016 – 2019 Pramod Rathor, Ph.D. (supervisor: Dr. Balakrishnan Prithiviraj, Biology)
2016 – 2018 Lucas Jarche, M.Sc. (CRTP, NSERC scholarship, supervisor: Dr. John Rohde)