

MORGAN G. I. LANGILLE, PhD

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RECOGNITIONS

- 2016 – current: Canada Research Chair in Human Microbiomics (Tier II)

RESEARCH APPOINTMENTS

2014 – Current	Associate Professor, Department of Pharmacology	Dalhousie University Halifax, NS
2016 – Current	Cross-appointment, Dept. Microbiology & Immunology	Dalhousie University Halifax, NS
2014 – Current	Director, Integrated Microbiome Resource	Dalhousie University Halifax, NS
2011 – 2013	Post-Doctoral Fellow <ul style="list-style-type: none">• Supervisor: Dr. Robert Beiko• Funded as a CIHR Postdoctoral Fellow	Dalhousie University Halifax, NS
2009 – 2011	Post-Doctoral Fellow <ul style="list-style-type: none">• Supervisor: Dr. Jonathan Eisen• Funded by the Gordon and Betty Moore Foundation	UC Davis Davis, California

EDUCATION

2004 – 2009	Ph.D. Supervisor: Dr. Fiona Brinkman CIHR/MSFHR Bioinformatics Training Program Department of Molecular Biology and Biochemistry	Simon Fraser University Burnaby, BC, Canada
1999 – 2004	Bachelor's of Science (Biology)	University of New Brunswick Fredericton, NB, Canada
1999 – 2004	Bachelor's of Computer Science	University of New Brunswick Fredericton, NB, Canada

PUBLICATIONS

H-index: 30

Citations: >13,000

Published: 66

<https://scholar.google.ca/citations?user=jxThz9gAAAAJ&hl=en>

Trainees under my direct supervision are underlined

1. Dunn KA, Forbrigger Z, Connors J, Rahman M, Cohen A, Van Limbergen J, **Langille MGI**, Stadnyk AW, Bielawski JP, Penny S, MacDonald T, Kulkarni K (2021) “Gut bacterial gene changes following pegaspargase treatment in pediatric patients with acute lymphoblastic leukemia”, *Leukemia & Lymphoma*, 10.1080/10428194.2021.1953006.
2. Wright RJ, Bosch R, **Langille MGI**, Gibson MI, Christie-Oleza JA (2021) “A multi-OMIC characterisation of biodegradation and microbial community succession within the PET plastisphere”, *Microbiome*, 9:141.
3. Nearing JT, Comeau AM, **Langille MGI** (2021) “Identifying biases and their potential solutions in human microbiome studies”, *Microbiome*, 9:113.
4. Douglas GM, **Langille MGI** (2021) “A primer and discussion on DNA-based microbiome data and related bioinformatic analyses”, *Peer Community in Genomics*.
5. Sultan M, Nearing JT, Brown JM, Hyynh TT, Cruickshank BM, Lamoureaux E, Vidovic D, Dahn ML, Fernando W, Coyle KM, Giacomantonio CA, **Langille MGI**, Marcato P (2021) “An in vivo genome-wide shRNA screen identifies BCL6 as a targetable paclitaxel resistance mediator in breast cancer”, *Molecular Oncology*, doi:10.1002/1878-0261.12964.
6. Zhang J, Cook J, Nearing JT, Zhang J, Raudonis R, Glick BR, **Langille MGI**, Cheng Z (2021) “Harnessing the plant microbiome to promote the growth of agricultural crops”, *Microbiological Research*, 245, 126690.
7. Price GW, **Langille MGI**, Yurgel SN (2021) “Microbial co-occurrence network analysis of soils receiving short- and long-term applications of alkaline treated biosolids”, *Science of the Total Environment*, 751:141687
8. Cook J, Douglas GM, Zhang J, Glick BR, **Langille MGI**, Liu K, Cheng Z (2021) “Transcriptomic profiling of Brassica napus responses to *Pseudomonas aeruginosa*”, *Innate Immunity*, doi:10.1177/1753425920980512.
9. Dunn KA, Connors J, Bielawski JP, Nearing JT, **Langille MGI**, Van Limbergen J, Fernandez CV, MacDonald T, Kulkarni K (2020) “Investigating the gut microbial community and genes in children with differing levels of change in serum asparaginase activity during pegaspargase treatment for acute lymphoblastic leukemia”, *Leukemia & Lymphoma*, 927-936.
10. Wright RJ, **Langille MGI**, Walker TR (2020) “Food or just a free ride? A meta-analysis reveals the global diversity of the plastisphere”, *ISMEJ*.
11. Nearing JT, DeClercq V, Van Limbergen J, **Langille MGI** (2020) “Assessing the variation within the oral microbiome of healthy adults”, *mSphere*, 5:e00451-20.
12. Douglas GM, Bielawski JP, **Langille MGI** (2020) “Re-evaluating the relationship between missing heritability and the microbiome”, *Microbiome*, 8:87.
13. Douglas GM, Maffei VJ, Zaneveld J, Yurgel SN, Brown JR, Taylor CM, Huttenhower C, **Langille MGI** (2020) “PICRUSt2 for prediction of metagenome functions”, *Nature Biotechnology*, 38:685-688.
14. Nejman D, Livyatan I, Fuks G, Gavert N, Zwang Y, Geller LT, Rotter-Maskowitz A, Weiser R, Malle G, Gigi

- E, Meltser A, Douglas GM, Kamer I, Gopalakrishnan V, Dadosh T, Levin-Zaidman S, Avnet S, Atlan T, Cooper ZA, Arora R, Cogdill AP, Khan MDAW, Ologun G, Bussi Y, Weinberger A, Lotan-Pompan M, Golani O, Perry G, Rokah M, Bahar-Shany K, Rozeman EA, Blank CU, Ronai A, Shaoul R Amit A, Dorfman T, Kremer R, Cohen ZR, Harnof S, Siegal T, Yehuda-Shnaidman E, Gal-Yam EN, Shapira H, Baldini N, **Langille MGI**, Ben-Nun A, Kaufman B, Nissan A, Golan T, Dadiani M, Levanon K, Bar J, Yust-Katz S, Barshack I, Seeper DS, Raz DJ, Segal E, Wargo JA, Sandbank J, Shental N, Straussman R (2020) “The human tumor microbiome is composed of tumor type-specific intra-cellular bacteria”, *Science*, 368 (6494):973-980.
15. Wu L, Zeng T, Deligios M, Milanese L, **Langille MGI**, Zinellu A, Rubino S, Carru C, Kelvin D (2020) “Age-related variation of bacterial and fungal communities in different body habitats across the young, elderly and centenarians in Sardinia”, *mSphere*, 5:e00558-19.
 16. Palau M, Piqué N, Comeau AM, Douglas GM, Ramírez-Lázaro MJ, Lario S, Calvet X, **Langille MGI**, Miñana-Galbis D (2020) “Detection of *Helicobacter pylori* microevolution and multiple infection from gastric biopsies by housekeeping gene amplicon sequencing”, *Pathogens*, 9(2):97.
 17. Jones CMA, Connors J, Dunn KA, Bielawski JP, Comeau AM, **Langille MGI**, Van Limbergen J (2020) “Bacterial taxa and functions are predictive of sustained remission following exclusive enteral nutrition in pediatric Crohn’s disease”, *Inflammatory Bowel Diseases*, iza001.
 18. Douglas GM, **Langille MGI** (2019) “Current and promising approaches to identify horizontal gene transfer events in metagenomes”, *Genome Biology and Evolution*, 11(10): 2750-2766.
 19. Bolyen E, Rideout JR, Dillon MR*, Bokulich NA*, [...(105 other co-authors), Douglas GM, **Langille MGI**...], Caporaso JG (2019) “Reproducible, interactive, scalable, and extensible microbiome data science using QIIME 2”, *Nature Biotechnology*, 37:852.
 20. Yurgel SN, Nearing JT, Douglas GM, **Langille MGI** (2019) “Metagenomic functional shifts to plant induced environmental changes”, *Frontiers in Microbiology*, 10:1682.
 21. Zorz JK, Willis C, Comeau AM, **Langille MGI**, Li WKW, Johnson C, LaRoche J (2019) “Drivers of regional bacterial community structure and diversity over depth and time in the Northwest Atlantic Ocean”, *Frontiers in Microbiology*, 10:281.
 22. Nearing JT, Connors J, Whitehouse S, Van Limbergen J, MacDonald T, Kulkarni K, **Langille MGI**. (2019) “Infectious complications are associated with alterations in the gut microbiome in pediatric patients with Acute Lymphoblastic Leukemia”, *Frontiers in Cellular and Infection Microbiology*, 9:28.
 23. Singh R, Chandrashekarappa S, Bodduluri S, Baby B, Hegde B, Kotla N, Hiwale A, Saiyed T, Patel P, Vijaykumar M, **Langille MGI**, Douglas GM, Cheng X, Rouchka E, Waigel S, Dryden G, Alatassi H, Zhang H, Haribabu B, Vemula P, and Jala V (2019) “Enhancement of Gut Barrier Integrity by a Microbial Metabolite through Nrf2 Pathway”, *Nature Communications*, 10:89.
 24. Lau WL, Vaziri ND, Nunes A, Comeau AM, **Langille MGI**, England W, Khazaeli M, Suematsu Y, Phan J, Whiteson K. (2018) “The phosphate binder ferric citrate alters the gut microbiome in rats with chronic kidney disease”, *Journal of Pharmacology and Experimental Therapeutics*, 367(3):452-460.
 25. Dickson K, Liu S, Zhou J, **Langille MGI**, Holbein B, Lehmann C (2018) “Selective sensitivity of the gut microbiome to iron chelators in polybacterial abdominal sepsis”, *Medical Hypotheses*, 120:68-71.
 26. Dranse HJ, Zheng A, Comeau AM, **Langille MGI**, Zabel BA, Sinal CJ. (2018) “The impact of chemerin or chemokine-like receptor 1 loss on the mouse gut microbiome”, *PeerJ*, 6:e5494.
 27. Nearing JT, Douglas GM, Comeau AM, **Langille MGI**. (2018) “Denoising the Denoisers: An independent evaluation of microbiome sequence error-correction approaches”, *PeerJ*, 6:e5364.

28. DeClercq V, **Langille MGI**, Van Limbergen J. (2018) “Differences in adiposity and diet quality among individuals with inflammatory bowel disease in Eastern Canada”, *PLoS ONE*, 13(7): e0200580.
29. Yurgel SN, Douglas GM, Dussault A, Percival D, **Langille MGI**. (2018) “Dissecting community structure in wild blueberry root and soil microbiome”, *Frontiers in Microbiology*, 9, 1187.
30. **Langille MGI** (2018) “Exploring linkages between taxonomic and functional profiles of the human microbiome”, *mSystems*, 3:e00163-17.
31. Thilakarathna WPDW, **Langille MGI**, Rupasinghe HPV. (2018) “Polyphenol-based prebiotics and synbiotics: potential for cancer chemoprevention”, *Current Opinion in Food Science*, 20: 51-57.
32. Douglas GM*, Hansen R*, Jones C, Dunn K, Comeau AM, Biewlawski JP, El-Omar EM, Russell RK, Hold G[#], **Langille MGI**[#], Van Limbergen J[#]. (2018) “Multi-omics differentially classify disease state and treatment outcome in pediatric Crohn's disease”, *Microbiome*, 6(1):13.
(* joint first authors, [#]joint senior authors)
33. **Langille MGI**, Ravel J, Fricke WF. (2018) ““Available upon request”: Not good enough for microbiome data!”, *Microbiome*, 6(1):8.
34. Finlayson-Trick ECL, Getz LJ, Slaine PD, Thornbury M, Lamoureux E, Cook J, **Langille MGI**, Murray LE, McCormick C, Rohde JR, Cheng Z. (2017) “Taxonomic differences of gut microbiome drives cellulolytic enzymatic potential within hind-gut fermenting mammals”, *PLoS One*, 12(12), e0189404.
35. Inkpen SA, Douglas GM, Brunet TDP, Leuschen K, Doolittle WF, **Langille MGI**. (2017) “The coupling of taxonomy and function in microbiomes”, *Biology & Philosophy*, 1-19.
36. Lamoureux E, Grandy S, **Langille MGI**. (2017) “Moderate exercise has limited but distinguishable effects on the mouse microbiome”, *mSystems*, 2(4), e00006-17
37. Yurgel SN, Douglas GM, Comeau AM, Mammoliti M, Dussault A, Percival D, **Langille MGI**. (2017) “Variation in Bacterial and Eukaryotic Communities Associated with Natural and Managed Wild Blueberry Habitats”, *Phytobiomes*, 1(2), 102-113.
38. MacLellan A, Moore-Connors J, Shannan G, Cahill L, **Langille MGI**, Van Limbergen J. (2017) “The Impact of Exclusive Enteral Nutrition (EEN) on the Gut Microbiome in Crohn’s Disease: A Review”, *Nutrients*, 9(5), 0447.
39. Comeau AM, Douglas GM, **Langille MGI** (2017) “Microbiome Helper: A custom and streamlined workflow for microbiome research”, *mSystems*, 2(1), e00127-16.
40. Rutherford K, Meehan CJ, **Langille MGI**, Tyack SG, McKay JC, McLean NL, Benkel K, Beiko RG, Benkel B (2016) “Discovery of an expanded set of avian leukosis subgroup E proviruses in chickens using Vermillion, a novel sequence capture and analysis pipeline”, *Poultry Science*, 95(10), 2250-2258.
41. Miller RR, **Langille MGI**, Montoya V, Crisan A, Stefanovic A, Martin I, Hoang L, Patrick DM, Romney M, Tyrrell G, Jones SJM, Brinkman FSL, Tang P (2016) “Genomic analysis of a serotype 5 Streptococcus pneumoniae outbreak in Canada 2005-2009”, *Canadian Journal of Infectious Diseases & Medical Microbiology*, 5381871.
42. Laird MR, **Langille MGI**, Brinkman FSL (2015) “GenomeD3Plot: A library for rich, interactive visualizations of genomic data in web applications”, *Bioinformatics*, Jun 20. pii: btv376

43. Dhillon B, Laird M, Shay J, Winsor G, Lo R, Nizam F, Sheldon P, Waglechner N, McArthur A, **Langille MGI**, Brinkman FSL. (2015) “IslandViewer 3: more flexible, interactive genomic island discovery, visualization and analysis”, *Nucleic Acids Research*, Jul 1;43(W1):W104-8.
44. Hester CM, Jala VR, **Langille MGI**, Umar S, Greiner KA, Haribabu B (2015) “Fecal microbes, short chain fatty acids, and colorectal cancer across racial/ethnic groups”, *World Journal of Gastroenterology*, 21(9):2759-2769.
45. **Langille MGI**, Meehan CJ, Koenig J, Dhanani AS, Rose R, Howlett S, Beiko RG (2014) “Microbial shifts in the aging mouse gut”, *Microbiome*, 2(1):50.
46. Xu Z, Malmer D, **Langille MGI**, and Way SF, Knight R (2014) “Which is more important for classifying microbial communities: who's there, or what they can do?” *ISME Journal*, 8(12):2357-9.
47. Boon E, Meehan CJ, Whidden C, Wong DH, **Langille MGI**, Beiko RG (2014) “Interactions in the microbiome: communities of organisms and communities of genes”, *FEMS Microbiology Reviews*, 38(1):90-118.
48. **Langille MGI***, Zaneveld J*, Caporaso JG, McDonald D, Knights D, Reyes JA, Clemente JC, Burkepille DE, Vega Thurber RL, Knight R, Beiko RG, Huttenhower C (2013) “Predictive functional profiling of microbial communities using 16S rRNA marker gene sequences”, *Nature Biotechnology*, 31(9):814-821.
*Co-first authors
49. Parks DH, Mankowski T, Zangoeei S, Porter MS, Armanini DG, Baird DJ, **Langille MGI**, Beiko RG (2013) “GenGIS 2: Geospatial analysis of traditional and genetic biodiversity, with new gradient algorithms and an extensible plugin framework”, *PLoS ONE*, 8(7):e69885.
50. Dhillon B, Chiu T, Laird M, **Langille MGI**, Brinkman F (2013) “IslandViewer update: improved genomic island discovery and visualization”, *NAR*, 41(W1), W129-W132.
51. Sharpton TJ, Jospin G, Wu D, **Langille MGI**, Pollard KS, Eisen JA (2012) “Sifting through genomes with iterative-sequence clustering produces a large, phylogenetically diverse protein-family resource”, *BMC Bioinformatics*, 13: 624.
52. Jiang X*, **Langille MGI***, Neches RY, Elliot M, Levin SA, Eisen JA, Weitz JS, Dushoff J (2012) “Functional biogeography of ocean microbes revealed through non-negative matrix factorization”, *PLoS ONE*, 7(9): e43866.
*Co-first authors.
53. Lynch EA, **Langille MGI**, Darling A, Wilbanks EG, Haltiner C, Shao KSY, Starr MO, Teiling C, Harkins TT, Edwards RA, Eisen JA, Facciotti MT (2012) “Sequencing of Seven Haloarchaeal Genomes Reveals Patterns of Genomic Flux”, *PLoS ONE* 7(7), e41389.
54. **Langille MGI**, Laird MR, Hsiao WWL, Chiu TA, Eisen JA, Brinkman FSL (2012) “MicrobeDB: a locally maintainable database of microbial genomic sequences”, *Bioinformatics*, 28(14), 1947–1948.
55. **Langille MGI**, Meehan CJ, Beiko RG (2012) “Human Microbiome: A Genetic Bazaar for Microbes?”, *Current Biology*, 22(1), R20-22.
56. **Langille MGI**, Hsiao WWL, Brinkman FSL (2010) “Detecting of genomic islands using bioinformatics approaches”, *Nature Reviews Microbiology*, 8(5), 373-82.
57. **Langille MGI** and Eisen JA (2010) “BioTorrents: A file sharing service for scientific data” *PLoS One*, 5(4): e10071.

58. Ho Sui SJ, Fedynak A, Hsiao WWL, **Langille MGI**, Brinkman FSL (2009) “The association of virulence factors with genomic islands”, *PLoS One*, 4(12): e8094.
59. **Langille MGI** and Brinkman FSL (2009) “Bioinformatic detection of horizontally transferred DNA in bacterial genomes”, *F1000 Biology Reports*, 1:25.
60. **Langille MGI** and Brinkman FSL (2009) “IslandViewer: an integrated interface for computational identification and visualization of genomic islands”, *Bioinformatics*, 25(5):664-5.
61. Winstanley C, **Langille MGI**, Fothergill JL, Kukavica-Ibrulj I, Paradis-Bleau C, Sanschagrin F, Thomson NR, Winsor GI, Quail MA, Lennard N, Bignell A, Clarke L, Seeger K, Saunders D, Harris D, Parkhill J, Hancock REW, Brinkman FSL, and Levesque RC (2009). “Newly introduced genomic prophage islands are critical determinants of *in vivo* competitiveness in the Liverpool Epidemic Strain of *Pseudomonas aeruginosa*”, *Genome Research*, 19(1):12-23.
62. **Langille MGI**, Hsiao WWL, Brinkman FSL (2008). “Evaluation of genomic island predictors using a comparative genomics approach”, *BMC Bioinformatics*, 9:329
63. **Langille MGI** and Clark DV (2007). “Parent genes of retrotransposition-generated gene duplicates in *Drosophila melanogaster* have distinct expression profiles”, *Genomics*, 90(3):334-43.
64. Spidlen, J, Gentleman RC, Haaland PD, **Langille MGI**, Meur NL, Ochs MF, Schmitt C, Smith CA, Treister AS, Brinkman RR (2006). “Data standards for flow cytometry”, *OMICS*, 10(2):209-14.
65. Chodorowski A, Mattsson U, **Langille MGI**, Hamarneh G (2005). "Color Lesion Boundary Detection Using Live Wire", *Proceedings of SPIE Medical Imaging: Image Processing*, 5747:1589-96.
66. Hamarneh G, Yang J, McIntosh C, **Langille MGI** (2005). "3D live-wire-based semi-automatic segmentation of medical images", *Proceedings of SPIE Medical Imaging: Image Processing*, 5747:1597-603.

BOOK CHAPTERS

1. Douglas GM, Comeau AM, **Langille MGI**. Processing a 16S rRNA sequencing dataset with the Microbiome Helper workflow, In Beiko R, Parkinson J, and Hsiao W (eds.), *Microbiome Analysis: Methods and Protocols*, Springer Protocols: Methods in Molecular Biology, Vol. 1849, Humana Press, New York, 2018.
2. Douglas GM, Beiko RG, **Langille MGI**. Predicting the functional potential of the microbiome from marker genes using PICRUSt, In Beiko R, Parkinson J, and Hsiao W (eds.), *Microbiome Analysis: Methods and Protocols*, Springer Protocols: Methods in Molecular Biology, Vol. 1849, Humana Press, New York, 2018.
3. Meehan CJ, **Langille MGI**, Beiko RG. Frailty and the Microbiome, In Theou O and Rockwood K (eds.), *Frailty in ageing: biological, clinical and social implication*, Volume in the series Interdisciplinary Topics in Gerontology, Vol. 41, pp 54-65. Karger, Basel, 2015
4. **Langille MGI**, Zhou F, Fedynak A, Hsiao WWL, Xu Y, and Brinkman FSL. Mobile genetic elements and their prediction, In Y. Xu and J.P. Gogarten (eds.), *Computational Methods for Understanding Bacterial and Archaeal Genomes*, Series Advances in Bioinformatics and Comp. Biol., Vol. 7. Imperial College Press, London, 2008.

PRESENTATIONS

1. “The challenges of identifying robust biomarkers in microbiome studies”, June 9th, 2021, Microbiome Data

Congress 2021, (virtual).

2. “Bioinformatic approaches for human microbiome studies”, May 10th, 2021, Physiology, Anatomy and Microbiology Department Seminar Series, Trobe University, Melbourne, Victoria, Australia.
3. “Challenges and opportunities in microbiome-based biomarker discovery”, Oct. 21st, 2020, Singular Genomics, San Diego, USA.
4. “The Integrated Microbiome Resource: 100,000 samples and counting”, Dec 5th, 2019, Genomics in Medicine – Emerging Technologies and Bioinformatics Challenges, Dalhousie University, Halifax, Canada.
5. “Bioinformatic approaches for microbiome personalized medicine”, Apr. 30th, 2019, Biology Seminar Series, University of Puerto Rico, San Juan, Puerto Rico, USA.
6. “Bioinformatic approaches for microbiome personalized medicine”, Nov. 30th, 2018, Biology Seminar Series, UBC, Okanagan, Canada.
7. “The Integrated Microbiome Resource: 50,000 samples and counting”, June 18th, 2018, Illumina User Group Meeting, Dalhousie University, Halifax, Canada.
8. “Disease signatures of the human microbiome”, Apr. 26th, 2018, Department of Microbiology & Immunology Seminar Series, University of Louisville, USA.
9. “Disease signatures of the human microbiome”, Apr. 6th, 2018, 6th Annual Louisiana Conference on Computational Biology & Bioinformatics, Baton Rouge, LA, USA.
10. “Disease signatures of the human microbiome”, Mar. 28th, 2018, TorBUG (Toronto Bioinformatics User Group), Toronto, ON, Canada
11. “Bioinformatics for human health research”, Nov. 8th, 2017, Université de Moncton, NB, Canada.
12. “Microbiome Helper”, Oct 2nd, 2017, EBI Metagenomics Workshop, Wellcome Trust, Hinxton, UK.
13. “Multi-omics machine learning”, April 20th, 2017, Centre for Comparative Genomics & Evolutionary Bioinformatics Seminar Series, Dalhousie University, Halifax, NS, Canada.
14. “Microbiome: Techniques and recent discoveries”, Mar. 6, 2017, Illumina, San Diego, CA, USA.
15. “Using genetics to find new treatments of disease”, Jan. 17, 2017, Picchione Lecture Series (General Public Lecture), Halifax, NS, Canada.
16. “Assessing the relative contribution of genetics and micro-omics for predicting pediatric Crohn’s Disease”, Nov. 10, 2016, International Human Microbiome Consortium Congress 2016, Houston, Texas, USA.
17. “Integrated Microbiome Resource: >10,000 samples”, Aug. 30th, 2016, Dalhousie Microbiome Symposium, Halifax, NS, Canada.
18. “Microbiome Analysis Workshop: Metagenomics”, May 16th, 2016, GLBIO/CCBC, University of Toronto, Toronto, ON, Canada.
19. “Unraveling the complexities of the human microbiome”, April 20th, 2016, Genetics & Genomics Seminar Series, Life Sciences Research Institute, Halifax, NS, Canada.
20. “Unraveling the complexities of the human microbiome”, April 4th, 2016, Microbiology & Immunology Departmental Series, Dalhousie University, Halifax, NS, Canada.

21. "Microbiome insights into aging, exercise, and drug metabolism", January 14th, 2016, Dalhousie New Brunswick Departmental Series, Dalhousie New Brunswick, Saint John, NB, Canada.
22. "Exercise, drug metabolism, and the gut microbiome", October 15th, 2015, Centre for Comparative Genomics & Evolutionary Bioinformatics Seminar Series, Dalhousie University, Halifax, NS, Canada.
23. "Functional Inference, Statistics, and Visualization: PICRUSt & STAMP", August 14, 2015, Strategies and Techniques for Analyzing Microbial Population Structure, Marine Biological Laboratory, Woods Hole, MA, USA.
24. "Taxonomic and functional composition in metagenomics", June 25, 2015, Canadian Bioinformatics Workshop: Analysis of Metagenomic Data, Dalhousie University, Halifax, NS, Canada.
25. "Microbiome studies: They don't have to be complicated", April 8th, 2015, Microbiome Symposium, Dalhousie University, Halifax, NS, Canada.
26. "Exploring the human microbiome" Tom Marrie Lecture Series, April 25, 2014, Dalhousie University, Halifax, NS, Canada.
27. "Discovering human microbial interactions" Division of Otolaryngology Academic Rounds at the IWK, April 15, 2014, Halifax, NS, Canada.
28. "Microbiome Tutorial: PICRUSt & STAMP" Exploiting and Understanding Chemical Biotransformations in the Human Microbiome, April 3, 2014, Big Sky, Montana, USA.
29. "Exploring the human microbiome" Department of Biology Seminar Series, Jan. 23, 2014, Dalhousie University, Halifax, NS, Canada.
30. "Discovering human microbial interactions" Division of Haematology/Oncology Academic Rounds at the IWK, Jan. 10, 2014, Halifax, NS, Canada.
31. "Frailty and the microbiome in mice" CAG2013 Aging: from cells to society, October 17th, 2013, Halifax, NS, Canada.
32. "Social programming: Git and GitHub" Guest Lecture in CSCI3190, Sept. 24, 2013, Dalhousie University, Halifax, NS, Canada.
33. "Discovering human microbial interactions using next-gen bioinformatics" Faculty Interview Lecture, June 17, 2013, Department of Pharmacology, Dalhousie University, Halifax, NS, Canada.
34. "Predictive functional profiling of microbial communities using 16S marker gene sequences" CAU Kiel Joint Workshop, April 19, 2013, Dalhousie University, Halifax, NS, Canada.
35. "Git and GitHub" Faculty of Computer Science Free School, March 21, 2013 Dalhousie University, Halifax, NS, Canada.
36. "Inferring microbial community function from taxonomic composition" Microbial Genomics 2012, Sept. 19, 2012, Lake Arrowhead, CA, Canada.
37. "Leveraging ancestral state reconstruction to infer community function from a single marker gene" iEvoBio, July 11, 2012, Ottawa, ON, Canada.
38. "Computational insights of pathogenic bacteria and the ocean microbiome" University of New Brunswick Biology Seminar Series, Oct. 28, 2011, UNB, Fredericton, NB, Canada.

39. “Predicting function from taxonomy”, Microbiome Workshop, June 8th, 2011, Dalhousie University, Halifax, NS, Canada.
40. “BioTorrents: A File Sharing Service For Scientific Data” Open Science Summit, Jul. 30, 2010, Berkeley, California, USA.
41. “BioTorrents: A File Sharing Service For Scientific Data” Bioinformatics Technology Forum, Jun. 1, 2010, UC Davis, Davis, California, USA.
42. “Computational identification of bacterial genomic islands (large regions of horizontal gene transfer)” Bioinformatics Technology Forum, Nov. 17, 2009, UC Davis, Davis, California, USA.
43. “An introduction to systems biology and network visualization” Techniques in Biotechnology, August 11 & 12, 2008, BCIT, Burnaby, BC, Canada
44. “An introduction to bioinformatics, databases, and NCBI” Techniques in Biotechnology, June 9 & 16, 2008, BCIT, Burnaby, BC, Canada
45. “A graduate student’s experience in bioinformatics” BiNS - Bioinformatics Night at SFU, Feb. 29, 2008, SFU, Burnaby, BC, Canada
46. “Introduction to Algorithms in Bioinformatics” Canadian Bioinformatics Workshop, June 22, 2007, UBC Michael Smith Laboratories, Vancouver, BC, Canada
47. “Whole Genome Alignments” Canadian Bioinformatics Workshop, June 21, 2007, UBC Michael Smith Laboratories, Vancouver, BC, Canada
48. “Developing an ontology for flow cytometry data” Bioinformatics Graduate Program Colloquium, November 25, 2005, Vancouver, BC, Canada.
49. "Identifying Genomic Islands Using Comparative Genomics" Vancouver Bioinformatics Users Group (VanBUG), November 17, 2005, Vancouver, BC, Canada.
50. “Comparative Genomics Approach to Identifying Genomic Islands” Bioinformatics Graduate Program Colloquium, September 12, 2005, Vancouver, BC, Canada.
51. “Deconstruction of data transformations into reusable web services” Bioinformatics Graduate Program Colloquium, March 11, 2005, Vancouver, BC, Canada.

ABSTRACTS

1. Wright RJ, Trost B, Walker S, Scherer SW, **Langille MGI**. Choice of classification tool and taxonomic database drastically affect taxonomic profiling of blood metagenomes. Cold Spring Harbor Laboratory: Microbiome (Virtual), Oct. 20-23, 2020.
2. Tang CGJ, **Langille MGI**. Comparing predictive metabolomic modelling tools applied to the human microbiome using paired metagenome-metabolome data. Cold Spring Harbor Laboratory: Microbiome (Virtual), Oct. 20-23, 2020.
3. Nearing JT, Douglas GM, Hayes M, MacDonald J, Desai D, Allward N, Wright RJ, Dhanani A, Comeau AM, **Langille MGI**. Reproducibility issues in microbiome data analysis—Differential abundance tools produce

inconsistent results across 38 datasets. Cold Spring Harbor Laboratory: Microbiome (Virtual), Oct. 20-23, 2020.

4. Douglas GM, **Langille MGI**, Borenstein E. Identifying Robust Functional Biomarkers in Microbiome Sequencing Data with POMS. Cold Spring Harbor Laboratory: Microbiome (Virtual), Oct. 20-23, 2020.
5. Douglas GM, **Langille MGI**, Borenstein E. Identifying Robust Functional Biomarkers in Microbiome Sequencing Data with POMS. Wellcome Genome Informatics Conference Sept.14-16, 2020, (Held virtually, but organized in Hinxton, UK).
6. Dunn K, Connors J, Van Limbergen J, **Langille MGI**, Fernandez CV, MacDonald T, Kulkarni K. Significant association of gut microbiome with serum asparaginase levels in pediatric patients with acute lymphoblastic leukemia. 52nd Congress of the International Society of Paediatric Oncology, October 14-17, 2020, (Virtual).
7. Nearing JT, DeClercq V, Van Limbergen J, **Morgan G.I. Langille**. (2020). Demographic, lifestyle, anthropometric, and dietary factors that impact the healthy oral microbiome composition. Dalhousie Graduate Research Day 2020.
8. Douglas GM, **Langille MGI**. Making sense of functional microbiome associations with POMS. Genomics in Medicine Conference, December 5-6th, 2019, Dalhousie University, Halifax, Canada.
9. Nearing JT, MacDonald T, Connors J, **Langille MGI**, Kulkarni K. The association of gut microbiome with asparaginase levels in pediatric patients with acute lymphoblastic leukemia: A Pilot study. 51st Congress of the International Society of Paediatric Oncology, October 23-26, 2019, Lyon, France.
10. Nearing JT, Connors J, Whitehouse S, Van Limbergen J, Macdonald T, Kulkarni K, **Langille MGI**. 2018. Infectious Complications are Associated with Alterations in the Gut Microbiome in Pediatric Patients with Acute Lymphoblastic Leukemia. 2018 Terry Fox Research Institute Ontario Node Research Symposium, Toronto Canada.
11. Nearing JT, Connors J, Whitehouse S, Van Limbergen J, Macdonald T, Kulkarni K, **Langille MGI**. 2018. Infectious Complications are Associated with Alterations in the Gut Microbiome in Pediatric Patients with Acute Lymphoblastic Leukemia. 2018 BHCRI/TFRI Cancer Research Conference in Atlantic Canada, Halifax Canada.
12. Nearing JT, Connors J, Whitehouse S, Van Limbergen J, Macdonald T, **Langille MGI**, Kulkarni K. Alterations in gut microbiome are associated with infectious complications in patients with acute lymphoblastic leukemia. *Pediatric Blood Cancer*.2018;65:Supplement S2:S29-30 (oral presentation)
13. Nearing JT, Connors J, Whitehouse S, Van Limbergen J, Macdonald T, Kulkarni K, **Langille MGI**. Infectious complications are Associated with Alterations in the Gut Microbiome in Pediatric Acute Lymphoblastic Leukemia. 7th International Human Microbiome Consortium Meeting, June 26-28, 2018, Killarney, Ireland.
* Won best poster
14. Douglas GM, Zaneveld J, Maffei VJ, Xu ZZ, Leuschen K, Brown JR, Huttenhower C, **Langille MGI**. PICRUSt 2.0: Novel Features for Predicting Functional Potential. 7th International Human Microbiome Consortium Meeting, June 26-28, 2018, Killarney, Ireland.
* Won travel award
15. Jones CMA, Connors J, MacIntyre B, Whitehouse S, James H, Mahdi G, Rashid M, Noble A, Russell R, Hold G, Van Limbergen J, **Langille MGI**. The gut virome of pediatric Crohn's Disease (CD) following exclusive enteral nutrition – 7th International Human Microbiome Consortium Meeting, June 26-28, 2018, Killarney, Ireland.

16. Jones CMA, Connors J, MacIntyre B, Whitehouse S, James H, Mahdi G, Rashid M, Noble A, Russell R, Hold G, Van Limbergen J, **Langille MGI**. The gut virome of pediatric Crohn's Disease (CD) following exclusive enteral nutrition – CSV 2018: The 2nd Symposium of the Canadian Society for Virology, June 13-15, 2018, Halifax, NS.
* Selected for oral presentation.
17. Getz LJ, Comeau AM, **Langille MGI**, Thomas NA. Linking phenotype and pathogen genomics: Tn-Seq and Next Generation DNA sequencing. 23rd Annual Infectious Diseases Research Day & 10th Annual Canadian Center for Vaccinology Symposium, April 2018, Halifax, NS, Canada.
18. Douglas GM, Zaneveld J, Maffei VJ, Xu ZZ, Leuschen K, Huttenhower C, Brown JR, **Langille MGI**. PICRUSt 2.0: Novel Features for Predicting Functional Potential. Keystone Symposia: Microbiome, Host Resistance and Disease, March 2018, Banff, Canada.
19. Nearing JT, Connors J, Whitehouse S, Van Limbergen J, Macdonald T, Kulkarni K, **Langille MGI**. Infectious complications are Associated with Alterations in the Gut Microbiome in Pediatric Acute Lymphoblastic Leukemia. Keystone Symposia: Microbiome, Host Resistance and Disease, March 2018, Banff, Canada.
20. Jones CMA, Connors J, MacIntyre B, Whitehouse S, James H, Mahdi G, Rashid M, Noble A, Russell R, Hold G, Van Limbergen J, **Langille MGI**. The gut virome of pediatric Crohn's Disease (CD) following exclusive enteral nutrition. 4th International Symposium on Pediatric Inflammatory Bowel Disease, September 13-16, 2017, Barcelona, ES.
21. Hansen R, Douglas GM, Jones CMA, Dunn K, Comeau AM, Bielawski JP, Tayler R, El-Omar EM, Russell RK, Hold GL, **Langille MGI**, Van Limbergen J. Shotgun Metagenomics, 16S rRNA Gene Sequencing, and Human Genetics Differentially Classify Paediatric Crohn's Disease (CD) State and Treatment Outcome. 4th International Symposium on Pediatric Inflammatory Bowel Disease, September 13-16, 2017 Barcelona, ES.
22. Stadnyk AW, Douglas GM, Comeau AM, Jain U, Schwaeble W, Stover C, Bieko RG, **Langille MGI**. Properdin deficiency does not impact the mouse response to DSS-induced colitis despite differences in colonic microbiome. Canadian Digestive Disease Week, March 3-6, 2017, AB, Canada.
23. MacLellan A, Connors J, Macintyre, B, Douglas G, Dunn K, Bielawski, JP, Noble A, Mahdi G, Rashid M, Otley A, Cahill L, **Langille MGI**, Van Limbergen, J. Fibre intake is associated with microbiome changes in Pediatric Crohn's Disease patients following remission induction with exclusive enteral nutrition (EEN). 12th Congress of ECCO- Inflammatory Bowel Diseases, Feb 15-18, 2017, Barcelona, Spain.
24. Jones C, Douglas GM, Comeau AM, Hansen R, Russell R, Hold G, **Langille MGI**, and Van Limbergen J. An integrated microbiome and genetic analysis of pediatric Crohn's Disease. World Congress of Pediatric Gastroenterology, Hepatology and Nutrition, Oct. 5-8, 2016, Montreal, QC, Canada.
25. Jones C, Douglas GM, Comeau AM, Hansen R, Russell R, Hold G, **Langille MGI**, and Van Limbergen J. Assessing the relative contribution of genetics and the microbiome for predicting pediatric Crohn's Disease. ISME 16, Aug. 21-26, 2016, Montreal, QC, Canada.
26. Comeau AM, Ratten JM, Tolman J, LaRoche J, and **Langille MGI**. Evaluation of standard and hybrid assembly methods for de novo sequencing of a novel marine bacterium representing a widespread clade of North Atlantic diazotrophs. ISME 16, Aug. 21-26, 2016, Montreal, QC, Canada.

27. LaRoche J, Ratten JM, Tolman J, Comeau AM, and **Langille MGI**. The genome of a novel marine heterotrophic diazotroph isolated from the North West Atlantic Ocean sheds light on its life style. ISME 16, Aug. 21-26, 2016, Montreal, QC, Canada.
28. Hsu TY, Franzosa EA, Luo C, Wong DH, **Langille MGI**, Beiko RG, and Huttenhower C. Detecting lateral gene transfer events in host-associated microbial communities. ASM Microbe June 16-20th, 2016, Boston, MA, United States.
29. Lamoureux E, Grandy S, and **Langille MGI**. Machine Learning reveals microbiome differences in exercise mouse models. ASM Microbe, June 16-20th, 2016, Boston, MA, United States.
30. LeBlanc T and **Langille MGI**. Drug metabolism potential of the human microbiome varies by age. ASM Microbe, June 16-20th, 2016, Boston, MA, United States.
31. Comeau AM, Douglas GM, and **Langille MGI**. Integrated Microbiome Resource (IMR): Developing an Open and Streamlined Experimental and Analysis Pipeline for Microbiome Research. ASM Microbe, June 16-20th, 2016, Boston, MA, United States.
32. Comeau AM, Douglas GM, and **Langille MGI**. Integrated Microbiome Resource (IMR): Developing an Open and Streamlined Experimental and Analysis Pipeline for Microbiome Research. GLBIO/CCBC, May 16-19th, 2016, Toronto, ON, Canada.
33. LeBlanc T and **Langille MGI**. Drug metabolism potential of the human microbiome varies by age. 14th Annual Crossroads Interdisciplinary Student Health Research Conference, March 11-12, 2016, Halifax, NS, Canada. *Selected for oral presentation
34. Lamoureux E, Grandy S, and **Langille MGI**. Exercise has a minor effect on the murine microbiome. 14th Annual Crossroads Interdisciplinary Student Health Research Conference, March 11-12, 2016, Halifax, NS, Canada. *Selected for oral presentation
35. Jones C, Douglas G, Comeau AM, Van Limbergen J, Hansen R, Russell R, Hold G, and **Langille MGI**. Host-microbe interactions influence the development of Inflammatory Bowel Disease. 14th Annual Crossroads Interdisciplinary Student Health Research Conference, March 11-12, 2016, Halifax, NS, Canada. *Selected for oral presentation
36. Comeau AM and **Langille MGI**. Microbiome: From Samples to Statistics in a Workweek. American Society for Microbiology General Meeting, May 30 - June 2, 2015, New Orleans, United States.
37. Kottwitz H, **Langille MGI**, White R, and Rohde J. Investigating the basis for colonization resistance to *Shigella flexneri* in the mouse colon. IHRTP Graduate Student Day, May 20th, 2015, Halifax, NS, Canada
38. Shay JA, Dhillon BK, Laird MR, Winsor GL, Griffiths EJ, Berry C, Knox N, Petkau A, Reimer A, **Langille MGI**, Van Domselaar G, and Brinkman FSL. IslandViewer: More Flexible, Integrated Prediction and Visualization of Genomic Islands, Virulence Factors and Antimicrobial Resistance Genes in Bacterial Genomes. American Society for Microbiology General Meeting, May 30 - June 2, 2015, New Orleans, United States.
39. Shay JA, Dhillon BK, Laird MR, Winsor GL, Griffiths EJ, Berry C, Knox N, Petkau A, Reimer A, **Langille MGI**, Van Domselaar G, and Brinkman FSL. IslandViewer: More Flexible, Integrated Prediction and Visualization of Genomic Islands, Virulence Factors, and Antimicrobial Resistance Genes in Bacterial Genomes. Genomics Forum, May 8, 2015, Vancouver, Canada.

40. Dhillon BK, Laird MR, Shay JA, Winsor GL, Lo R, Nizam F, Pereria SK, Waglechner N, McArthur AG, **Langille MGI**, and Brinkman, FSL. IslandViewer 3 for interactive genomic island discovery, visualization and analysis in outbreaks. B.I.G. Research Day, March 20th, 2015, Vancouver, British Columbia, Canada.
41. Connors J, Hansen R, Dunn KA, **Langille MGI**, Russell RK, Otley AR, MacIntyre B, El-Omar EM, Bielawski JP, Hold GL, Van Limbergen J (2015) Assessment of community structure and predictive functional profiling of the mucosa-associated microbiome implicates alterations in benzoate metabolism in 'de novo' IBD after pouch-surgery and in treatment-naïve pediatric IBD. 10th Congress of ECCO – Inflammatory Bowel Diseases, February 18-21, 2015, Barcelona, Spain.
42. Shay, JA, Dhillon, BK, Laird, MR, Chiu, TA, **Langille, MGI**, and Brinkman, FSL. IslandViewer and IslandPlot: flexible identification, visualization, and characterization of microbial genomic regions associated with adaptations of environmental, medical, and industrial importance. Genomics: the Power and the Promise, November 24-26, 2014, Ottawa, Canada.
43. Laird MR, Winsor GL, Dhillon BK, Shay JA, Whiteside MD, **Langille MGI**, Chiu TA, Brinkman FSL (2014) Comparison and visualization of large datasets of microbial genomes. Biological Data Science, November 5-8, 2014, Cold Spring Harbor, NY, USA.
44. Hsu TY, Franzosa EA, Luo C, Wong DHJ, **Langille MGI**, Beiko RG, Huttenhower C (2014) Characterizing lateral gene transfer events in microbial communities and the human microbiome. META Center on Host-Microbe Systems Biology, August 8-10, 2014, Eugene, OR, USA.
45. Dhillon BK, Laird MR, Shay JA, Chiu TA, **Langille MGI**, and Brinkman FSL (2014). IslandViewer and IslandPlot: genomic island identification and analysis with improved annotation and more flexible, dynamic visualization. Global Microbial Identifier, September 11-12th, 2014, York, United Kingdom
46. Dhillon BK, Laird MR, Shay JA, Chiu TA, **Langille MGI**, and Brinkman FSL (2014). IslandViewer: a flexible interface for genomic island identification and visualization. SFU Health Research Day, April 10th, 2014, Burnaby, BC, Canada.
47. Dhillon BK, Laird MR, Shay JA, Chiu TA, **Langille MGI**, and Brinkman FSL (2014). IslandViewer: a flexible interface for genomic island identification and visualization. BIOF/GSAT/IOP Retreat 2014, March 28th, 2014, Vancouver, BC, Canada.
48. **Langille MGI**, Zaneveld J, Caporaso JG, McDonald D, Knights D, Reyes JA, Clemente JC, Burkepille DE, Vega Thurber RL, Knight R, Beiko RG, Huttenhower C (2013) “Predictive functional profiling of microbial communities using 16S rRNA marker gene sequences”, Applied & Environmental Microbiology, July 7-12, 2013, South Hadley, MA, USA.
49. Dhillon BK, Chiu TA, Laird MR, **Langille MGI**, and Brinkman FSL (2013) “IslandViewer: an integrated interface for genomic island identification and visualization” The Eleventh Asia Pacific Bioinformatics Conference, January 21-23, 2013, Vancouver, British Columbia, Canada
50. **Langille MGI**, Zaneveld J, Caporaso JG, Reyes J, Knights D, McDonald D, Knight R, Beiko RG, Huttenhower C (2012) “Inferring microbial community function from taxonomic composition” Microbial Genomics 2012, Sept. 16-20, 2012, Lake Arrowhead, CA, United States
51. Dhillon BK, Chiu TA, Laird MR, **Langille MGI**, and Brinkman FSL (2012) IslandViewer: an integrated interface for genomic island identification and visualization. Conference of the Canadian Society of Microbiologists, June 20-23, 2012, Vancouver, British Columbia, Canada.
52. **Langille MGI**, Zaneveld J, Caporaso JG, Reyes J, Knights D, McDonald D, Knight R, Beiko RG, Huttenhower C (2012) “Inferring microbial community function from taxonomic composition” International Human Microbiome Congress, March 19-21, 2012, Paris, France.

*Received Travel Award from IHMC.

53. Sharpton TJ, Jospin G, **Langille MGI**, Wu D, Eisen JA, Pollard KS (2012) "Quantifying Human Microbiome Functional Variation using Operational Protein Families" International Human Microbiome Congress, March 19-21, 2012, Paris, France.
54. **Langille MGI** and Eisen JA (2010) "Characterizing Protein Families of Unknown Function" 18th Annual International Meeting on Microbial Genomics, September 12-16, 2010, Lake Arrowhead, California, USA.
55. **Langille MGI** and Eisen JA (2010) "BioTorrents: a file sharing service for scientific data" 110th General Meeting of the American Society for Microbiology, May 23-27, 2010, San Diego, California, USA.
56. **Langille MGI** and Eisen JA (2009) "BioTorrents: a file sharing service for scientific data" Biology and Mathematics in the Bay Area Meeting, Nov. 14, 2009, Santa Cruz, California, USA.
57. Winsor GL, Rossum TV, Fleming LA, Lo R, Yu N, **Langille MGI**, Whiteside MD and Brinkman FSL (2009). "Computational Methods to Aid Comparative Analysis of Microbial Genomes." Genome Informatics, October 27-30, 2009, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, USA.
58. **Langille MGI** and Brinkman FSL (2008). "IslandPick and IslandViewer: Tools for the computational identification and visualization of genomic islands." 16th Annual International Meeting on Microbial Genomics, September 14-18, 2008, Lake Arrowhead, California, USA.
59. **Langille MGI**, Hsiao WWL, and Brinkman FSL (2007). "Automated detection of prokaryotic genomic islands using a comparative genomics approach." 15th Annual International Conference on Intelligent Systems for Molecular Biology, July 21-25, 2007, Vienna, Austria.
60. Fedynak, A, Ho CK, **Langille MGI**, and Brinkman FSL (2007). "Identification of novel essential genes and pathogen-associated genomic regions". Canadian Society for Microbiologists Annual General Meeting. June 17-20, 2007, Quebec, Canada.
61. **Langille MGI**, Hsiao WWL, Fedynak A, Ho CK, and Brinkman FSL (2007). "Development and analysis of data sets of prokaryotic genomic islands." Pacific Symposium on Biocomputing, January 3-7, 2007, Maui, Hawaii, USA.
62. Hokamp K., Roche FM, **Langille MGI**, Acab M, Fulton DL, Laird M, Li Y, Lo R, Chan SK, Babiuk LA, Hancock REW, and Brinkman FSL (2006). "Bioinformatics Tools for Cross-species Comparisons of Microarray Data." World Microarray Congress 2006, March 24-25, 2006, Vancouver, B.C., Canada.
63. **Langille MGI**, Hsiao WWL, Fulton DL, Li Y, Laird M, and Brinkman FSL (2006). "Ortholuge and IslandPath: tools for the genome-wide detection of orthologs and genomic islands." International Conference on Phylogenomics, March 15-19, 2006. Sainte-Adèle, PQ, Canada.
64. Hsiao WWL, **Langille MGI**, Fedynak A, Chilana P, and Brinkman FSL (2006). "Genomic island analysis: Improved web-based software and insights into an apparent gene pool associated with genomic islands." ASM Northwest Branch Meeting 2006, March 10-12, 2006, Seattle, Washington, USA.
65. Hsiao WWL, **Langille MGI**, and Brinkman FSL (2005). "Computational characterization of genomic islands: Insights into a large, novel gene pool." National Academy of Sciences Sackler Tapestry of Life Colloquium: Lateral Transfers of Heritable Elements, December 12-13, 2005, Irvine, CA, USA.
66. Wang D, **Langille MGI**, Leung S, and Wilkinson M (2005). "Investigation of Data Transformation Frameworks for Enhancing the Interoperability of Bioinformatic Web Services" iCAPTURE Summer Student

FUNDING

Start Date	Award Type	NPA	My Role	Title	Value (duration)
2021 March	CIHR Operating Grant: CIHR Network for Emerging COVID-19 Variants Research	Marc-André Langlois	Co-applicant	The Coronavirus Variants Rapid Response Network (CoVaRR-Net)	\$9,000,000 (1 year)
2021 March	CFI Innovation Fund	Graham Dellaire	Co-applicant	Cancer risks of arsenic and radon environmental exposures (CARE)	\$2,296,995 (5 years)
2020 Dec.	Marathon of Hope Atlantic Cancer Consortium	Sherri Christian	Co-investigator	Development of an integrated foundation for precision medicine for the Atlantic Region with a focus on Colorectal Cancer and Lung cancer	
2020 Sept.	Cancer Research Society: Operating Grants	Paola Marcato	Co-applicant	Identification of novel mediators of paclitaxel response in breast cancer for improving treatment efficacy	\$120,000 (2 years)
2020 June	Genome Canada: COVID-19 Regional Genomics Initiative	Nikhil Thomas	Co-lead	Massive High Throughput COVID-19 Testing Using Next Generation Sequencing: Addressing the Urgent Need for Widescale Testing Capacity Within Communities	\$178,750 (1 year)
2020 June	NS COVID-19 Health Research Coalition	Langille	Nominated Principal Applicant	A Microbiome-Based COVID-19 Risk-Assessment Tool	\$30,000 (1 year)
2020 April	Network for Canadian Oral Health Research New Frontiers Seed Grant	Leigha Rock	Co-applicant	Exploring the diversity in the microbiome of high risk oral epithelial dysplasia as a predictor of malignant progression	\$20,000 (1 year)
2019 Dec.	CIHR Canadian Microbiome Initiative 2: Team Grants	Marie Claire Arrieta	Principal Applicant	Contribution of the microbiome to asthma risk in premature infants	\$2,000,000 (5 years)
2019 Dec.	CIHR Team Grant: Sepsis Research Network	Allison Fox-Robichaud	Collaborator	Improving Care Before, During and After Sepsis	\$1,140,000 (5 years)
2019 March	CIHR Canadian Microbiome Initiative 2: Team Grants (Letter of Intent)	Langille	Nominated Principal Applicant	Novel and robust systems-based approaches for the identification and translation of microbiome derived diagnostic and therapeutics	\$25,000 (6 months)
2019 Jan.	CIHR: Understanding the Health Impact of	Olga Theou	Co-applicant	The impact of prolonged bed rest and exercise on frailty	\$177,789 (1.5 years)

	Inactivity			and frailty-related biological markers.	
2018 Sept.	Nova Scotia Health Research Foundation: Establishment Grant	Clarissa Sit	Co-applicant	Accelerating the discovery of new antibiotics to combat drug-resistant human pathogens	\$150,000 (3 years)
2017 April	Nova Scotia Health Research Foundation: Establishment Grant	Ketan Kulkarni	Co-applicant	Role of fecal microbiome profiling in optimizing asparaginase therapy in childhood acute lymphoblastic leukemia	\$150,000 (3 years)
2017 April	DMRF: Molly Appeal	Andrew Makrigiannis	Co-applicant	Translating microbiome analysis to the clinic	\$200,000 (1 Year)
2017 Jan.	Picchione Lecture Series	Langille	Nominated Principal Applicant	Funding to host a general public lecture with 8 panelists called "Using Genetics to Find New Treatments of Disease"	\$8000
2016 Aug	Innovacorp: Productivity and innovation voucher program	Coconut Goodness Food Products	Co-applicant	Microbiome assessment of the production of coconut kefir	\$15,000
2016 July	NSERC Collaborative and Research Development Grant	Langille	Nominated Principal Applicant	Improving metagenomic inference and sample classification in inflammatory bowel disease	\$120,000 (2 years)
2016 June	Nova Scotia Department of Agriculture: Research Acceleration	Svetlana Yurgel	Co-applicant	Rhizo-microbiome as a tool for understanding <i>V. angustifolium</i> -microbe interaction	\$40,000 (1 year)
2016 May	Canada Research Chair	Langille	Nominated Principal Applicant	Canada Research Chair in Human Microbiomics	\$500,000 (5 years)
2016 May	Canada Foundation For Innovation: John R. Evans Leaders Fund	Langille	Nominated Principal Applicant	Integrating, classifying, and inferring the human microbiome	\$312,395 (5 years)
2016 April	NSERC Discovery Grant	Langille	Nominated Principal Applicant	Integrating and modeling host-microbiome interactions	\$150,000 (5 years)
2016 Jan.	Occupational Health and Safety Futures Research Funding Program	Anil Adisesh & Jeremy Beach	Co-applicant	Exposure to welding fume and the effect on the human respiratory microbiome	\$45,000 (1 Year)
2015 June	Nova Scotia Department of Agriculture: Research Acceleration	Svetlana Yurgel	Co-applicant	Evaluation of Bacterial and Fungal Diversity in Natural and Managed Blueberry Habitats	\$76,000 (2 years)
2015 July	Banting Research Foundation Discovery Award	Langille	Nominated Principal Applicant	Design and implementation of a human microbiome interaction knowledge base	\$25,000 (1 year)
2014 Oct.	Dalhousie University: Strategic Research Initiatives Fund	Ford Doolittle	Co-applicant	An integrated resource for metagenomics and microbiomics in Atlantic Canada	\$200,000 (2 years)
2013 Aug.	NSHRF Innovation Grant	Andrew Stadnyk	Associate	The role of the complement system in post-colitis	\$15,000 (1 year)

				colonization and recovery from injury	
2012 Mar.	CIHR Fellowship		Nominated Principal Applicant	Predicting function from taxonomy to reveal insights into the human microbiome	\$100,000 (2 years)

MEDIA RELATIONS

- 2019/06/24: National Public Radio, USA
 - [“Could a microbe boost athletic performance?”](#)
- 2017/05/31: Genome Atlantic Sequence Genomics Bulletin
 - [“New frontier of microbiomics generates lots of research buzz”](#)
 - [“Growing demand keeps local sequencing facility hopping”](#)
- 2017/01/17: Interview with CBC Radio, Information Morning Show, Halifax, NS, Canada
- 2017/01/04: “N.B.-born medical researcher attracting global attention for his work with human bacteria”:
 - [Online](#): Telegraph Journal
 - In print: Telegraph Journal, Saint John, NB, Canada
 - In print: The Daily Gleaner, Fredericton, NB, Canada
 - In print: The Kings County Record, Sussex, NB

BIOINFORMATIC PACKAGES

PICRUST2

<https://github.com/picrust/picrust2/wiki>

- Improved and extended functional predictions from 16S microbial community profiling

Microbiome Helper

https://github.com/mlangill/microbiome_helper

- Bioinformatic pipelines, standard operating procedures, and tutorials for 16S and metagenomic data.

PICRUST

<http://picrust.github.com>

- Metagenome inference from 16S microbial community profiling

IslandViewer

<http://www.pathogenomics.sfu.ca/islandviewer/>

- Web-interface for identifying and visualizing genomic islands

IslandPick

http://www.pathogenomics.sfu.ca/islandpick_GI_datasets/

- Comparative genomics approach for identifying genomic islands

BioTorrents

<https://github.com/mlangill/biotorrents>

- Website and BitTorrent tracker for sharing of scientific open-access data

MicrobeDB

<https://github.com/mlangill/microbedb/>

- Local system for downloading, storing and accessing through a MySQL database all completed microbial genomes

RESEARCH SERVICE

- 2018/06 – current: Associate Editor for *Frontiers in Cellular and Infection Microbiology* (IF: 3.5)
- 2017/10 – current: Associate Member of the Beatrice Hunter Cancer Research Institute
- 2017/06 – current: Associate Editor for *PLOS Computational Biology* (IF: 4.6)
- 2017/02 – current: Associate Editor for *Microbiome* (IF: 9.1)
- 2015/09 – current: Associate Editor for *mSystems* (IF: 5.8)
- 2017/09 – 2019/12: Scientific Advisory Board for the British Columbia Centre for Disease Control
- 2015/07 – 2018/07: Council on Microbial Sciences (COMs), Division R: Evolutionary and Genomic Microbiology, American Society of Microbiology
- Reviewer for numerous journals including *Nature Methods*, *Nature Biotechnology*, *Nature Microbiology*, *PNAS*, *PLoS Computational Biology*, *Bioinformatics*, *Nucleic Acids Research*, *Microbiome*, and *ISMEJ*.

GRANT REVIEWS

- 2020/09: CFI JELF (External Grant Reviewer)
- 2020/08: BioInnovation Institute, Denmark
- 2020/06: University of Toronto: Medicine by Design (external reviewer)
- 2019/11: BCCDC Foundation Open Awards Program Scientific Review
- 2019/01: Cystic Fibrosis Canada (external reviewer)
- 2019/01: NSERC Discovery Grant (external reviewer)
- 2018/11: BCCDC Foundation Open Awards Program Scientific Review
- 2018/09: CFI JELF (External Grant Reviewer)
- 2018/05: BCCDC Foundation Open Awards Program Scientific Review
- 2018/04: External Grant Reviewer for MITACS Accelerate
- 2018/01: External Grant Reviewer for Netherlands Organisation for Scientific Research (NWO)
- 2017/12: External Grant Reviewer for NSERC Discovery Grants
- 2017/12: CFI JELF (External Grant Reviewer)
- 2017/11: BCCDC Foundation Open Awards Program Scientific Review
- 2017/05: Review panel for the JGI-NERSC Microbiome Data Science Call
- 2017/02: External Grant Reviewer for MITACS Accelerate
- 2017/02: Grant Review Committee Member for CIHR Project Competition
- 2017/02: External Grant Reviewer for Baylor College Collaborative Faculty Research Investment Program, Houston, USA.
- 2016/12: External Grant Reviewer for NSERC Discovery Grant
- 2016/12: CFI JELF (External Grant Reviewer)
- 2016/09: External Grant Reviewer for NSF CAREERS

- 2016/03: External Grant Reviewer for AXA Research Fund Post-Doctoral Fellowship, European Science Foundation, France
- 2015/05: External Grant Reviewer for Agence Nationale de la Recherche (ANR) MICROREGAL, Paris, France

SCHOLARSHIP REVIEWS

- 2019/11: Scientific Review Committee for Dalhousie Harmonized CIHR PhD Competition
- 2019/10: Scientific Review Committee for BHRCI CRTP Award Competition
- 2019/02: Scientific Review Committee for Dalhousie Harmonized NSERC MSc Competition
- 2018/11: Scientific Review Committee for Dalhousie Harmonized NSERC PhD Competition
- 2018/10: Scientific Review Committee for BHRCI CRTP Award Competition
- 2018/02: Scientific Review Committee for Killam Postdoctoral Fellowships
- 2018/03: Scientific Review Committee for BHRCI CRTP Award Competition
- 2017/02: Scientific Review Committee for Killam Postdoctoral Fellowships

ADMINISTRATION COMMITTEES

- 2021/02: Faculty Review & New Head Search for the School of Biomedical Engineering Committee: Member
- 2020/02 – current: Faculty of Medicine, Genomics in Medicine Executive Committee: Member
- 2020/09: Dept. of Pharmacology Tenure-track Faculty Search Committee: Member
- 2019/07 – current: Dept. Pharmacology Promotion/Tenure & Appointments Committee: Member
- 2019/09 – current: Faculty of Medicine, Genomics Core Committee: Member
- 2019/02: Dept. of Pharmacology Tenure-track Faculty Search Committee: Member
- 2018/09 – current: FGS Scholarship Committee: Member
- 2018/02 – current: Dept. of Pharmacology: Graduate Coordinator
- 2018/02: Faculty Review of the Math & Statistics Department Committee: Member
- 2018/02 – current: Dept. of Pharmacology Grad Student Affairs Committee: Chair
- 2017/09 – 2018/02: Dept. of Pharmacology Grad Student Affairs Committee: Member
- 2017/05: Faculty Review of the Biochem. and Mol. Biol. Department Committee: Member
- 2016/09 – 2018/08: Killam Postdoctoral Fellowship Committee: Member
- 2016/04 – current: Centre for Genomics Enhanced Medicine Executive Committee: Member
- 2015/11 – current: Faculty of Medicine Tenure and Promotion Committee: Member

SUPERVISION

Principal Supervisor

Name	Undergraduate/ Honours	RIM	MSc	PhD	Post-doc	Research Associate	Technician
Andre Comeau						2014- current	
Travis LeBlanc		2017- 2018	2014- 2016				
Akhilesh Dhanani					2015- 2016	2016- current	
Emily Lamoureux	2014-2015		2015- 2017				2017-2018
Casey Jones	2015-2016		2017- 2018				2018- current
Gavin Douglas				2016- current			2015-2016
Alex Whynott		2016- 2019					
Jacob Nearing				2017- current			
Alessi Kwawukume							2018- current
Dhwani Desai						2018- current	
Ben Callaghan		2019 - current					
Chris Tang			2019 - current				
Robyn Wright					2020 - current		
Vanessa DeClercq						2020 - current	
Jocelyn MacDonald	Winter 2019						
Arvin Mahmoodi	Summer 2020						
Ethan Fogarty	2020-2021						
<i>Total</i>	4	3	4	2	2	4	4

Co-Supervisor

Name	Supervisor	Undergraduate /Honours	RIM	MSc	PhD
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Molly Hayes	Hong Gu (Stats)	2016-2017		2017-2020	
Colleen Trim	Lois Murray (Microbiology & Immunology)	2016-2017			
Montse Palau de Miguel	David Minana-Galbis (Visiting PhD student from Barcelona)				2016-2017
Ashley Dussault	Svetlana Yurgel (Agriculture)			2016-2019	
Kathleen Vergunst	Jennifer Corcoran (Microbiology & Immunology)	Summer 2017			
Nicole Allward	Graham Gagnon (Civil)				2017- current
John Balloch	Anil Adisesh (DalNB)		2017-2019		

STUDENT ADVISORY COMMITTEES

- 2020-current: PhD: Shayne McLaughlin (Agriculture)
- 2020-current: PhD: Elizabeth O’Leary (Psychology and Neuroscience)
- 2019-current: PhD: Jee In Kim (Interdisciplinary)
- 2019-2021: MSc: Connor Mackie (Biology)
- 2018-current: PhD: Mike Hall (Interdisciplinary)
- 2018-current: PhD: Wasitha Praveen de Wass Thilakarathna (Agriculture)
- 2018-current: PhD: Victoria Northrup (Pharmacology)
- 2017-current: PhD Landon Getz (Micro)
- 2017-2020: PhD: Antonios Diab (Pharmacology)
- 2016-2020: PhD: Mohammad Sultan (Pathology)
- 2017-2020: MSc Dandan Zhao (Biochem)
- 2017-2019: MSc: Meagan McKenna (Pharmacology)
- 2015-2017: PhD: Jenni-Marie Ratten (Biology)
- 2014-2016: MSc: Haila Kottwitz (Biology)
- 2014-2017: MSc: Ross Porter (Pharmacology)

THESIS EXAMINER

- 2021/03: MSc Thesis Examiner, Connor Mackie, Biology, Dalhousie.
- 2020/08: PhD External Examiner, Jacob Luber, Bioinformatics and Integrative Genomics, Harvard Medical School
- 2020/06: PhD Thesis Examiner, Mohammad Sultan, Pathology, Dalhousie.
- 2020/04: MSc Thesis Examiner, Dandan Zhao, Biochemistry and Molecular Biology, Dalhousie.
- 2018/11: PhD External Examiner, Mehrbod Estaki, UBC (Okanagan campus)

- 2017/06: PhD Thesis Examiner, Jenni-Marie Ratten, Biology, Dalhousie
- 2016/08: MSc Thesis Examiner, Rana Bashwih, Bioinformatics, Dalhousie.
- 2016/07: MSc Thesis Examiner, Tiandai Gao, Medical Research Graduate Program, Dalhousie.
- 2016/04: MSc Thesis Examiner, Alex Keddy, Computer Science, Dalhousie
- 2016/04: MSc Thesis Examiner, Haila Kottwitz, Microbiology & Immunology, Dalhousie
- 2016/01: PhD Thesis Examiner, Helen Dranse, Pharmacology, Dalhousie
- 2015/12: MSc Thesis Examiner, Soheila Abachi, Agriculture Dalhousie
- 2015/02: MSc Thesis Examiner, Jillian Rourke, Pharmacology, Dalhousie University

SERVICE TO PROFESSION

- 2019/12: Executive organizing committee, Genomics in Medicine – Emerging Technologies and Bioinformatic Challenges, Dalhousie University, Halifax, NS. Dec. 5-6, 2019
- 2017/01: Lead organizer, Picchione Lecture Series: Using Genetics to Find New Treatments of Disease, Halifax Public Library, Halifax, NS.
- 2016/09: Lead organizer, Dalhousie Microbiome Research Symposium, Dalhousie.
- 2016/04: Invited attendee of GOBLET/Elixer Workshop for Metagenomics Training, EMBL-EBI, Hinxton, UK
- 2015/08: Invited attendee of NimBIOS Investigative Workshop: Computational Advances in Microbiome Research, Knoxville, TN, USA
- 2015/04: Lead organizer, Microbiome Research Symposium, Dalhousie
- 2015/4 Judge for Department of Pediatrics Research Trainee Day
- 2014/5 Judge for Department of Pathology Research Day
- 2014 & 2015 Judge for Integrated Health Research Training Partnership
- 2014 - current: Lead organizer, DalMUG Journal Club (bi-monthly), Dalhousie University
- 2014: Founder of the Integrated Microbiome Resource (<http://imr.bio>)
- 2014: Founder of Dalhousie Microbiome User Group (DalMUG): <http://dalmug.org/>
- 2014: Organizing member of the Canadian Microbiome website: <http://microbiomecanada.ca>

TEACHING

2021	BIOC4403 Genes & Genomes – Guest Instructor (1 hour)	Dalhousie University
2021	PHAC 4001/5409 Pharmacology II – Instructor (5 hours)	Dalhousie University
2020	PHAC 4001/5409 Pharmacology II – Instructor (9 hours)	Dalhousie University
2019	PHAC3001: Pharmacology I – Instructor (3 hours)	Dalhousie University
2019	DENT2117: Pharmacology II – Instructor (5 hours)	Dalhousie University
2019	Topics in Modern Biology (BIOL 6999) “Big Data in Biology - From Cells to the Biosphere.” Invited Guest Instructor (6 hours)	University of Puerto Rico San Juan, Puerto Rico
2019	DENQ 3000: Dentistry: Pharmacology Module – Instructor (4 hours)	Dalhousie University
2019	PHAC 1470: Pharmacology for Pharmacy – Instructor (2 hours)	Dalhousie University
2019	PHAC 4001/5409 Pharmacology II – Instructor (7 hours)	Dalhousie University
2019	PHAC3000: Experiential Learning in Pharmacology	Dalhousie University

2018	CIVL7000: Directed Studies in Civil Engineering II - Advanced analysis of metagenomic data	Dalhousie University
2018	DENT 2117: Pharmacology II – Instructor (5 hours)	Dalhousie University
2018	Canadian Bioinformatics Workshop: Metagenomic Analysis – Faculty Instructor – Faculty Instructor (4 hours)	Toronto, ON
2018	DENQ 3000: Dentistry: Pharmacology Module – Instructor (4 hours)	Dalhousie University
2018	PHAC 1470: Pharmacology for Pharmacy – Instructor (2 hours)	Dalhousie University
2018	PHAC 4001/5409 Pharmacology II – Instructor (7 hours)	Dalhousie University
2017	Metagenomics Bioinformatics Workshop – Instructor (3 hours)	EMBL-EBI, Hinxton, UK
2017	CIHR/CBW Microbiome Summer School – Faculty Instructor (8 hours)	Laval, Quebec City, QC
2017	MICI 5003: Special Topics in Microbiome Analysis – Instructor (Created and taught entire course)	Dalhousie University
2017	PHAC 1470: Pharmacology for Pharmacy – Instructor (2 hours)	Dalhousie University
2017	PHAC 4001/5409 Pharmacology II – Instructor (7 hours)	Dalhousie University
2016	Metagenomics Bioinformatics Workshop – Instructor (3 hours)	EMBL-EBI, Hinxton, UK
2016	Strategies and Techniques for Analyzing Microbial Population Structure (STAMPS)– Faculty Instructor (4 hours)	MBL, Woods Hole, MA
2016	Canadian Bioinformatics Workshop: Metagenomic Analysis – Faculty Instructor (8 hours)	UBC, Vancouver, BC
2016	GLBIO/CCBC Microbiome Workshop – Instructor/Organizer (3 hours)	University of Toronto
2016	PHAC 1470: Pharmacology for Pharmacy – Instructor (2 hours)	Dalhousie University
2016	PHAC 4001/5409 Pharmacology II – Instructor (3 hours)	Dalhousie University
2016	Professional Competencies MED 1 (18 x 3 hrs =54 hours)	Dalhousie University
2015	Strategies and Techniques for Analyzing Microbial Population Structure (STAMPS)– Faculty Instructor (4 hours)	MBL, Woods Hole, MA
2015	Canadian Bioinformatics Workshop: Metagenomic Analysis – Faculty Instructor (8 hours)	Halifax, NS
	*Note: First year to offer workshop and created all original content	
2015	PHAC 4001/5409 Pharmacology II – Instructor (3 hours)	Dalhousie University
2013	BIOL 5705 Graduate Modules Course – Instructor (Fall)	Dalhousie University
2013	BIOC 4010/5010: Bioinformatics -- Instructor	Dalhousie University
2013	BIOL 5705 Graduate Modules Course – Instructor	Dalhousie University
2012	BIOL 5705 Graduate Modules Course -- Instructor	Dalhousie University
2011	SuperNOVA Summer Camp -- Presenter	Dalhousie University
2008	BCIT BIOT 5800 Bioinformatics -- Summer Instructor	Burnaby, BC
2007	Canadian Bioinformatics Workshop -- Instructor	UBC, Vancouver, BC
2005	Problem Based Learning -- Teaching Assistant	Simon Fraser University
2004	Shad Valley Students Orientation -- Workshop Teacher	Simon Fraser University