Curriculum vitae
Mark Alun Lewis FRS FRSC

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University of Victoria
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Birth Date: December 7, 1962

Nationality: Canadian

Degrees: *University of Oxford*
D.Phil. in Mathematics (Mathematical Biology), November 1990. Thesis entitled "Analysis of Dynamic and Stationary Biological Pattern Formation." Supervised by Professor J. D. Murray, FRS.

University of Victoria, Canada
B.Sc., Double Major in Biology and Combined Mathematics/Computer Science, May 1987, First Class.

Positions:

7/22-present *Professor and Gilbert and Betty Kennedy Chair in Mathematical Biology*
Department of Mathematics and Statistics and Department of Biology
University of Victoria

7/22-present *Professor Emeritus*
Department of Mathematical and Statistical Sciences and Department of Biological Sciences, University of Alberta.

7/01–6/22 *Professor and Senior Canada Research Chair in Mathematical Biology*
Department of Mathematical and Statistical Sciences and Department of Biological Sciences, University of Alberta.

1/02-8/17 *Director, Centre for Mathematical Biology*
University of Alberta

7/12-6/14 *Killam Research Fellow*
University of Alberta

9/11-12/11 *Research Fellow*
Oxford Centre for Collaborative Applied Mathematics

10/11-12/11 *Visiting Fellow*
Saint Catherine's College, Oxford

7/00–2/02	*Professor* Department of Mathematics, University of Utah.
7/95–7/00	*Associate Professor* Department of Mathematics, University of Utah.
5/95–6/02	*Adjunct Faculty* Department of Biology, University of Utah.
7/93–01/25	*Affiliate Faculty* Department of Applied Mathematics, University of Washington, Seattle.
4/99–7/99	*Senior Visitor* Institute for Industrial and Applied Mathematics, University of Minnesota.
9/98–12/98	*Research Fellow* Centre for Population Biology at Silwood Park, Imperial College, University of London.
95 winter	*Visiting Fellow* Department of Ecology and Evolution, Princeton University (Sloan Research Fellow).
8/92-6/95	*Assistant Professor* Department of Mathematics, University of Utah.
1/91–7/92	*Research Associate* Mathematical Biology, jointly with the departments of Applied Mathematics and Zoology, University of Washington, working with Professors J.D. Murray and P. Kareiva, and supported by an NSERC of Canada Postdoctoral Fellowship Award.

Awards:

- Alfred P. Sloan Research Fellowship, June 1994–September 1996;
- National Young Investigator Award (NSF), October 1994–September 1999;
- University of Utah Faculty Fellowship, April 1998–June 1998;
- Senior Canada Research Chair in Mathematical Biology, July 2001–2022;
- Killam Annual Professorship (Alberta), 2006–7;
- American Society of Naturalists Presidential Award, 2006;
- McCalla Professorship (Alberta), 2007–8;
- Senior Canada Research Chair in Mathematical Biology (renewed), July 2008–present;
- Lee Segel Prize for Best Original Research Paper, 2008;
- Canadian Applied and Industrial Mathematics Society Research Prize, 2009;
- CRM-Fields-PIMS Prize for Exceptional Research in Mathematics, 2011;
- Fields Institute Fellow, 2011-present;
- NSERC Discovery Accelerator, 2011-14;
- University of Victoria Distinguished Alumni Award, 2012;
- Killam Research Fellowship, July 2012–June 2014;
- Alberta Science and Technology (ASTech) Honouree, 2012;
- Fellow of the Royal Society of Canada, 2015;

- Josephine Mitchell Graduate Mentoring Award (Alberta), 2016;
- Faculty of Science Graduate Mentoring Award (Alberta), 2016;
- Killam Award for Excellence in Mentoring (Alberta), 2016;
- Faculty of Science Instructor of Distinction Honor Roll (Alberta), 2016;
- Fellow of the Society for Industrial and Applied Mathematics, 2017;
- Fellow of the Society for Mathematical Biology, 2017;
- Fellow of the Canadian Mathematical Society, 2018;
- J. Gordin Kaplan Award for Excellence in Research, 2020;
- Gilbert and Betty Kennedy Chair in Mathematical Biology, 2022;
- Akira Okubo Prize, 2024;
- Fellow of the Royal Society, 2025.

Distinguished Lectures:

- 22nd Annual Ostrum Lecture, Washington State University (2003);
- Lansdowne Lecture, University of Victoria (2006);
- Plenary Speaker, 7th International Congress on Industrial and Applied Mathematics (2011);
- Ireland Lecture, University of New Brunswick (2012);
- Howard Rowlee Lecture, University of Nebraska (2012);
- Invited Speaker, 1st Mathematical Congress of the Americas (2013);
- Bullitt Lecture, University of Louisville (2014);
- 46th Annual John H. Barrett Lecture, University of Tennessee (2016);
- Distinguished Lecture at the CRM-ISM Colloquium, Université Laval (2018);
- Plenary Speaker, 6th G. J. Butler Memorial Conference on Differential Equations and Population Biology, University of Alberta (2018);
- Centre de recherches mathématiques “Great Lectures” series, Université de Montréal, Public lecture (2019);
- PIMS UVic Distinguished Lecture (2019);
- Keynote Speaker, Joint Mathematics Meeting, American Mathematical Society (AMS) (2020);
- Plenary Speaker Eighth International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems (ICMA VIII) (2022);
- Mitacs Innovation Lecture, Canadian Mathematical Society Winter Meeting (2024);
- Plenary Speaker, 2025 Society for Mathematical Biology (SMB) (2025)

Major Grants:

Current

Government of Alberta, Minister of Environment and Protected Areas, Lake Sturgeon Population Estimate Research. 2024-2025, Award Amount $35,000

MITACS Accelerate, Assessing the population biology and fishery dynamics of spot prawns (Pandalus platyceros) in Kitasoo/Xai’xais territory (Atkinson) 2024-2025 Award Amount $33,750

Spirit Bear Research Foundation, Assessing the population biology and fishery dynamics of spot prawns (Pandalus platyceros) in Kitasoo/Xai’xais territory (Atkinson partnership with MITACS) 2024-2025 Award Amount $11,250

Natural Science and Engineering Research Council of Canada, Spatial Dynamics in Ecology 2024-2029 Award Amount $720,000 ($144,000 per annum)

MITACS Elevate, Quantitative analysis of forestry effects on Pacific salmon abundance (Kuruvilla) 2024-2026 Award Amount $55,003.67

Pacific Institute for Mathematical Sciences Maud Menten Institute (PIMS Research Network in Mathematical Biology) 2024-2027 (Stephanie Portet, Co-PI) Award Amount $450,000

MITACS Accelerate Modelling long-term dynamics of Mountain Pine Beetle under climate change. 2023-2025, Award Amount $155,430

Alberta Innovates – CWD Research Program Addressing mule deer harvest strategies for Chronic Wasting Disease management using an Integrative Population Model 2023-2025 (Evelyn Merrill, PI) Award Amount $248,526

University of Victoria, Start-up Grant, 2022, Award Amount $150,000

Alberta Jobs, Economy and Innovation (JEI), The Banff International Research Station for Mathematical Innovation and Discovery (BIRS), 2022-2027 (Malabika Pramanik PI) Award Amount $3,994,054

Natural Sciences and Engineering Research Council of Canada, The Banff International Research Station for Mathematical Innovation and Discovery (BIRS), 2022-2027 (Malabika Pramanik PI) Award Amount $4,970,880

University of Victoria, Gilbert and Betty Chair in Mathematical Biology, 2021-2028, Award Amount $140,000

Department of Fisheries and Oceans, Improving the biological understanding and management of a trap fishery in British Columbia 2021-2025, Award Amount $9,200

Pacific Prawn Fisherman's Association, Improving the biological understanding and management of a trap fishery in British Columbia 2021-2025, Award Amount $30,272

Natural Sciences and Engineering Research Council of Canada, Alliance Grants (ALLRP), Improving the biological understanding and management of a trap fishery in British Columbia 2021-2025, Award Amount $20,000

Genome Canada, LSARP, TRIA-FoR: Transformative risk assessment and forest resilience using genomic tools for mountain pine beetle outbreak 2021-2025 (Janice Cooke and Catherine Cullingham, PI) Award Amount $2,999,994

Genome Alberta, LSARP, TRIA-FoR: Transformative risk assessment and forest resilience using genomic tools for mountain pine beetle outbreak 2021-2025 (Janice Cooke and Catherine Cullingham, PI) Award Amount $574,645

Past

Alberta Environment, Enhancing Environmental Science in Alberta Program (EESA) Estimates of population size and life history parameters of Lake Sturgeon (Acipenser fulvescens) from volunteer angler data (2022-2024) (Mark Poesch, Co-PI) Award Amount $88,000

New Frontiers in Research Fund (NFRF) – Rapid Response 2021, Developing rapid response to emerging fisheries issues with citizen science, mobile apps and machine learning 2022-2024, Award Amount $237,970

Natural Science and Engineering Research Council of Canada, Spatial Dynamics in Ecology 2018-2024, Award amount: $702,000 ($117,000 per annum, 6 years).

North Island Marine Mammal Stewardship Assoc. (NIMMSA) Investigating the population biology of spot prawns (Pandalus platyceros) in the Northeast Vancouver Island, Broughton Archipelago, and mainland inlets 2022-2023, Award Amount $7500

fRI Research, Modelling long-term dynamics of MPB in Alberta under climate change 2022-2024, Award Amount $109,101.60

Natural Sciences and Engineering Research Council of Canada, EIDM, Canadian network for modelling infectious disease 2021-2024 (Caroline Colijn, PI), Award Amount $2,500,000

Natural Sciences and Engineering Research Council of Canada, EIDM, One health modelling network for emerging infections 2021-2024 (Huaiping Zhu, PI), Award Amount $2,500,000

Canada Research Chairs Program - University of Alberta, Canada Research Chair in Mathematical Biology (Tier I) 2015-2022. Award Amount: $1,400,000 ($200,000 per annum).

Faculty of Science – University of Alberta, CRC Research Support, 2015-2022. Award Amount $140,000 ($20,000 per annum)

The Pacific Institute for the Mathematical Sciences (PIMS), Mathematical Biology Seminar Funding 2020-2021 (Jay Newby, PI) Award Amount $4,000.

Alberta Innovates (COVID 19 Rapid Response II - Alberta Wave), Predicting and managing COVID-19 pandemic dynamics using machine learning 2020-2021, Award Amount $220,545.

Canadian Foundation for Innovation (Infrastructure Operating Fund), Assessment and analysis of ecological dynamics under environmental change, 2016-2021, Award Amount $38,765

Alberta Innovates Bio Solution/Alberta Prion Research Institute (APRI), Quantifying contact rates for modelling CWD transmission in wild mule deer populations, 2017-2021, (Evelyn Merrill PI) Award Amount $302,857

Wildlife Management Institute (WMI), Modeling Spatial Harvest Strategies for Chronic Wasting Disease Transmission, 2019-2020 (Evelyn Merrill PI) Award Amount $25,891 USD

Alberta Environment and Parks, Belief Network and Decision Network Modeling of Whirling Disease in Alberta, 2017-2021, Award Amount $178,800.

Alberta Environment and Parks, Assessing the movement and behavior of anglers and the risk of spreading whirling disease, 2019-2020, (Mark Poesch and Mark Lewis PIs), Award Amount $129,690.

Natural Sciences and Engineering Research Council of Canada, CTRMS, The Banff International Research Station for Mathematical Innovation and Discovery (BIRS), 2016-2020 (Nassif Ghoussoub PI) Award Amount $3,405,000.

Alberta Innovation and Advanced Education, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), 2016-2020 (Nassif Ghoussoub PI) Award Amount $4,042,918.

Natural Sciences and Engineering Research Council of Canada, CTRMS, The Pacific Institute for the Mathematical Sciences (PIMS), 2014-2020 (Alejandro Adem PI) Award Amount $6,930,536.

Alberta Innovation and Advanced Education, The Pacific Institute for the Mathematical Sciences (PIMS), 2014-2020 (Alejandro Adem PI) Award Amount $1,350,000

Natural Science and Engineering Research Council of Canada Collaborative Research and Training Experience (CREATE), Enhancing Canada's Prosperity through Innovative Environmental Assessment, Monitoring and Management, 2014-2020 (Stan Boutin PI) Award amount $1,650,000.

Alberta Environment and Parks, A statistical approach for assessing errors in greenhouse gas flux measurements from mineable and in situ oil sands development, 2018-2019, Award Amount $20,000.

Alberta Conservation Association Cyanobacterial Blooms and their Toxic Effects on Fish Populations, 2018-2019, (Hao Wang, PI) Award Amount $26,000

Canadian Foundation for Innovation (John Evans Leadership Fund), Assessment and analysis of ecological dynamics under environmental change, 2014-2018, Award Amount $155,059.

Alberta Innovation and Advanced Education, Assessment and analysis of ecological dynamics under environmental change, 2014-2018, Award Amount $155,059.

Natural Sciences and Engineering Research Council of Canada Strategic Network Grants Program and Partners, The NSERC TRIA Network: Turning risk into action for the Mountain Pine Beetle epidemic, 2013-2017 (Janice Cooke PI). Award amount $2,977,148.

Natural Science and Engineering Research Council of Canada, Spatial Dynamics in Ecology 2011–2018. Award amount: $553,000 ($79,000 per annum).

Alberta Innovates Bio Solution, Alberta Prion Research Institute (APRI), Experimental harvests for chronic wasting disease (CWD) control in wild Cervids, 2014-2016 (Evelyn Merrill PI) Award Amount $457,757.

Alberta Innovates and Advanced Education, The Pacific Institute for the Mathematical Sciences (PIMS), 2014-2016 (Alejandro Adem PI) Award Amount $1,350,000.

University of Alberta Provost's Digital Learning Committee, Blended Learning Award for Calculus in the Life Sciences I, 2015-2016 (Gerda Devries PI) Award Amount $20,650.

Natural Sciences and Engineering Research Council of Canada Strategic Network Grants Program and Partners, Canadian Aquatic Invasive Species Network II, 2011-2015 (Hugh MacIsaac PI). Award amount $6,557,500.

Natural Sciences and Engineering Research Council of Canada, Research Tools and Instruments (RTI) Category 1, Biotelemetry System: Infrastructure for assessing disease transmission in wildlife, 2014 (Evelyn Merrill PI) Award amount $150,000.

Oil Sands Research and Information Network (OSRIN), Modelling and assessing the impact of oil sands contaminants on aquatic food webs, 2014, Award amount $25,000

Alberta Innovates Bio Solutions, Value Chain Sustainability program, Translating Mountain Pine Beetle Outputs into Genomics-Enhanced Environmental and Economic Risk Models. 2012-2015 (Janice Cooke PI). Award amount: $398,000 ($199,000 from Genome Alberta and $199,000 from Alberta Innovates Bio Solutions).

Canada Council for the Arts, Killam Research Fellowship 2012-2014, Award amount: $140,000 ($70,000 per annum).

Killam Research Fellowship (Canada Council for the Arts), Research Supplement, Faculty of Science, University of Alberta, 2012-2014. Award Amount: $25,000.

Killam Research Fellowship (Canada Council for the Arts), Research Supplement, Office of the Vice President of Research, University of Alberta, 2012-2014. Award amount: $50,000 ($25,000 per annum).

Canada Research Chairs Program (University of Alberta, Canada Research Chair in Mathematical Biology (Tier I) 2008-2015. Award Amount: $1,400,000 ($200,000 per annum).

Natural Science and Engineering Research Council of Canada, Discovery Accelerator, 2011–2014. Award amount: $120,000 ($40,000 per annum).

Natural Science and Engineering Research Council of Canada, Major Resources Support, Pacific Institute for Mathematical Sciences 2008–2014 (PI Ivar Ekeland). Award amount: $6,600,000.

Alberta Advanced Education and Technology, Pacific Institute for Mathematical Sciences 2010-2013 (Alejandro Adem PI) Award amount: $1,200,000.

Pacific Institute for Math Sciences (PIMS), Scientific Events, Math Biology Summer Workshop 2010 (Gerda de Vries PI). Award Amount $5,000.

Natural Sciences and Engineering Research Council of Canada (RTI), University of Alberta PIMS Collaborative Research Environment 2010-2011 (Charles Doran PI), Award Amount $23,630.

Alberta Prion Research Institute, Decision support tools for Chronic Wasting Diseases 2009-2011 (Evelyn Merrill PI). Award Amount $117,878.

Alberta Heritage Foundation for Science and Engineering, Alberta Water Research Institute 2009-2011 (Ed McCauley PI) Amount: $1,623,000.

Canadian Aquatic Invasive Species Network, Postdoctoral Funding, 2009-2011 (Carly Strasser PI). Award Amount $33,500.

Canadian Aquatic Invasive Species Network, PDF Travel Stipend, Plankton survivorship analyses 2009. Award Amount: $5,088.

Canadian Aquatic Invasive Species Network, Travel (SNEI), Mechanistic model for *Bythotrephes* 2009. Award Amount: $2,100.

Alberta Sustainable Resource Development, Instream flow needs: an ecologically dynamic approach 2008-2011. Award amount $60,000.

Mathematics of Information Technology and Complex Systems, MITACS NCE Accelerated BC Grad Res Internship (coPI Martin Krkošek) May, 2008 – November, 2008. Award amount: $15,000.

BC Pacific Salmon Forum, Estimating sea lice transmission from farm to wild juvenile salmon 2007-2008 (coPI Martin Krkošek). Award amount $20,000.

BC Pacific Salmon Forum, Survival and predation field experiments 2007-2008 (coPI Martin Krkošek). Award amount $19,900.

Natural Science and Engineering Council of Canada, NSERC-MITACS Industry, Joint IPS Internship (PhD Student Andria Dawson) 2007-2010. Award Amount: $67,500.

Natural Science and Engineering Council of Canada, NSERC-MITACS Industry, Joint IPS Internship (Research Allowance) (PhD Student Andria Dawson) 2007-2010. Award Amount: $25,000.

University of Alberta, McCalla Funding, 2007-2009. Award Amount $24,000.

Alberta Heritage Foundation for Science and Engineering Research, Alberta Ingenuity Fund, AIF Studentship (postdoc, Frank Hilker) 2006-2008. Award Amount: $110,000.

University of Alberta, Centre for Mathematical Biology 2006-2011. Award Amount: $352,100.

Natural Science and Engineering Research Council of Canada, Spatial Dynamics in Ecology 2006–2011. Award amount: $259,000 ($51,800 per annum).

Natural Science and Engineering Research Council of Canada, Canadian Aquatic Invasive Species Network 2006–2011 (Hugh MacIsaac PI). Award amount: $3,781,944.

Alberta Heritage Foundation for Science and Engineering, Alberta Ingenuity Fund, Ingenuity PhD Student Scholarship (Hannah McKenzie). 2005-2009. Award amount: $52,419.

Mathematics of Information Technology and Complex Systems, MITACS Industry, 2004-2009. Award amount: $120,837.

Natural Resources Canada Mountain Pine Beetle Initiative, Modeling Spatiotemporal patterns of MPB infestation 2004–2007 (CoPI Fangliang He). Award amount: $394,090.

MITACS - Networks of Centres of Excellence, Network for Biological Invasions and Dispersal Research 2003–2010 (J. Watmough PI). Award amount from NCE (not including matching from nonacademic participants). Award amount: $690,000.

Natural Sciences and Engineering Research Council of Canada, Collaborative Research Opportunities Grant: Ecological Forecasting and Risk Analysis of Nonindigenous Species. April 2003–April 2007 (CoPI Hugh MacIsaac). Award amount: $685,292.

National Science Foundation, University of Notre Dame subcontract, Ecological Forecasting and Risk Analysis of Nonindenous Species. September 2002–September 2007.
Award amount: $75,000.

Natural Sciences and Engineering Research Council of Canada, Models for dispersal in spatial ecology. April 2002–April 2006. Award amount: $180,000 ($45,000 per annum).

Endowment Fund for the Future, University of Alberta, Distinguished visitor fund.
February 2002–April 2002 (CoPI Thomas Hillen). Total Award amount: $8,836.

University of Alberta, Faculty of Science, New appointment supplement, 2001-2005. Award amount: $310,000.

Canada Research Chair in Mathematical Biology, Chair's Fund for Research. University of Alberta, July 2001–July 2008. Award amount: $483,000.

Innovation and Science Research Investments Program, Research Program in Mathematical Biology and Centre for Mathematical Biology at the University of Alberta, July 2001. Total Award amount: $95,000.

Canadian Foundation for Innovation, Research Program in Mathematical Biology and Centre for Mathematical Biology at the University of Alberta, July 2001.
Total Award amount: $95,000.

National Science Foundation, Mathematical Sciences: International Conference on Mathematics in Biology at the University of Utah, August 2000. Total Award amount: US$13,000.

National Science Foundation, Mathematical Sciences: Discrete-time models for biological invasions, August 1999 — July 2002. Award is joint with M. Neubert, M. Kot and B. Fagan.
Total Award amount: $380,000.00. Utah portion: US$127,500.

National Science Foundation, Mathematical Sciences: Gordon Research Conference on Theoretical Biology and Biomathematics, June 1998. Award is joint with J. Milton. Award amount: US$19,296.

Funding Incentive Seed Grant Program, University of Utah, Fluid flow model for optimizing high-frequency ventilation of the lung, April 1997 – September 1998. CoPIs D. Eyre, A. Fogelson, and S. Kern. Award amount: US$35,000.

National Science Foundation, Mathematical Sciences: Special Year in Mathematical Biology 1995-1996. Award is joint with H. Othmer and F. Adler. Award amount: US$309,124.

Alfred P. Sloan Research Fellowship, Mathematics: June 1994–September 1996.
Award amount: US$30,000.

National Science Foundation National Young Investigator Award: October 1994 – July 2000. Award amount: US$187,802.

National Science Foundation, Mathematical Sciences: Modelling Territorial Patterns and Stability of Wolf-Deer Interactions, September 1992 – August 1995. Award amount: US$124,380.

Environmental Protection Agency: Developing Guidelines for the Assessment of "Spread Risk" Using Microbe Field Trial Data: A Model Based Approach, September 1992 – August 1994. Award joint with P. Kareiva (project manager) and J.D. Murray. Award amount: US$163,858.

Selected Invited Lectures (since 1995):

1995 Dept. Mathematics and Statistics, University of Victoria; Dept. Applied Mathematics, University of Washington, Seattle; Dept. Mathematics, University of British Columbia, Vancouver; Woods Hole Oceanographic Institute, Woods Hole; SWRIMS Conference on Mathematical Modeling in Population Biology, Logan, Utah.

1996 Spatial Ecology Working Group, NCEAS, Santa Barbara; International Conference on Dynamical Systems and Differential Equations, Missouri; Kyoto Conference on Mathematical Biology, Kyoto, Japan; NCEAS workshop on the role of dispersal in the Holocene expansion of trees, Santa

Barbara; Society for Mathematical Biology Annual Meeting, Seattle; 3rd European Conference on Mathematics Applied to Biology and Medicine, Heidelberg, Germany.

1997 International Conference on Differential Equations with Applications to Biology, Halifax; Society for Mathematical Biology Annual Meeting, Raleigh;
Species Range Working Group, NCEAS, Santa Barbara.

1998 Dept. Math, University of Minnesota; Dept. Applied Math, University of Washington; Institute for Theoretical Dynamics, University of Davis; Dept. Math, Duke University; Biostatistics, North Carolina State University; AMS Western Division Meeting, Davis; Dept. Biology, Arizona State University; Science at Breakfast Lecture, U Utah; Dept.Math, Bath University; Dept. Biology, Imperial College, University of London; Dept. Math, Heriot Watt University; Dept. Math, Dundee University; Kings College, Cambridge University; Dept. Math, University of Heidelberg; Institute for Theoretical Biology, Leiden University; Dept. Math Utrecht University; AMS Western Division Meeting, Tucson.

1999 Institute for Mathematics and its Applications Minneapolis; Theory and Mathematics in Biology and Medicine, Amsterdam; Ecological Society of America, Spokane; Oberwolfach, Germany.

2000 Dept. Math, University of Alberta; Dept. Biology, University of Alberta; Dept. Math, University of British Columbia; Dept. Biology, University of Santa Barbara, California; UC San Diego Supercomputer Institute; Alberta Entomological Society; Max Planck Institute, Leipzig.

2001 NCEAS workshop on a New Synthesis of Demography and Dispersal (group participant), Santa Barbara, California; Dept. Math, UC Irvine; Dept. Math, University of Utah; Canadian Applied Mathematics Society, University of Victoria, Canada; Society for Mathematical Biology Meeting, Hawaii; 2001 Canada-China Mathematics Congress, Vancouver, Canada; Newton Institute, Cambridge.

2002 Department of Biological Sciences, University of Miami; Department of Mathematical Sciences, University of Miami; SIAM Life-Sciences Conference, Boston; Bio-X EFF Distinguished Lecture Series, Edmonton, Alberta; Gordon Research Conference on Theoretical Biology and Biomathematics, Tilton, New Hampshire; 5th Americas Conference of Differential Equations and Dynamical Systems, Edmonton, Alberta; International Conference on Modeling Pattern in Biology, Chubu, Japan; Woods Hole Annual Retreat in Mathematical Biology, Nantucket

2003 22nd Annual Ostrum Lecturer, Washington State University; Topical Lecturer SIAM/CAIMS annual meeting, Montreal; Mini-symposium Speaker at Canadian Mathematical Society Annual General Meeting, Edmonton; Society for Mathematical Biology meeting, Dundee, Banff International Research Station, Fields Mathematics Institute workshop on Pattern Formation in Physics, Toronto.

2004 Plenary Speaker, Mathematics in Technology and Complex Systems 5th Annual Conference, Halifax; Plenary Speaker, joint annual meeting of the Canadian Applied Math Society and Canadian Mathematical Society, Halifax; Plenary Speaker, American Institute for Mathematical

Sciences meeting, Pomona; Plenary Speaker, Annual Meeting of Japan Society for Mathematical Biology; Invited Speaker, DIVERSITAS workshop on Integrated modelling of economies and ecosystems, Paris; Invited Speaker, Banff International Research Station.

2005 Dept. Zoology, University of British Columbia; Dept. Organismal and Evolutionary Biology, Harvard University; Principal speaker, Sixth Mississippi State–UAB Conference on Differential Equations and Computational Simulations; Graduate summer school lecturer, Park City Math Institute (Institute for Advanced Study); Canadian Mathematical Society Winter Meeting, Victoria.

2006 Lansdowne Lecturer, University of Victoria; Invited speaker, American Association for the Advancement of Science; Keynote speaker, Western Conference on Linear Algebra; Dept. Biology, University of Toledo; Plenary speaker, Mexican Biomathematics Autumn School (Xalapa); PIMS Distinguished Lecturer, University of British Columbia.

2007 Invited Participant, Summit of Scientists on Aquaculture and the Protection of Wild Salmon; Colloquium Speaker, Dept. Biology, University of Calgary; Interdisciplinary Mathematical Biology Speaker, Iowa State University; Plenary Speaker, New Zealand Institute of Mathematics and its Applications programme on Modelling Invasive Species and Weed Impact; Plenary Speaker, 2007 Alberta North-South Dialogue on Mathematics; Invited Speaker, Canadian Applied and Industrial Mathematics Society Annual Meeting; Invited Speaker, Jim Keener 60th Birthday Conference; Invited Speaker, Ecological Society of America Meeting; Plenary Speaker, Mathematical Biosciences Institute Workshop for Young Researchers in Mathematical Biology; Plenary Speaker, PIMS International Graduate Training Centre in Mathematical Biology (First Graduate Research Summit); Invited Speaker, Mathematical Biology Conference on the Occasion of Jim Cushing's 65th Birthday.

2008 Distinguished Lecturer in the Program for Interdisciplinary Mathematics, Ecology, and Statistics, Colorado State University; Invited Speaker, Banff International Research Station; Plenary Speaker, Society for Mathematical Biology Meeting, Toronto; Plenary Speaker, Western Section of the American Mathematical Society Meeting, Vancouver; Invited Speaker, PIMS Pacific Northwest meeting on Partial Differential Equations; Principal Speaker, Hans Weinbergers 80^{th} Birthday Conference; Invited Speaker, University of Washington Boeing Distinguished Colloquium; Invited Speaker, Institute for Theoretical and Mathematical Ecology, University of Miami.

2009 Invited Speaker, Center for Infectious Disease Dynamics, Penn State University; CRM Distinguished Visitor, University of Ottawa; Speaker, Distinguished Lecture Series, Centre for Scientific Computation, Simon Fraser University; Invited Speaker, Workshop on Statistical Methods for Dynamic System Models, Simon Fraser University; Canadian Applied and Industrial Mathematics Society Research Prize Lecture; Invited Public Lecture at York U50 Colloquium Series on Mathematics and Interdisciplinary Science; Canadian Aquatic Invasive Species Network Annual General Meeting, Halifax; Invited Speaker, Workshop on Analysis of Self-Organization in Biology, Banff International Research Station; Invited Speaker, Workshop on Adaptive Movement of Interacting Species, Fields Institute; Public Speaker at the University of Maryland's Bioscience Day.

2010 Speaker, Canadian Aquatic Invasive Species Annual General Meeting; Invited Storer Lecturer, University of California Davis, Plenary Speaker, Sea Lice 2010 Modelling Workshop, Victoria; Guest Lecturer, Mathematics for Biological Networks Summer School Course, University of Victoria; Plenary Speaker, Third Conference on Computational and Mathematical Population Dynamics, Bordeaux; Departmental Seminar Speaker, Rennes Agrocampus, France; American Geophhysical Union AGM, San Francisco.

2011 CRM-Fields-PIMS Prize lecture, delivered at Centre de Recherches Mathematiques, Fields Institute, and Pacific Institute for Mathematical Sciences; Invited Speaker, Banff International Research Station; Invited Speaker, Mathematical Biology Workshop and IGTC Summit, Victoria; Plenary Speaker, 7th International Congress on Industrial and Applied Mathematics; Keynote Speaker, Mathematical and Theoretical Ecology 2011: linking models with ecological processes, Essex; Invited Seminar Speaker, Oxford Centre for Collaborative and Applied Mathematics; Invited Seminar Speaker, Oxford Centre for Mathematical Biology; Invited Speaker, Applied Mathematics Seminar Series, Department of Mathematics at the University of Leicester; Invited Speaker, Mathematics in Medicine and Biology Seminar Series, Department of Mathematics at the University of Nottingham; Seminar Speaker, NERC Centre for Ecology and Hydrology; Keynote Speaker, CANPDE Workshop on Mathematical Ecology, Heriot Watt University; Invited Colloquium Speaker (Landscapes in Mathematical Sciences), Bath University, Invited Speaker, Bristol Centre for Complexity Sciences.

2012 Invited Ireland Lectureship, University of New Brunswick; Invited Howard Rowlee Lecturer, University of Nebraska; Invited Speaker, Conference on Mathematical Ecology, University of Nebraska; Invited Speaker, PIMS Lunchbox Series, Calgary; Distinguished Guest Speaker, Center for Complex Biological Systems, University of California Irvine; Applied Mathematics Colloquium Speaker, University of California Los Angeles; Invited Workshop Speaker, Mathematical Biosciences Institute, Columbus; Plenary Speaker, Harbin Institute of Technology Workshop on Mathematical Modeling of Biological Processes, Harbin, China; Plenary Speaker, Models in Population Dynamics and Ecology (MPDE-12), Santa Maria, Brazil; Invited Speaker, Integrative Biology Seminar, University of Austin, Texas; Invited Speaker, Everything Disperses to Miami: The Role of Movement and Dispersal in Ecology, Epidemiology and Environmental Science, Miami.

2013 Invited Lecture, University of McGill Organismal Seminar Series; Invited Speaker, Centre for Applied Mathematics in Bioscience and Medicine, McGill University; PIMS Distinguished Speaker for Mathematics of Planet Earth, University of Victoria; Invited Speaker, Banff International Research Station; Plenary Speaker, PIMS Young Researcher's Conference, University of Alberta; Invited Speaker, Oxford Conference on Challenges in Applied Mathematics; Invited Speaker, Mathematical Congress of the Americas; Invited Speaker, Mathematical Biosciences Institute, Columbus, Ohio; Invited Speaker, Bristol Conference in Animal Movement in Confined Space.

2014 Invited Speaker, University of Victoria Colloquia; Invited Speaker, Mathematical Biosciences Institute, Columbus, Ohio; Colloquium Speaker, Departmental Colloquium, University of Louisville; Plenary Speaker, Alberta Mathematics Dialogue, Camrose Alberta; Plenary Speaker, 2014 Canadian Mathematical Society Summer Meeting; Colloquium Speaker, University of Urbana, Illinois; Colloquium Speaker, Global Change and Sustainability Centre, University of

Utah; Invited Speaker, ICTS-PIMS-IISER Pune Program on Advances in Mathematical Biology, Pune, India

2015 Plenary Speaker, Models in Population Dynamics and Ecology, Universidade Federal do ABC - UFABC, Centro de Matemática, Computação, Rio de Janeiro; Invited Speaker, Universidade de São Paulo, Departamento de Ecologia, Invited Speaker, International Workshop on Mathematics in the Life and Physical Sciences, Renmin University, Beijing, China; Invited Speaker, Micro and Macro Systems in the Life Sciences, Bedlewo, Poland; Invited Speaker, Uncertainty, Sensitivity and Predictability in Ecology: Mathematical Challenges and Ecological Applications, Mathematical Biosciences Institute.

2016 Keynote Speaker, CAIMS 2016, University of Alberta; Invited Speaker, University of Rennes; Invited Speaker, Global change impact on diseases and alien species expansion workshop, African Institute for Mathematical Sciences (AIMS), Capetown, South Africa; Plenary Speaker, 46th Annual John H. Barrett Memorial Lectures, Analysis and Modelling of PDEs in Spatial Ecology, University of Tennessee; Invited Speaker, Europe Society for Mathematical and Theoretical Biology (ESMTB), University of Nottingham; Plenary Speaker, CMPDE16, Marseilles, France; Invited Speaker, Integrodifference Equations in Ecology: 30 years and counting workshop, Banff; Invited Speaker, Population Models in the 21st Century, Mathematical Biosciences Institute.

2017 Colloquium speaker, Mathematics, Statistics & Actuarial Science (SoMSS) Colloquium , Arizona State University; Invited Speaker, CSEE 2017 symposium, Exploring the roles of mechanistic and phenomenological models in ecology, Victoria; Invited Speaker, U of A Science Alumni speaker, Victoria & Vancouver; Plenary Speaker, Society for Industrial and Applied Mathematics Annual General Meeting; Invited Speaker for Minisymposium on Dynamics of Infection at the Society for Mathematical Biology Annual General Meeting; Invited Speaker, Utah Alumni Conference, University of Utah; Invited Speaker, Conference on ecology and evolutionary biology, deterministic and stochastic models at Institut de Mathématiques de Toulouse; Invited Speaker for Conference on reaction-diffusion, propagation, modelling, Institute Henri Poincaré, Paris.

2018 Colloquium Speaker, McMaster University; Invited Speaker, Colloque des sciences mathematiques du Quebec, Laval University, Invited Speaker, Centre de recherches mathématiques, Université de Montréal; Distinguished Lecture at the CRM-ISM Colloquium, Université Laval, Invited Speaker, AARMS CRG Annual Meeting, Fredericton, NB; Plenary Speaker, Canadian Mathematical Society, Fredericton NB; Plenary Speaker, 6th G. J. Butler Memorial Conference on Differential Equations and Population Biology, UA; Plenary Lecture, ICM Satellite Conference: A Pan-Hemispheric Celebration, University of Miami; Colloquium Speaker, MBI Online Mathematical Biology Colloquium

2019 PIMS Distinguished Visitor, University of Victoria; Invited Speaker, Applied Mathematics Seminar UVic,; Invited speaker, PIMS UVic Distinguished Lecture, University of Victoria; Invited Speaker, Public Lecture, Centre de recherches mathématiques *"Great Lectures" series*, Université de Montréal; Invited Speaker, Ecology & Evolutionary Biology Seminar, University of Toronto; Invited Speaker, Musgamagw Dzawada'enuxw First Nations Fisheries Camp; Invited Speaker, P. Maini's 60th birthday workshop on growth & pattern formation, Oxford; Invited Speaker, 2019 CMS Winter Meeting; Plenary Lecture SIAM Pacific Northwest sectional meeting; Invited Minicourse, SIAM Meeting on Partial Differential Equations, Palm Springs

2020 Virtual Presentation, Applied Math Seminar at the University of Cardiff (Wales); Nonlinear Differential Equations and Applications Online Summer School, Harbin Institute of Technology (HIT); Invited Speaker (Virtual Presentation), Life on Planet Earth: Above and Beyond, Mathematical Biosciences Institute (MBI); Virtual Presentation, Centre for Applied Mathematics in Bioscience and Medicine (CAMBAM)**,** McGill; Clarkson Virtual Mathematics Colloquium; Virtual Presentation, Mathematical Biology Seminar, University of Pennsylvania

2021 Virtual presentation, Mathematics of Human Environmental Systems Workshop (BIRS); Keynote Speaker (virtual), Joint Mathematics Meeting, The American Mathematical Society (AMS); Virtual presentation Mathematics and Statistics Colloquium, UNCG; Virtual presentation, Graduate Seminar UFABC Math program; Virtual presentation Mathematical and Computational Biology Seminar Series, UMass; Invited Speaker (virtual) Canadian Mathematical Society Summer Meeting; Invited Speaker (virtual) Canadian Mathematical Society Winter Meeting Session on Spatial Dynamics of Evolution Systems in Ecology and Evolution

2022 Invited Speaker, UA Math Department Colloquium; Invited Lecture: Swansea Biomathematics Colloquium; Invited Speaker SIAM PD22 Minisymposium on Recent Advances in Cross-Diffusion and Population Models (online); Invited Lecture, Principal Lecturer, NSF-CBMS Conference Interface of Mathematical Biology and Linear Algebra, University of Central Florida; Plenary Speaker Eighth International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems (ICMA VIII); Brandeis University Mathematical Biology Seminar; Guest Speaker, 2022 Donghua-UVic Differential Equations and Mathematical Biology Workshop, Invited speaker, Special Session on Mathematical modeling and analysis in spatial ecology and epidemiology, Canadian Mathematical Society AGM.

2023 Invited Speaker, UA/PIMS MathBio Retreat; Oregon State University Mathematics Colloquium; Oregon State University Pi Mu Epsilon undergraduate honors society lecture; Keynote speaker, Sheffield Spatial Ecology Workshop: From animal movement processes to spatial distributions; SMB Presidential Symposium (round table discussion); Invited Speaker, Federal – Provincial MPB Research Forum;

2024 Invited Speaker, Joint Mathematics Meeting San Francisco, Jan 3-6; Headliner Speaker, Joint Mathematics Meeting San Francisco, Jan 3-6; Invited Colloquium Speaker, Simon Fraser University Department of Mathematics, Jan 30; Invited Speaker, University of Maryland Brin Mathematics Research Center, Applied Stochastic Processes for Encounter Problems workshop Feb 5-9; Invited Speaker, OMNI-RÉUNIS Annual Meeting York University Feb 20-21; Keynote Speaker, France-Western Canada Workshop on Ocean and Polar Sciences Feb 29-Mar 3; Invited Speaker, Canadian Society of Ecology and Evolution AGM May 26-29; Ecology and Evolution Departmental Seminar, UC Davis April 18; Invited Speaker, Canadian Society of Ecology and Evolution AGM May 26-29; Invited Speaker, Banff International Research Station Workshop on Dynamical Models Inspired by Biology Oct 6-11, Invited Speaker, 2024 Mitacs Innovation Lecture, Canadian Mathematical Society Winter Meeting Nov 29.

2025 Plenary Speaker – 2025 SMB, Edmonton July 14, 2025

Organized (since 1995):

1995 Special Year in Mathematical Biology (1995/96) at University of Utah.

1998 Co-chair of Gordon Conference on Theoretical Biology and Biomathematics.

1999 Co-organizer of a workshop: ‘From Individuals to Aggregations’ at the Institute for Mathematics and its Applications.

2000 Main Organizer of the International Conference on Mathematics in Biology and Society for Mathematical Biology Annual Meeting.

2001 Scientific Organizing Committee member, SIAM Life Sciences Conference, Boston; Mini-symposium organizer, SIAM Life Sciences Conference, Boston; Scientific Organizing Committee member, International Conference on Mathematics in Biology and Society for Mathematical Biology Annual Meeting in Hawaii.

2002 Organizer of PIMS Mathematical Biology Undergraduate Workshop;
Scientific Organizing Committee member, International Conference on Mathematics in Biology and Society for Mathematical Biology Annual Meeting in Knoxville;
Session organizer on Global Change at the Gordon Conference on Theoretical Biology and Biomathematics.

2003 Scientific Organizing Committee member, Fourth Geoffrey J. Butler International Conference in Differential Equations and Mathematical Biology (Alberta), Scientific Committee for Applications of Mathematics in Medicine workshop at the Fields Institute; Co-organizer of BIRS workshop: From molecules to ecosystems; The legacy of Lee Segel; Co-organizer of a BIRS Focused Research Group on Mathematical Models for Plant Dispersal; Scientific Organizing Committee member and Mini-symposium organizer, International Conference on Mathematics in Biology and Society for Mathematical Biology Annual Meeting in Dundee, Scotland; Co-organizer of Pacific Institute for the Mathematical Sciences, Period of Concentration in Mathematical Ecology and Evolution (2003–5).

2004 Scientific committee for Differential Equations and Applications in Mathematical Biology, Malaspina University College, Nanaimo; Co-organizer of MITACS/PIMS Summer School and Workshop: Infectious Diseases, Banff.

2005 Co-organizer of BIRS workshop, Mathematical Models for Biological Invasions, Banff; Scientific Committee member of European Society for Mathematical and Theoretical Biology Meeting; Co-organizer of IPAM Cells and Materials program in Los Angeles; Graduate Program Organizer for Park City Math Institute Summer Program in Mathematical Biology (Institute for Advanced Study); Scientific Organizing Committee member for Mathematics Institutes and NRC Workshop in Computational Biology.

2007 Organizer of PIMS Mathematical Biology Undergraduate Workshop; Scientific Program Committee Member and Mini-symposium Organizer for Canadian Applied and Industrial Mathematics Society Annual Meeting; Symposium Organizer for Ecological Society of America Meeting.

2008 Scientific Committee member for European Society for Mathematical Biology Meeting in Edinburgh; Scientific Advisory Committee member, Society for Mathematical Biology Meeting in Toronto.

2009 Scientific Committee for joint Society for Mathematical Biology/Chinese Society for Mathematical Biology Meeting in Hangzhou, China; Minisymposium Organizer at the Society for Mathematical Biology Meeting in Vancouver; Scientific Committee for Conference on Computational and Mathematical Population Dynamics, Bordeaux

2010 Scientific Committee for Models in Population Dynamics & Ecology 2010: Animal Movement, Dispersal and Spatial Ecology, Leicester; Working Group Organizer, National Institute for Mathematical and Biological Synthesis, Conference Organizer, Modeling Understanding and Managing River Ecosystems, University of Ottawa, Scientific Committee Member for Canada-China International Conference on Dynamics of Climate Impact and Infectious Diseases.

2011 Co-organizer for MBI Workshop on Biological Invasions; Co-organizer for Workshop at Banff International Research Station; Co-organizer for Mathematical Biology and IGTC Summit, Victoria.

2012 Primary organizer, Focused Research Group on Animal Movement and Memory, Banff International Research Station

2013 Co-organizer, 2013 Year of Mathematics of Planet Earth, Scientific Advisory Committee, 4th International Conference on Computational and Mathematical Population Dynamics, Primary organizer, Workshop on Impact of climate change on invasions and population distributions at Banff International Research Station; Scientific Committee 2013 Society for Mathematical Biology Annual Meeting, Co-organizer, Workshop on Animal movement in confined space: from space use patterns to epidemic spread at the University of Bristol.

2015 Scientific Committee member, International Symposium on Application of Nonlinear Partial Differential Equations in Life Science, Tianjin, China

2016 Co-organizer, 2016 Séminaire de Mathématiques Supérieures: Dynamics of Biological Systems; Organizer, minisymposium Europe Society for Mathematical and Theoretical Biology (ESMTB), University of Nottingham; Organizer, Integrodifference Equations in Ecology: 30 years and counting workshop, Banff International Research Station; Co-Organizer, Population Models in the 21st Century, MBI

2017 Co-Organizer, PIMS Graduate Summit in Mathematical Biology and Applied PDE, Jasper, Alberta; Co-Organizer, 2018 SIAM Conference on the Life Sciences, Minneapolis; Scientific Advisory Committee, Sixth International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems, UArizona.

2018 Co-organizer, 5th Computational and Mathematical Population Dynamics (CMPD5) conference, Ft. Lauderdale; Scientific Organizing Committee, Canadian Mathematical Society (CMS) 2018 Winter Meeting; Co-organizer, Thematic Semester in Mathematical Biology (Jan-June 2018), Fields Institute; Co-organizer, Emphasis Workshop on Disease Ecology and Eco-epidemiology (Mathematical Biosciences Institute); Organizing Committee, National Mathematical Biology Colloquium (Mathematical Biosciences Institute).

2019 Organizing Committee, Quantum and Kinetic Problems: Modeling, Analysis, Numerics and Applications, Institute for Mathematical Sciences (IMS), National University of Singapore (NUS); Co-organizer; New Mathematical Methods for Complex Systems in Ecology, Banff International Research Station (BIRS); Co-Organizer, Learning and Animal Movement Focussed Research Group Workshop, Banff International Research Station (BIRS); Mini tutorial Organizer, SIAM Meeting on Partial Differential Equations

2021 Organizing Committee, Mathematics of Human Environmental Systems, Banff International Research Station (BIRS);

2022 Organizing Committee, PIMS Mathematical Biology Spring Workshop 2022, Organizer, NSF-CBMS Conference Interface of Mathematical Biology and Linear Algebra, University of Central Florida

2023 Co-organizer, Sheffield Spatial Ecology Workshop: From animal movement processes to spatial distributions, Scientific Committee, Computational and Mathematical Population Dynamics 6, Winnipeg, Canada.

2024 Co-Organizer – 2024 Maud Menten Institute HQP Summit; Co-Organizer – Effects of Forestry on Pacific Salmon Workshop, Symposium on Bark Beetle Dynamics Under Global Change, Canadian Society of Ecology and Evolution AGM May 26-29; Outreach Committee, Mathematical Congress of the Americas 2025. Co-organizer/co-chair, Café Scientifique, UVic's Faculty of Science 2024-2027.

2025 Co-Organizer – 2025 Maud Menten Institute HQP Summit; Scientific Organizing Committee – 2026 CAIMS Annual Meeting;

Editorial:

Chief Editor:

- *Journal of Mathematical Biology* (2008-2022)

Editorial Boards:

- *Bulletin of Mathematical Biology* – Advisory Board Member (since 2025)
- *Journal of Mathematical Biology* - Advising Editor (since 2023)
- *Journal of Biological Dynamics,* Honourary Editor (since 2021)
- *Mathematics in Science and Industry (MSI)*- Associate Editor (since 2018)
- *Mathematical Reports of the Academy of Science of the Royal Society of Canada* (since 2020);
- *Mathematical Biosciences* (2016-2019);
- *Springer Series: Mathematics of Planet Earth* (since 2014);
- *Ecological Complexity* (since 2014);
- *Movement Ecology* (since 2012);
- *Springer Series: Lecture Notes on Mathematical Modeling in the Life Sciences* (since 2011);
- *SIAM Review (Survey and Review Section)* (2008-2015);
- *Theoretical Ecology* (since 2007);
- *Journal of Biological Dynamics* (2006-2021);
- *Bulletin of Mathematical Biology* (since 2006);
- *Applied Math Research eXpress* (2005-2008);
- *SIAM Journal on Applied Math,* (2005-2008);
- *Academic Press Theoretical Ecology Series Editorial Advisory Board,* (since 2002);
- *Ecology* and *Ecological Monographs* (2001-04);
- *Journal of Mathematical Biology* (00-08);
- *Journal of Theoretical Biology* (97-01);
- *IMA Journal of Mathematics Applied to Biology and Medicine* (96-06);

External Advisory:

- Scientific Organizing Committee, 2026 CAIMS Annual Meeting Feb 2025-present
- Co-director, Maud Menten Institute for Mathematics for the Life Sciences April 2024-present
- Research Advisory Council, UVic Math/Stat 2023-present
- Computer Resources Committee, UVic Math/Stat 2023-present
- Outreach and Undergrad Recruitment Committee, UVic Math/Stat 2023-present
- Appointments, Re-appointments, Promotion and Tenure (ARPT) Committee - Department of Biology UVic 2022-present
- Chair Selection Committee, UVic Math/Stat 2022-2023
- Space Committee, UVic Math/Stat 2022-2024
- Scientific Committee, 6th edition of the international conference on Computational and Mathematical Population Dynamics 2022
- Chair, Canadian Mathematical Society Fellow's Committee 2020-2022

- BIRS Scientific Advisory Board 2021-2024
- Co-Director, OMNI/RÉUNIS Disease Modelling Network April 2021- present
- Adjudication Committee – Martha Cook Piper Research Prize (UAlberta)
- SIAM Ad hoc Committee on the Joint Mathematics Meetings (JMM) August 2019-July 2020
- Presidents Advisory Committee, Society for Mathematical Biology Jan 2019-present
- Research and Innovation Committee, Field's Institute March 2019 – February 2022
- Scientific Committee, The Fourth International Conference on the Dynamics of Differential Equations (4^{th} Hale conference) Jan 2019 – March 2020
- Scientific Advisory Committee, International Conferences on Mathematical Modelling and Analysis of Populations in Biological Systems (ICMS VII), Nov 2018- Oct 2019
- Research Committee Member, Centre for Quantitative Analysis and Modelling, Fields Institute, July 2018-June 2019
- Scientific Committee, 5th Computational and Mathematical Population Dynamics (CMPD5) conference, March 2018 – June 2019
- Mathematics Department External Review, UBC, March 2018
- Western Section Program Committee, American Mathematical Society, Feb 2018-Jan 2020
- (NSE) Grant Assist Program, 2018
- Scientific Panel - Fields Institute, Sept 2017 to Aug 2021
- NSERC Mathematics and Statistics Liaison Committee, 2017
- Chair of Applied Mathematics, NSERC Mathematics and Statistics Evaluation Group, July 2017-June 2018
- Scientific Advisory Committee - ICMA-VI: 6^{Th} International Conference on Mathematical Modelling and Analysis of Populations in Biological Systems, 2017
- Committee Member, Mathematical Biosciences Institute National Colloquium, July 2016-June 2018
- Chair, Applied Mathematics Committee, NSERC Evaluation Group in Mathematics and Statistics (EG 1508), July 2016-June 2017
- NSERC Mathematics and Statistics Liaison Committee, 2016
- Scientific Organizing Committee for Global change impact on diseases and alien species expansion, African Institute for Mathematical Sciences, 2016
- NSERC Evaluation Group in Mathematics and Statistics (EG 1508), July 2014-June 2017
- International Symposium on Application of Nonlinear Partial Differential Equations in Life Science, Scientific Committee, Nankai University, Tianjin, China, 2015.
- Scientific Board, Institute for Mathematical Sciences, Renmin University of China, June 2014-May 2017
- PIMS Scientific Panel, July 2013-present
- Pacific Institute for Mathematical Sciences Scientific Review Panel, November 2012-present
- Canadian Institute of Ecology and Evolution, Scientific Advisory Committee November 2009-present
- Canadian Aquatic Invasive Species Network Scientific Committee, 2006-7, 2009-present
- Mathematical Biosciences Institute Scientific Advisory Committee Chair May 2009-2011 (Committee member October 2007-2011)
- Society for Industrial and Applied Math Program Committee, 2008-2011
- Mathematical Biosciences Institute Board of Trustees, September 2007-2011
- Mathematics of Information Technology and Complex Systems (MITACS) Board of Directors, July 2009-June 2010

- Pacific Institute for Mathematical Sciences Board of Directors, January 2004-June 2005 and July 2006-June 2009
- NSERC Grant Selection Committee in Ecology and Evolution, 2004-5 and 2006-8
- Mathematical Biosciences Institute Board of Scientific Governors, October 2006-September 2007
- Banff International Research Station for Mathematical Innovation and Discovery Scientific Advisory Board, March 2001-June 2004
- National Science Foundation (NSF) Review Committee for Mathematical Biosciences Institute, 2004
- *Journal of Theoretical Biology* Advisory Board, May 2001–May 2003
- Alberta Ingenuity Fund Associateship Panel, April 2002
- Panel member for the NSF/NIH joint NIGMS grant committee in mathematical biology, February 2002
- Banff International Research Station for Mathematical Innovation and Discovery Steering Committee March 2001-June 2002

External Service:

- Selection Committee Fellows of the CMS 2025-present
- Chair, Selection Committee Fellows of the CMS 2020-2022
- Chair, Selection Committee UBC/PIMS Mathematical Sciences Young Faculty Award May 2021- Jan 2022
- Selection Committee, SIAM Activity Group on Life Sciences Early Career Prize May 2021-July 2022
- Past President, Canadian Mathematical Society 2020-2021
- President, Canadian Mathematical Society, 2018-2020
- American Mathematical Society Section Program Committee 2018-2020
- President-Elect, Canadian Mathematical Society, 2017-2018
- Bellman Prize Committee Member, 2017
- Scientific Review Panel, Pacific Institute for Mathematical Sciences, 2013-2017
- F1000 Faculty Member (Theoretical Ecology), 2009-2022
- Director, Centre for Mathematical Biology, University of Alberta, 2002-2017
- Canadian Mathematical Society Vice President-Western, 2013-15
- David Borwein Award Committee Member for Canadian Mathematical Society, 2014
- Lee Segel Prize Committee Member (2011) and Chair, 2013
- CAIMS Research Prize Committee Member (2012) and Chair, 2013
- External examiner, Kelowna, BC, 2022; Universidade Estaudual Paulista, Sao Paulo, 2015; University of British Columbia, 2013; University of Oslo, 2010; Simon Fraser University, 2010; University of British Columbia 2009; Dalhousie University, 2009; University of Melbourne, 2008; Arizona State University, 2001.
- CAIMS/PIMS Early Career Award Prize Committee Member, 2010-2012
- Society for Industrial and Applied Math Program Committee 2008-2012
- Program Director, PIMS International Graduate Training Centre in Mathematical Biology, 2007-2011
- Lord Robert May Prize Committee Member, 2010
- President, Society for Mathematical Biology, 2001-2003
- Bellman Prize Committee Member, 2002
- Canada Research Chairs College of Reviewers, 2002
- Okubo Prize Committee Member, 2001
- President Elect, Society for Mathematical Biology, 2000
- Board of Directors, Society for Mathematical Biology, 1996-1999

Supervised:

Masters Supervision:

Name	Degree Date	Thesis/Project Name
Greg Schmitz	1993	A model for the spread of genetically engineered microbes
Steve Parrish	1998	Analysis of a Home Range Model: Pattern Formation from Scent-Marking
Lora Ballinger	1999	Yellowstone Elk Migration: a dynamic programming model
Brenlyn Thiroit	2000	MStat project - Analysis and simulation of pair-wise distances between lupine plants on Mt St Helene
Amy Hurford	2005	Wolf movement within and beyond the territory boundary
Hannah McKenzie	2006, 2010	Linear features impact predator-prey encounters: analysis with first passage time (2006), Effect of flow on population dynamics in streams (2010)
Justin Marleau	2009	Modelling early plant primary succession
Jaime Ashander	2010	Effects of parasite exchange between wild and farmed salmon
Jeanette Wheeler	2010	Temp-dependant population dynamics of Parnassium smintheus ...
Michael Bryniarski	withdrew	Mathematical Ecology
Jessa Marley	2020	Mathematical Analysis of Shark Movement
Broghan Erland	transferred	Assessing Errors in Greenhouse Gas Flux Measurements from Mineable and in Situ Oil Sands
Kelsey Gritter	2022	Spatial modeling of CWD
Xiaotian Hua	2022	Mathematical models for coral algae interactions

Nick Paroshy	2025	Analysis of spatiotemporal dynamics of polar bear subpopulations
Xiaoqi Xie	2023	Statistical analysis of mountain pine beetle outbreaks
Johnson Yue	2024	Analysis of nonlocal reaction-advection-diffusion models in ecology
Ferdinand Gruenewald	2026	Bee Determined: A Mathematical Analysis of Trapline Formation in Bees
Yueyang Du	current	Movement dynamics of micro-organisms
Wenlin Xu	current	Mathematical Epidemiology

Doctoral Supervision:

Name	**Degree Date**	**Thesis/Project Name**	**Present Position**
Robert van Kirk	1995	Integrodifference Models of Biological Growth and Dispersal	Senior Scientist, Henry's Fork Foundation, Ashton, ID
Tom Robbins	2004	Seed Dispersal and Biological Invasions: A Mathematical Analysis	Vice President of Software Development, BioFire, Salt Lake City UT
Jungmin Lee	2006	Prey-taxis and its Applications	Researcher, National Institute for Mathematical Sciences, Korea
Tomas de Camino-Beck	2006	Theoretical Considerations for Biocontrol	Professor, Intelligent Systems Department, Cenfotec University, Costa Rica
Chris Jerde	2007	NIS Arrival and Establishment	Research Assistant Professor, University of Nevada
Marty Krkošek	2008	Effects of Salmon Aquaculture on Sea Lice Transmission and Wild Salmon Population Dynamics	Associate Professor and Canada Research Chair, University of Toronto
Raluca Eftimie	2008	Modeling Animal Group Formation	Professor, Laboratoire de Mathématiques de Basançon, Université de Franche-Compté
Peter Molnár	2009	Modelling Future Impacts of Climate Change and Harvest on the Reproductive Success of Female Polar Bears (*Ursus maritimus*)	Associate Professor, University of Toronto

Andria Dawson	2013	Models for Forest Growth and Mortality: Linking Demography to Competition and Climate	Associate Professor, Mount Royal University
Harshana Rajakaruna	2013	Temperature and Propagule Flow on Invasibility	Research Associate, University of Tennessee
Marie Auger- Méthé	2014	Walking in Their Footsteps: New Approaches to Identify Behavioural Processes and Define Home Ranges Using Animal Movement Data	Associate Professor and Canada Research Chair, University of British Columbia
Ulrike Schlägel	2015	Modeling Wolf Movement and Researching State-side Models	Junior research group leader (DFG Emmy Noether Programme), University of Potsdam
Stephanie Peacock	2015	Modeling Disease Transmission from Aquaculture to Wild Salmon	Postdoctoral Fellow, University of Calgary
Jody Reimer	2019	Predator and Prey, Past, Present, and Projected: Modelling Polar Bears and Ringed Seals in a Dynamic Arctic	Wylie Assistant Professor Lecturer, University of Utah
Mélodie Kunegel-Lion	2019	Mountain Pine Beetle Population Dynamics and Management	Research and study engineer, TerrOïko Sorèze, France
Nathan Marculis	2019	Integrodifference Models for Neutral Genetic Patterns and Trade-offs in Ecology	Business Owner Brewmaster Irrational Brewing Company, Edmonton
Samuel Fischer	2020	Quantitative Methods for Controlling the Spread of Invasive Species	Research Scientist, Helmholz Centre for Environmental Research Leipzig, Germany
Dean Koch	2020	Mountain Pine Beetle Dynamics	Environmental Information Specialist, Hatfield Consultants Ltd.
Christopher Heggerud	2021	Modelling, Analysis and Control of Blue-green Algae	Assistant Professor, University of Manitoba
Peter Harrington	2022	Using Mathematics to Control Disease Outbreaks on Salmon Farms	Teaching Postdoctoral Fellow, University of British Columbia
Emma Atkinson	2026	Prawn tales: A deep dive into the population biology and fisheries	Postdoctoral Fellow Simon Fraser University

		management of spot prawns (Pandalus platyceros) in British Columbia, Canada	
Peter Thompson	2023	Memory and Polar Bear Movement Patterns	LiberEro Postdoctoral Fellow, University of British Columbia
Shan Gao	current	Early warning signals for emerging diseases	
Shibai Zhang	current	Continuous-time memory-movement models	
Kévan Rastello	current	Energy budget models for mountain pine beetle	
Akina Kuperus	current	Analysis of movement behaviour and parent/offspring interactions in Svalbard Reindeer	

Postdoctoral Supervision:

Name	**Dates**	**Project**	**Present Position**
Markus Owen	1997-1999	Predator-prey dynamics in spatial ecology	Professor, University of Nottingham
Bingtuan Li	1999-2001	Spreading speeds for cooperative dynamical systems	Professor, University of Louisville
Christina Cobbold	2001-2003	Spatial dynamics of forest tent caterpillar systems	Senior Lecturer, University of Glasgow
AnneMarie Pielaat	2001-2003	Models for plant dispersal	Research Associate. RIVM, The Netherlands
Frithjof Lutscher	2001-2005	Interodifference models in Ecology	Professor, University of Ottawa
Leeza Pachepsky	visiting postdoc 2002-2004	Population dynamics of stream systems	Associate Psychotherapist at the Center for Psychotherapy, Spirituality and Creativity, Oakland, CA
Marjorie Wonham	2002-2006	Modelling of biological invasions in aquatic systems	Special Advisor to the President & Life Sciences Tutor, Quest University
Joanna Renclawowicz	2003-2004	West Nile virus dynamics	Polish Academy of Sciences
Erik Noonburg	2003-2005	Elk migration models and analysis	Associate Professor, Florida Atlantic University
Alex Potapov	Research Associate 2003-2013	Risk analysis of biological invaders	Research Associate University of Alberta
Tom Robbins	2004-2005	Population spread in heterogeneous systems	Vice President of Software Development, BioFire, Salt Lake City, UT

Caroline Bampfylde	2004-2008	Risk analysis of biological invaders	Risk Assessment Modeller, Environment and Sustainable Resource Development, Government of Alberta
Bill Nelson	2005-2007	Modelling mountain pine beetle	Professor, Queen's University
Jungmin Lee	2006-2007	Prey-taxis and its applications	National Institute for Mathematical Sciences, Korea
Frank Hilker	2006-2008	Analysis of mathematical models for biological invasions	Professor, Osnabrük University
Tomas de Camino Beck	2006-2008	Mountain pine beetle models: Ccomputational and mathematical analysis	Professor, Intelligent Systems Department, Cenfotec University, Costa Rica
Frederic Hamelin	2007-2008	Mathematical analysis of ecological systems	Faculty, Agrocampus Rennes, France
Jim Muirhead	2007-2010	Forecasting dispersal and establishment of non-indigenous species	Research Staff, Smithsonian Environmental Research Center
Martin Krkošek	2008	Mathematical & statistical synthesis of sea lice models in the Broughton Archipelago	Assistant Professor and Canada Research Chair, University of Toronto
Mario Pineda-Krch	2008-2012	Genomics of mountain pine beetle populations	Education Student, University of Alberta
Carly Strasser	2009-2010	Models for aquatic invasive species	Director of Alliances and Data Strategy at the Fred Hutchinson Cancer Research Center
Peter Molnár	2009-2010	Mathematical & statistical models for polar bear dynamics	Associate Professor, University of Toronto
Yu Jin	2009-2012	Instream flow needs for healthy ecosystems	Associate Professor, University of Nebraska-Lincoln
Qihua Huang	2011-2016	Modelling river dynamics & analysis of oilsands pollution risks	Professor, Southwest University, China
Olga Vasilyeva	2012-2013	Analysis of river dynamics	Associate Professor, Memorial University
Jimmy Garnier	2012-2013	The effect of climate change on genetic diversity	Associate Scientist, Centre National de la Recherche Scientifique, France
Greg Breed	2012-2014	Models for animal movement	Associate Professor, Fairbanks University

Jonathan Potts	2012-2014	Develop animal movement models & models for territoriality	Lecturer, Sheffield University
Devin Goodsman	2012-2016	Mountain pine beetle dispersal models	Entomologist Northern Forestry Centre, Natural Resources Canada, (Gov't Canada)
Andrew Bateman	2013-2016	Quantitative research on pesticide resistance in sea lice on salmon farms	Quantitative Ecologist with the Pacific Salmon Foundation's Strategic Salmon Health Initiative, British Columbia
Tal Avgar	2014-2017	Spatial aspects of trophic interactions and cognitive ecology	Quantitative Wildlife Ecologist - Assistant Professor, University of British Columbia
Yanyu Xiao	2014-2015	Risk assessment for invasive species	Associate Professor, University of Cincinnati
Mohsen Mesgaran	2015 Visiting Postdoc	Invasion dynamics via hybridization	Faculty member, University of California, Davis
Juliette Bouhours	2015-2016	The effect of climate change on population persistence	High School Math teacher, Paris, France
Arianna Bianchi	2016-2017	Mathematical analysis of animal movement patterns	Instructor at the Liceo Scientifico Statale "Galileo Galilei" in Siena, Italy.
Stephanie Peacock	2016-2017	Modeling Disease Transmission from Aquaculture to Wild Salmon	Postdoctoral Fellow – University of Calgary
Pouria Ramazi	2018- 2020	Bayesian belief and decision network modeling of whirling disease in Alberta	Assistant Professor, University of Calgary
Mariana B. Nagy-Reis	2018- 2019	A retrospective analysis of white-tailed deer and mule deer harvest and demographic data in North Dakota	Wildlife Habitat Specialist, Ministry of Forestry, Lands, Natural Resources Operations and Rural Development, Government of British Columbia
Jingjing Xu	2018- 2021	Cyanobacterial blooms and their toxic effects on fish populations and quantifying contact rates for modeling transmission	ScotiaBank

		of chronic wasting disease (CWD)	
Samuel Fischer	2020	Model angler movement patterns to determine the impact on the risk associated with the spread of whirling disease	Postdoctoral Fellow, Helmholz Centre for Environmental Research Leipzig, Germany
Dean Koch	2020	Mountain pine beetle growth spread	Environmental Information Specialist, Hatfield Consultants Ltd.
Kyeongah Nah	2020	Models for COVID-19 outbreaks	Researcher, National Institute for Mathematical Science, Korea
Xiunan Wang	2021	Models for COVID-19 outbreaks	Assistant Professor, University of Tennessee
Valeria Giunta	2021-2023	EPSRC project	Lecturer in Mathematics, Swansea University
Micah Brush	2021 - 2024	Dynamical systems modelling for mountain pine beetle outbreaks	Postdoctoral Fellow Administrator, University of Victoria
Azadeh Aghaeeyan	2022 - 2025	Integrating human decision making and epidemiological models to reveal the human impact on epidemics	Postdoctoral Fellow, McMaster University
Pijush Panday	2022 - 2023	Mathematical modelling of ecological and epidemiological systems.	Assistant Professor, Department of Mathematics, F.S.T. ICFAI Foundation for Higher Education, Hyderabad, India
Julia Schmid	2022 - 2024	Application of citizen science to Canadian fisheries management	Data Scientist Basin Scale Events to Coastal Impacts PICES
Evan Johnson	2022-2024	Analysis of Mountain Pine Beetle dynamics and distributions	Postdoctoral Fellow Smithsonian Tropical Research Institute
Inesh Munaweera	2023-2025	Mark-recapture estimating of sturgeon populations	Assistant Professor MacEwan University
Silas Poloni	2024-2025	Mathematical analysis of eco-evolutionary models for range boundaries in the presence of climate change	
Maria Kuruvilla	2024-current	Analysis of forestry effects on Pacific salmon in Musgamagw Dzawada'enuxw territory and across coastal BC.	

Societies:

- Ecological Society of America (ESA),
- Society for Industrial and Applied Mathematics (SIAM),
- Canadian Applied and Industrial Mathematics Society (CAIMS),
- Society for Mathematical Biology (SMB)
- Canadian Mathematical Society (CMS)

Journal Publications
(student, postdoc and research associate names are in **bold**):

1. **Johnson, E.C., Brush, M.,** Lewis, M.A. (2026) Modeling stratified dispersal in forest pests: a case study of the mountain pine beetle in Alberta. *Ecology* 107(2): e70305 https://doi.org/10.1002/ecy.70305
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