

Curriculum vitae
Mark Alun Lewis FRSC

Address: Department of Mathematical and Statistical Sciences
University of Alberta
545B CAB, Edmonton AB
T6G 2G1 Canada

Tel. (780) 492-0197
Fax: (780) 492-6836
e-mail: mark.lewis@ualberta.ca

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:

7/01–now *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–now *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–now *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.

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).

Major Grants:Current

Alberta Innovates Bio Solution/Alberta Prion Research Institute (APRI), Quantifying contact rates for modelling CWD transmission in wild mule deer populations, 2017-2019, (Evelyn Merrill PI) Award Amount \$302,857

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, 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), 2014-2019 (Alejandro Adem PI) Award Amount \$5,750,000.

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 (Murray Humphries PI) Award amount \$1,650,000.

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.

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)

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

Past

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 I, 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 Nonindigenous 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 80th 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 Geophysical 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, 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.

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; Minisymposium 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.
- 2014 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.

Editorial:Chief Editor:

- *Journal of Mathematical Biology* (since 08)

Editorial Boards:

- *Springer Series: Mathematics of Planet Earth* (since 14);
- *Ecological Complexity* (since 14);
- *Movement Ecology* (since 12);
- *Springer Series: Lecture Notes on Mathematical Modeling in the Life Sciences* (since 11);
- *SIAM Review (Survey and Review Section)* (08-15);
- *Theoretical Ecology* (since 07);
- *Journal of Biological Dynamics* (since 06);
- *Bulletin of Mathematical Biology* (since 06);
- *Applied Math Research eXpress* (05-08);
- *SIAM Journal on Applied Math*, (05-08);
- *Academic Press Theoretical Ecology Series Editorial Advisory Board*, (since 02);
- *Ecology and Ecological Monographs* (01-04);
- *Journal of Mathematical Biology* (00-08);
- *Journal of Theoretical Biology* (97-01);
- *IMA Journal of Mathematics Applied to Biology and Medicine* (96-06);

Advisory:

- Western Section Program Committee, American Mathematical Society, Feb 2018-Jan 2020
- 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-present
- 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

Service:

- Scientific Review Panel, Pacific Institute for Mathematical Sciences, 2013-2017
- F1000 Faculty Member (Theoretical Ecology), 2009-present
- Director, Centre for Mathematical Biology, University of Alberta, 2002-present
- 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, Universidade Estadual 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 <i>Parnassium smintheus</i> ...
Michael Bryniarski	withdrew	Mathematical Ecology
Jessa Marley	current	

Doctoral Supervision:

Name	Degree Date	Thesis/Project Name	Present Position
Robert van Kirk	1995	Integrodifference Models of Biological Growth and Dispersal	Associate Professor of Mathematics, Humboldt State University
Tom Robbins	2004	Seed dispersal and biological invasions: a mathematical analysis	Research Scientist, Idaho Technology
Jungmin Lee	2006	Prey-taxis and its applications	National Institute for Mathematical Sciences, Korea
Tomas de Camino-Beck	2006	Theoretical Considerations for Biocontrol	Assistant Professor, Universidad Nacional, Costa Rica
Chris Jerde	2007	NIS Arrival and Establishment	Research Assistant Professor, Notre Dame
Marty Krkošek	2008	Effects of salmon aquaculture on sea lice transmission and wild salmon population dynamics	Assistant Professor, University of Toronto
Raluca Eftimie	2008	Modeling animal group formation	Lecturer, University of Dundee
Peter Molnár	2009	Modelling future impacts of climate change and harvest on the reproductive success of female polar bears (<i>Ursus maritimus</i>)	Assistant Professor, University of Toronto
Andria Dawson	2013	Models for Forest Growth and Mortality: Linking Demography to Competition and Climate	Postdoctoral Researcher, University of California, Berkeley
Harshana Rajakaruna	2013	Temperature and Propagule Flow on Invasibility	Research Scientist, Okinawa Institute of Science and Technology

Marie Auger- Méthé	2014	Walking in Their Footsteps: New Approaches to Identify Behavioural Processes and Define Home Ranges Using Animal Movement Data	Postdoctoral Fellow, Dalhousie University
Ulrike Schlägel	2015	Modeling Wolf Movement and Researching State-side Models	Postdoctoral Fellow, University of Potsdam
Stephanie Peacock	2015	Modeling Disease Transmission From Aquaculture to Wild Salmon	Postdoctoral Fellow, University of Alberta
Jody Reimer	current	Predator-prey interactions in Arctic Ecosystems	
Dean Koch	current	Mountain pine beetle dynamics	
Mélotie Kunegel-Lion	current	Mountain pine beetle dynamics	
Nathan Marculis	current	Mountain pine beetle dynamics	
Samuel Fischer	current	Risk assessment for invasive species	
Christopher Heggerud	current	Modelling, analysis and control of blue-green algae	
Peter Harrington	current	Using mathematics to control disease outbreaks on salmon farms	

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	Associate Professor, University of Louisville
Christina Cobbold	2001-2003	Spatial dynamics of forest tent caterpillar	Senior Lecturer, University of Glasgow

		systems	
AnneMarie Pielaat	2001-2003	Models for plant dispersal	Research Associate. RIVM, The Netherlands
Frithjof Lutscher	2001-2005	Interodifference models in Ecology	Associate Professor, University of Ottawa
Leeza Pachepsky	visiting postdoc 2002-2004	Population dynamics of stream systems	Microsoft
Marjorie Wonham	2002-2006	Modelling of biological invasions in aquatic systems	Assistant Professor, 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	Research Scientist, Idaho Technology
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	Develop and analyze math. models for biological invasions	Professor, Osnabrück University
Tomas de Camino Beck	2006-2008	Mountain Beetle models, comput. and mathematical analysis	Assistant Professor, Universidad Nacional, Costa Rica
Frederic Hamelin	2007-2008	Mathematical Biology	Faculty, Agrocampus Rennes, France
Jim Muirhead	2007-2010	Forecast dispersal and establish. of non-indigenous species	Postdoctoral Fellow, Smithsonian Environmental Research Center
Martin Krkošek	2008	Math & stat synthesis of sea lice... Broughton Archipelago	Assistant Professor, University of Toronto
Mario Pineda-Krch	2008-2012	Genomics Mountain Pine Beetle	Education Student, University of Alberta
Carly Strasser	2009-2010	Models for aquatic	Program Officer,

		invasive species	Gordon & Mary Moore Foundation, California
Peter Molnár	2009-2010	Mathematical & Statistical models for polar bear dynamics	Assistant Professor, University of Toronto
Yu Jin	2009-2012	Instream flow needs for healthy ecosystems	Assistant Professor, University of Nebraska-Lincoln
Qihua Huang	2011-2016	Modelling river dynamics & analyze oilsands pollution risks	Professor, Southwest University, China
Olga Vasilyeva	2012-2013	Analysis of River Dynamics	Assistant Professor, Christopher Newport 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	Assistant 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	Los Alamos National Laboratory
Andrew Bateman	2013-2016	Quantitative research on pesticide resistance in sea lice on salmon farms	Postdoctoral Fellow, University of Victoria
Tal Avgar	2014-2017	Spatial aspects of trophic interactions and cognitive ecology	Postdoctoral Fellow, University of Guelph
Yanyu Xiao	2014-2015	Risk assessment for invasive species	Assistant Professor University of Cincinnati
Juliette Bouhours	2015-2016	The effect of climate change on population persistence	Postdoctoral Fellow, Ecole Polytechnique
Arianna Bianchi	2016-current		ongoing

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. **Rajakaruna, H.**, Lewis, M.A. Do yearly temperature cycles reduce species richness? Insight from calanoid copepods In Press at *Theoretical Ecology*.
2. Kreitzman, M., Ashander, J., Driscoll, J., **Bateman, A.W.**, Chan, K., Lewis, M.A, Krkošek, M. (2017) Wild salmon sustain the effectiveness of parasite control on salmon farms: conservation implications from an evolutionary ecosystem service. *Conservation Letters* DOI: 10.1111/conl.12395 (epub)
3. **Schlägel, U.E.**, Merrill, E., Webb, N., Lewis, M.A. (2017) Territory surveillance and prey management: Wolves keep track of space and time. *Ecology and Evolution* DOI: 10.1002/ece3.3176 (epub)
4. G. Bastille-Rousseau, Murray, D.L, Schaefer, J.A., Lewis, M.A., Mahoney, S., **Potts, J.R.** (2017) Spatial scales of habitat selection decisions: implications for telemetry-based movement modeling. *Ecography* DOI:10.1111/ecog.02655 (epub)
5. **Mesgaran, M.**, Cousens, R., Bouhours, J., Lewis, M.A. (2017) How to be a good neighbor: facilitation and competition among co-flowering species. *Journal of Theoretical Biology*, 422: 72-83
6. **Bouhours, J.**, Mesgaran, M.B., Cousens, R.D., Lewis, M.A. (2017) Neutral hybridization can overcome a strong Allee effect by improving pollination quality, *Theoretical Ecology*, 10(3):319-339
7. **Rajakaruna, H.**, Lewis, M.A. (2017) Temperature cycles affect the colonization potential of calanoid copepods. *Journal of Theoretical Biology*, 419: 77-89
8. **Goodsman, D.W.**, Cooke, B.J., Lewis, M.A. (2017) Positive and negative density-dependence and boom-bust dynamics in enemy-victim populations: A mountain pine beetle case study, *Theoretical Ecology*, 10: 255-267
9. **Marculis, N.G.**, Lui, R., Lewis, M.A. (2017) Neutral genetic patterns for expanding populations with nonoverlapping generations, *Bulletin of Mathematical Biology*, 79(4): 828-852
10. Hernandez, M., Johansson, M.L., **Xiao, Y.**, Lewis, M.A., MacIsaac, H.J. (2016) Modeling sampling strategies for determination of zooplankton abundance in ballast water *Marine Pollution Bulletin*, 115(1-2): 80-85
11. **Huang, Q.**, Wang, H., Lewis, M.A. (2017) A hybrid continuous/discrete-time model for invasion dynamics of zebra mussels in rivers. *SIAM J. Applied Math*, 77(3): 854-880
12. Fazly, M., Lewis, M.A., Wang, H. (2017) On impulsive reaction-diffusion models in higher dimensions, *SIAM J. Applied Math*, 77(1): 224-246
13. **Peacock, S.J.**, Krkošek, M., Lewis, M.A., Lele, S. (2016) Study design and parameter estimability for spatial and temporal ecological models, *Ecology and Evolution*, 7(2): 762-770
14. **Garnier, J.**, Lewis, M.A. (2016) Population expansion under climate change: the genetic consequences *Bulletin of Mathematical Biology*, 78(11): 2165-2185
15. **Bouhours, J.**, Lewis, M.A. Climate change and integrodifference equations in a stochastic environment *Bulletin of Mathematical Biology*, 78(9): 1866-1903
16. Krivan, V., Lewis, M.A., Bentz, B.J., Bewick, S., Lenhart, S.M., Liebhold, A. (2016) A dynamical model for bark beetle outbreaks. *Journal of Theoretical Biology*, 407(21): 25-37
17. Mesgaran, M.B., Lewis, M.A., Ades, P.K, Donohue, K., Ohadi, S., Li, C., Cousens, R.D., Hybridization can facilitate species invasions, even without enhancing local adaptation *Proceedings of the National Academy of Sciences*, 113(36): 10210-10214

18. **Goodsman, D.W., Koch, D.**, Whitehouse, C., Evenden, M., Cooke, B., Lewis, M.A. (2016) Aggregation and a strong Allee effect in a cooperative outbreak insect. *Ecological Applications*, 26(8): 2623-2636
19. Lewis, M. A. (2016). Finding the sweet spot for invasion theory. *Proceedings of the National Academy of Sciences*, 113(25): 6819-6820
20. **Auger-Méthé, M.**, Field, C., Albertsen, C.M., Derocher, A.E., Lewis, M.A., Jonsen, I.D., Mills Flemming, J. (2016) State-space models' dirty little secrets: even simple linear Gaussian models can have parameter and state estimation problems. *Scientific Reports*, 6: 26677
21. **Schlägel, U.E.**, Lewis, M.A. (2016) Robustness of movement models: can models bridge the gap between temporal scales of data sets and behavioural processes? *Journal of Mathematical Biology*, 73(6): 1691-1726
22. **Potts, J.R.**, Lewis, M.A. (2016) How memory of direct animal interactions can lead to territorial patterns formation. *Journal of the Royal Society Interface*, 13(118): pii: 20160059.
23. **Goodsman, D.W.**, Lewis, M.A. (2016) The minimum founding population in dispersing organisms subject to strong Allee effects. *Methods in Ecology and Evolution*, 7(9): 1100-1109
24. Hamelin, F., Castella, F., Doli, V., Marçais, B, Ravigne, V., Lewis, M.A. (2016) Mate finding, sexual spore production, and the spread of fungal plant pathogens. *Bulletin of Mathematical Biology*, 78(4): 695-712
25. **Auger-Méthé, M.**, Derocher, A., DeMars, C., Plank, M., Codling, E., Lewis, M.A. (2016) Evaluating random search strategies in three mammals from distinct feeding guilds *Journal of Animal Ecology*, 85(5): 1411-1421
26. **Potapov, A.**, Merrill, E., Pybus, M. Lewis, M.A. (2016) Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. *PLOS ONE*, (11)3: e0151039
27. **Peacock. S.J., Bateman, A.W.**, Krkošek, M, Lewis, M.A. (2016) The dynamics of coupled populations subject to control. *Theoretical Ecology*, 9(3): 365-380
28. **Huang, Q.**, Wang, H.W., Ricciardi, A. Lewis, M.A. (2016) Temperature- and turbidity-dependent competitive interactions between invasive freshwater mussels. *Bulletin of Mathematical Biology*, 778(3): 353-380
29. **Schlägel, U.E.**, Lewis, M.A. (2016) A framework for analyzing movement models' robustness against varying temporal discretization. *Journal of Mathematical Biology*, 73(4): 815-845
30. **Avgar, T.**, Potts, J.R., Lewis, M.A, Boyce, M.S. (2016) Integrated step selection analysis: Bridging the gap between resource selection and animal movement. *Methods in Ecology and Evolution*, 7(5): 619-630
31. **Huang, Q.**, Jin, Y., Lewis, M.A. (2016) R_0 analysis of a benthic-drift model for a stream population. *SIAM Journal on Applied Dynamical Systems*, 15(1): 287-321.
32. Groner, M.L., Rogers, L.A, **Bateman, A.W.**, Connors, B.M, Frazer, L.N., Godwin, S.C., Krkošek, M., Lewis, M.A., **Peacock, S.J.**, Rees, E.E., Revie, C.W., **Schlägel, U.E.** Conservation, fisheries and aquaculture: Quantitative lessons from sea lice and salmon epidemiology (2016). *Philosophical Transactions of the Royal Society B: Biological Sciences*, 371: 20150203. DOI: 10.1098/rstb.2015.0203
33. **Potts, J.R.**, Hillen T., Lewis, M.A. (2015) The "edge effect" phenomenon: deriving population abundance patterns from individual animal movement decisions *Theoretical Ecology*, 9(2): 233-247
34. **Potapov, A.**, Merrill, E., Pybus, M., Lewis, M.A. (2015) Empirical estimation of R_0 for unknown transmission functions: The case of chronic wasting disease in Alberta. *PLoS One*, 10(10):e0140024.

35. **Vasilyeva, O.**, Lutscher, F., Lewis, M.A. (2016) Analysis of spread and persistence for stream insects with winged adult stages. *Journal of Mathematical Biology* 72(4): 851-875
36. **Peacock, S.J.**, Krkošek, M., **Bateman, A.W.**, Lewis, M.A. (2015) Parasitism and food web dynamics of juvenile Pacific salmon. *Ecosphere*, 6(12): 1-16.
37. Gagnon, K., **Peacock, S.**, Jin, Y., Lewis, M.A. (2015) Modelling the spread of the invasive alga *Codium fragile* drive by long-distance dispersal of buoyant propagules. *Ecological Modelling*, 316(c): 111-121
38. **Huang, Q.**, Wang, H. Lewis, M.A. (2015) The impact of environmental toxins on predator-prey dynamics. *Journal of Theoretical Biology*, 378: 12-30
39. **Auger-Méthé, M.**, Derocher, A., Plank, M., Codling, E., Lewis, M.A. (2015) Differentiating the Lévy walk from the composite correlated random walk. *Methods in Ecology and Evolution*, 6(10): 1179-1189
40. **Auger-Méthé, M.**, Lewis, M.A., Derocher, A.E. (2015) Home ranges in moving habitats: polar bears and sea ice. *Ecography*, 39(1): 26-35
41. **Potts, J.R.**, Lewis, M.A. (2015) Territorial pattern formation in the absence of an attractive potential. *Journal of Mathematical Biology*, 72(1): 25-46
42. **Bateman, A.W.**, Neubert, M.G., Krkošek, M., Lewis, M.A. (2015) Generational spreading speed and the dynamics of ecological invasions. *American Naturalist*, 186(3): 362-375
43. Paolucci, E.M., Hernandez, M.C., **Potapov, A.**, Lewis, M.A., MacIsaac, H.J. (2015) Hybrid treatment increases efficiency of ballast water management. *Journal of Applied Ecology*, 52(2): 348-357.
44. Bastille-Rousseau, G., **Potts, J.R.**, Lewis, M.A., Ellington, E.H., Rayl, N.D., Mahoney, S.P., Fuller, T.K., Organ J.F., Schaefer, J.A., Murray, D.L. (2015) Unveiling trade-offs in resource selection of migratory caribou using a mechanistic movement model of availability. *Ecography*, 38(10): 1049-1059
45. **Huang, Q.**, Lewis, M.A. (2015) Homing fidelity and reproductive rate for migratory populations. *Theoretical Ecology*, 8(2): 187-205
46. **Schlägel, U.**, Lewis, M.A. (2014) Detecting effects of spatial memory and dynamic information on animal movement decisions *Methods in Ecology and Evolution*, 5(11): 1236-1246.
47. Drolet, D., Locke, A., Lewis, M.A., Davidson, J. (2015) Evidence-based tool surpasses expert opinion in predicting probability of eradication of aquatic non-indigenous species. *Ecological Applications*, 25(2): 441-450.
48. **Potts, J.R.**, Mokross, K., Stouffer, P.C., Lewis, M.A. (2014) Step selection techniques uncover the environmental predictors of space use patterns in flocks of Amazonian birds. *Ecology and Evolution*, 4(24): 4578-4588
49. **Goodsman, D.**, Cooke, B., Coltman, D.W., Lewis, M.A. (2014) The genetic signature of rapid range expansions: dispersal, growth and invasion speed *Theoretical Population Biology*, 98: 1-10.
50. **Potts, J.R.**, **Auger-Méthé, M.**, Lewis, M.A. (2014) A generalized residual technique for analyzing complex movement models using the earth mover's distance. *Methods in Ecology and Evolution*, 5(10): 1012-1022.
51. **Bateman, A.W.**, Lewis, M.A., Gall, G., Manser, M.B., Clutton-Brock, T.H. (2014) Territoriality and home-range dynamics in meerkats, *Suricata suricatta*: a mechanistic modelling approach, *Journal of Animal Ecology*, 84(1): 260-271
52. **Potts, J.R.**, Mokross, K., Lewis, M.A. (2014) A unifying framework for quantifying the nature of animal interactions. *Journal of the Royal Society Interface*, 11(96): 20140333.

53. **Jin, Y.**, Hilker, F., Steffler, P., Lewis, M.A. (2014) Seasonal invasion dynamics in a spatially heterogeneous river with fluctuating flows. *Bulletin of Mathematical Biology*, 76(7): 1522-1565.
54. **Potts, J.R.**, Lewis, M.A. (2014) How do animal territories form and change? Lessons from 20 years of mechanistic modeling. *Proceedings of the Royal Society B*, 281: 20140231.
55. **Potts, J.R.**, Lewis, M.A. (2014) A mathematical approach to territory formation. *American Mathematical Monthly*, 121(9): 754-770
56. Jacobsen, J., **Jin, Y.**, Lewis, M.A. (2014) Integro-difference models for persistence in temporally varying river environments. *Journal of Mathematical Biology*, 70(3): 549-590
57. Drolet, D., Locke, A., Lewis, M.A., Davidson, J. (2014) User-friendly and evidence-based tool to evaluate probability of eradication of aquatic non-indigenous species. *Journal of Applied Ecology*, 51(4): 1050-1056.
58. **Potapov, A., Schlaegel, U.**, Lewis, M.A. (2014) Evolutionary stable diffusive dispersal. *Discrete and Continuous Dynamical Systems B*, 19(10): 3319-3340.
59. **Molnár, P.K.**, Lewis, M.A., Derocher, A.E. (2014) Estimating Allee thresholds before they can be observed: polar bears as a case study. *PLoS One*. ONE 9(1): e85410
60. **Peacock, S.**, Connors, B., Krkošek, M., Irvine, J.S., Lewis, M.A. (2014) Can reduced predation offset negative effects of sea louse parasites on chum salmon? *Proceedings of the Royal Society of London B*, 281(1776): 20132913.
61. **Potts, J.R.**, Bastille-Rousseau, G., Murray, D., Schaefer, J., Lewis, M.A. (2013) Predicting local and nonlocal effects of resources on animal space use using a mechanistic step-selection function. *Methods in Ecology and Evolution*, 5(3): 253-262.
62. Fagan, W., Lewis, M.A., **Auger-Methe, M.**, Avgar, T., Benhamou, S., **Breed, G.**, LaDage, L., **Schlägel, U.E.**, Tang, W., Papastamatiou, Y.P., Forester, J., Mueller, T. (2013) Spatial memory and animal movement. *Ecology Letters*, 16(10): 1316-1329.
63. **Huang, Q., Parshotham, L.**, Wang, H. Bampfylde, C., Lewis, M.A. (2013) Mathematical risk assessment of contaminants on fish population dynamics. *Journal of Theoretical Biology*, 334: 71-79.
64. Krkošek, M., **Ashander, J.**, Frazer, N., Lewis, M.A., (2013) Allee effect from parasite spill-back. *American Naturalist*, 182(5): 640-652.
65. **Rajakaruna, H., Potapov, A.**, Lewis, M.A. (2013) Impact of stochasticity in immigration and reintroductions on colonizing and declining populations. *Theoretical Population Biology*, 85: 38-48.
66. **Potapov, A.**, Merrill, E., Pybus, M., Coltman, D., Lewis, M.A. (2013) Chronic wasting disease: Possible transmission mechanisms in deer. *Ecological Modelling*, 250: 244-257.
67. **Peacock, S.J.**, Krkošek, M., Proboscisz, S., Orr, C., Lewis, M.A. (2013) Cessation of a salmon decline with control of parasites. *Ecological Applications*, 23(3): 606-620.
68. Lewis, M.A., Li, B. (2013) Spreading speed, traveling waves and the minimal domain size in impulsive reaction-diffusion models, *Bulletin of Mathematical Biology*, 74(10): 2383-2402.
69. **Potapov, A.**, Merrill, E., Lewis, M.A. (2012) Wildlife disease elimination and density dependence. *Proceedings of the Royal Society B*, 279(1741): 3139-3145.
70. **McKenzie, H.W.**, Merrill, E.H., Spiteri, R., Lewis, M.A. (2012) How linear features alter predator movement and the functional response *Royal Society Interface Focus*, 2(2): 205-216.
71. Krkošek, M., Connors, B.M., Lewis, M.A., Poulin, R. (2012) Allee effects may slow the spread of parasites in a coastal marine ecosystem. *American Naturalist*, 179(3): 401-412.

72. **Ashander, J., Krkošek, M.,** Lewis, M.A. (2012) Aquaculture-induced changes to dynamics of migratory hosts and specialist parasite: A case study of pink salmon and sea lice. *Theoretical Ecology*, 5(2): 231-252.
73. **Rajakaruna, H., Strasser, C.,** Lewis, M.A. (2012) Identifying non-invasible habitats for marine copepods using temperature-dependent R_0 . *Biological Invasions*, 14(3): 633-647.
74. **Jin, Y.,** Lewis, M.A. (2012) Seasonal influences on population spread and persistence in streams: Spreading speeds. *Journal of Mathematical Biology*, 65(3): 403-439.
75. **McKenzie, H.W., Jin, Y.,** Jacobsen, J.T., Lewis, M.A. (2012) R_0 analysis of a spatiotemporal model for a stream population *SIAM J. on Applied Dynamical Systems*, 11(2): 567-596.
76. **Potapov, A., Muirhead, J.M.,** Yan, N, Lele, S., Lewis, M.A. (2012) Models of lake invasibility by *Bythotrephes longimanus*, a nonindigenous zooplankton. *Biological Invasions*, 13(11): 2459-2476.
77. Yan, N.D, Leung, B., Lewis, M.A., Peacor, S.D. (2011) The spread, establishment and impacts of the spiny water flea, *Bythotrephes longimanus*, in temperate North America: a synopsis of the special issue. *Biological Invasions*, 13(11): 2423-2432.
78. Krkošek, M, Connors, B.M., Morton A., Lewis, M.A. Dill L.M. Hilborn R. (2011) Effects of parasites from salmon farms on productivity of wild salmon. *Proceedings of the National Academy of Sciences*, 108(35): 14700-14704.
79. **Strasser, C.A,** Dibacco, C, Lewis, M.A. (2011) A mechanistic model for understanding invasions with environment as a predictor of population success. *Diversity and Distributions*, 17(6): 1210-1224.
80. **Auger-Méthé, M.,** Cassidy St. Clair, C., Lewis, M.A., Derocher, A.E. (2011) Sampling rate and misidentification of Lévy and non-Lévy movement paths: Comment. *Ecology*, 92(8): 1699-1701.
81. **Muirhead, J.,** Lewis, M.A., MacIsaac, H.J. (2011) Prediction and error in multi-stage models for spread of aquatic invasive species. *Diversity and Distributions*, 17(2): 323-337.
82. **Wittmann, M.J,** Lewis, M.A., Young, J.D., Yan, N.D. (2011) Temperature-dependent Allee effects in a stage-structured model for *Bythotrephes* establishment. *Biological Invasions*, 13(11): 2477-2497.
83. **Jin, Y.,** Lewis, M.A. (2011) Seasonal influences on population spread and persistence in streams: Critical domain size *SIAM J. Appl. Math*, 71(4): 1241-1262.
84. **Krkošek, M.,** Connors, B.M., Ford, H. Peacock, S., Mages, P. Ford, J.S., Morton, A., Volpe, J.P., Hilborn, R., Dill, L.M., Lewis, M.A. (2011) Fish farms, parasites, and predators: implications for salmon population dynamics *Ecological Applications*, 21(3): 897-914.
85. **Potapov, A, Muirhead, J.M.,** Lele, S.R., Lewis, M.A. (2011) Stochastic gravity models for modeling lake invasions. *Ecological Modelling*, 222(4): 964–972.
86. **Molnár, P.K.,** Derocher, A.E., Klanjscek, T., Lewis, M.A. (2011) Predicting climate change impacts on polar bear litter size. *Nature Communications*, 2: 186.
87. **Marleau, J.N., Jin, Y.,** Bishop, J., Fagan, W.F., Lewis, M.A. (2011) A Stoichiometric model of early plant primary succession on Mount St. Helens. *American Naturalist*, 177(2): 233-245.
88. **Molnár, P.K.,** Derocher, A.E., Theimann, G., Lewis, M.A. (2010) Predicting survival, reproduction and abundance of polar bears under climate change. *Biological Conservation*, 143(7): 1612-1622.
89. Finnoff, D., **Potapov, A.,** Lewis, M.A. (2010) Control and the management of a spreading invader. *Resource and Energy Economics*, 32(4): 534–550.
90. Lewis, M.A., **Nelson, W.,** Xu, C. (2010) A Structured Threshold Model for Mountain Pine Beetle Outbreak. *Bull. Math. Biol.*, 72(3): 565–589.

91. **Krkošek, M.**, Lewis, M. A. (2010) An R_0 theory for source-sink dynamics with applications to *Dreissena* competition. *Theoretical Ecology*, 3(1): 25–43.
92. **Hamelin, F.**, Lewis, M.A. (2010) A differential game theoretical analysis of mechanistic models for territoriality. *Journal of Mathematical Biology*, 61(5): 665-694.
93. **Hilker, F.M.**, Lewis, M.A. (2010) Predator-prey systems in streams and rivers. *Theoretical Ecology*, 3(3): 175-193.
94. **de Camino-Beck, T.**, Lewis, M.A. (2009) Invasion with stage-structured coupled map lattices: Application to the spread of scentless chamomile. *Ecological Modelling*. 220(23): 3394-3403.
95. **Molnár, P.K.**, Klanjscek, T., Derocher, A., Obbard, M.E., Lewis, M.A. (2009) A body composition model to estimate mammalian energy stores and metabolic rates from body mass and body length, with application to polar bears. *Journal of Experimental Biology*, 212(Pt15): 2313-2323.
96. **Krkošek, M.**, Morton, A., Volpe, J.P., Lewis, M.A. (2009) Sea lice and salmon population dynamics: Effects of exposure time for migratory fish *Proceedings of the Royal Society of London B*, 276(1668): 2819-2828.
97. **Cobbold, C.A.**, Roland, J., Lewis, M.A. (2009) The impact of parasitoid emergence time on host parasitoid population dynamics. *Theoretical Population Biology*, 75(2-3): 201-215.
98. **Lee, J.M.**, Hillen, T., Lewis, M.A. (2009) Pattern formation in prey-taxis systems. *Journal of Biological Dynamics*, 3(6): 551–573.
99. **Jerde, C.L., Bampfylde, C.J.**, Lewis, M.A. (2009) Chance establishment for sexual, semelparous species: Overcoming the Allee effect. *American Naturalist*, 173(6): 734-746.
100. **de Camino-Beck, T.**, Lewis, M.A., and van den Driessche, P. (2009) Graph-theoretic method for the basic reproduction number in continuous time epidemiological models. *Journal of Mathematical Biology*, 59(4): 503-516.
101. **McKenzie, H.W.**, Lewis, M.A., Merrill, E.H. (2009) First passage time analysis of animal movement and insights into the functional response. *Bulletin of Mathematical Biology*, 71(1): 107-129.
102. **Eftimie, R.**, de Vries, G., Lewis, M.A. (2009) Weakly nonlinear analysis of a hyperbolic model for animal group formation. *Journal of Mathematical Biology*, 59(1): 37–74.
103. **Li, B.**, Lewis M.A, and Weinberger, H.F. (2009) Existence of traveling waves for integral recursions with nonmonotone growth functions. *Journal of Mathematical Biology*, 58(3): 323–338.
104. **McKenzie, H., Jerde, C.**, Visscher, D.R., Merrill, E.H., Lewis, M.A. (2009) Inferring linear feature use in the presence of GPS measurement error. *Environmental & Ecological Statistics*, 16(4):531–546.
105. **Krkošek, M.**, Ford, J.S., Morton, A., Lele, S., Lewis, M.A. (2008) Response to Comment on “Declining wild salmon populations in relation to parasites from farm salmon.” *Science*, 322(5909): 1790.
106. **Krkošek, M.**, Ford, J., Morton, A., Lele, S., Lewis, M. (2008) Sea lice and pink salmon declines: Response to Brooks and Jones. *Reviews in Fisheries Science*, 16(4): 413-420.
107. **Nelson, W.A.**, Lewis, M.A. (2008) Connecting host physiology to host resistance in the conifer-bark beetle system. *Theoretical Ecology*, 1(3): 163-177.
108. **de Camino Beck, T.**, Lewis, M.A. (2008) On net reproductive rate and the timing of reproductive output. *American Naturalist*, 172 (1): 128-139.
109. **Potapov, A.B.**, Lewis, M.A. (2008) Allee effect and control of lake system invasion. *Bulletin of Mathematical Biology*, 70(5): 1371-1397.

110. **Molnár, P.K.**, Derocher, A.E., Lewis, M.A. Taylor, M.K. (2008) Modeling the mating system of polar bears - a mechanistic approach to the Allee effect. *Proceedings of the Royal Society of London B*, 275(1631): 217-226.
111. **Lee, J.M.**, Hillen, T., Lewis, M.A. (2008) Continuous travelling waves for Prey-taxis. *Bulletin of Mathematical Biology*, 70(3): 654-676.
112. **Nelson, W.A., Potapov, A.**, Lewis, M.A., Hundsdofer, A., He, F. (2008) Balancing ecological complexity in predictive models: A reassessment of risk models in the mountain pine beetle. *Journal of Applied Ecology*, 45(1): 248-257.
113. **Eftimie, R.**, de Vries, G., Lewis, M.A. (2007) Complex spatial group patterns result from different animal communication mechanisms. *Proceedings of the National Academy of Sciences*, 104: 6974-6979.
114. **Krkošek, M.**, Ford, J.S., Morton, A., Lele, S., Myers, R.A., Lewis, M.A. (2007) Declining wild salmon populations in relation to parasites from farm salmon. *Science*, 318: 1772-1775.
115. **Krkošek, M.**, Gottesfeld, A., Proctor, B., Rolston, D., Carr-Harris, C., Lewis, M.A. (2007) Effects of host migration, diversity, and aquaculture on disease threats to wild fish populations. *Proceedings of the Royal Society of London, Series B*, 274: 3141-3149.
116. **Krkošek, M.**, Lauzon-Guy, J.S, Lewis, M.A. (2007) Relating dispersal and range expansion of California sea otters. *Theoretical Population Biology*, 71: 401-407.
117. **Jerde, C.**, Lewis, M.A. (2007) Waiting for invasions: A framework for the arrival of non-indigenous species. *The American Naturalist*, 170: 1-9.
118. Weinberger, H.F., Lewis, M.A., Li, B. (2007) Anomalous spreading speeds of cooperative recursion systems. *Journal of Mathematical Biology*, 55: 207-222.
119. **Lutscher, F.**, McCauley, E., Lewis, M.A. (2007) Spatial patterns and coexistence mechanisms in systems with unidirectional flow. *Theoretical Population Biology*, 71(3): 267-277.
120. **Noonburg, E.G.**, Newman L.A., Lewis, M.A., Crabtree, R., **Potapov, A.** (2007) Sequential decision-making in a variable environment: Modeling elk movement in Yellowstone National Park as a dynamic game. *Theoretical Population Biology*, 71(2): 182-195.
121. **de Camino Beck, T.**, Lewis, M.A. (2007) A new method for calculating net reproductive value from graph reduction with applications to the control of invasive species. *Bulletin of Mathematical Biology*, 69: 1341-1354
122. **Eftimie, R.**, de Vries, G., Lewis, M.A., Lutscher, F. (2007) Modeling group formation and activity patters in self-organizing collectives of individuals. *Bulletin of Mathematical Biology*, 69(5): 1537-1565.
123. **Bampfyld, C.**, Lewis, M.A. (2007) Biological control through intraguild predation: Case studies in pest control, invasive species and range expansion. *Bulletin of Mathematical Biology*, 69: 1031-1066.
124. Nisbet, R., Anderson, K., McCauley, E., Lewis, M.A. (2007) Response of equilibrium states to spatial environmental heterogeneity in advective systems. *Mathematical Biosciences and Engineering*, 4(1): 1-13.
125. **Potapov, A.**, Lewis, M.A., Finnoff, D. (2007) Prevention of a lake system invasion: Macroscopic description. *Natural Resource Modeling*, 20(3): 351-379.
126. **Krkošek, M.**, Lewis, M.A., Volpe, J., Morton, A. (2006) Fish farms and sea lice infestations of wild juvenile salmon in the Broughton Archipelago - A rebuttal to Brooks (2005) *Reviews in Fisheries Science*, 14(1): 1-11.
127. **Krkošek, M.**, Lewis, M.A., Morton, A., Frazer, L.N., Volpe, J.P. (2006) Epizootics of wild fish induced by farm fish. *Proceedings of the National Academy of Sciences*, 103(42): 15506-15510. *Supplemental material*.

128. **Hurford, A.**, Hebblewhite, M., Lewis, M.A. (2006) A spatially explicit model for the Allee effect: Why wolves recolonize so slowly in Greater Yellowstone. *Theoretical Population Biology*, 70(3): 244-254.
129. **Lutscher, F.**, Lewis, M.A., McCauley, E. (2006) Effects of heterogeneity on spread and persistence in rivers. *Bulletin of Mathematical Biology*, 68: 2129-2160.
130. Moorcroft, P.R., Lewis, M.A., Crabtree, R. (2006) Mechanistic home range models capture spatial patterns and dynamics of coyote territories in Yellowstone. *Proceedings of the Royal Society of London B*, 273: 1651-1659.
131. Lewis, M.A., **Renclawowicz, J.**, van den Driessche, P., **Wonham, M.J.** (2006) A comparison of continuous and discrete time West Nile virus models. *Bulletin of Mathematical Biology*, 68(3): 491-509.
132. **Wonham, M.J.**, Lewis, M.A., **Renclawowicz, J.**, van den Driessche, P. (2006). Transmission assumptions generate conflicting predictions in host–vector disease models: a case study in West Nile virus. *Ecology Letters*, 9(6): 706–725.
133. Topaz, C., Bertozzi, A., Lewis, M.A. (2006) A nonlocal continuum model for biological aggregation. *Bulletin of Mathematical Biology*, 68(7): 1601-1623.
134. Moorcroft, P., Pacala, S., Lewis, M.A. (2006) Potential role of natural enemies on tree species range expansions following climate change. *Journal of Theoretical Biology*, 241(3): 601–616.
135. Lewis, M.A., **Renclawowicz, J.**, van den Driessche, P. (2006) Traveling waves and spread rates for a West Nile virus model. *Bulletin of Mathematical Biology*, 68(1): 3-23.
136. **Wonham, M.J.**, Lewis, M.A., MacIsaac, H.J. (2005) Minimizing invasion risk by reducing propagule pressure: Application to ballast-water exchange. *Frontiers in the Ecology and the Environment*, 3: 473-478.
137. **Lutscher, F.**, **Pachepsky, E.**, Lewis, M.A. (2005) The effect of dispersal patterns on stream populations. *SIAM Review*, 47: 749-772. (modified version of next article, selected as SIGEST paper of outstanding interest and chosen for republication in SIAM Review).
138. **Lutscher, F.**, **Pachepsky, E.**, Lewis, M.A. (2005) The effect of dispersal patterns on stream populations. *SIAM Journal of Applied Math*, 65:1305-1327
139. **Wonham, M.J.**, Bailey, S.A., MacIsaac, H.J., Lewis, M.A. (2005) Modeling the invasion risk of diapausing organisms transported in ballast sediments. *Can. J. Fish. Aquat. Science*, 62: 2386-2398.
140. Drake, J., Lodge, D., Lewis, M.A. (2005) Theory and preliminary analysis of species invasions from ballast water: Controlling discharge volume and location. *American Midland Naturalist*, 154: 459-470.
141. Fagan, W., Lewis, M.A., Neubert, M., Aumann, C., Apple, J., Bishop, J. (2005) When can herbivores slow or reverse the spread of an invading plant? A test case from Mount Saint Helens. *American Naturalist*, 166 (6): 669-685.
142. **Hilker, F.M.**, Lewis, M.A., Seno, H., Langlais, M., Malchow, H. (2005) Pathogens can slow down or reverse invasion fronts of their hosts. *Biological Invasions*, 7: 817-832.
143. **Piellaat, A.**, Lewis, M.A., Lele, S., **de Camino-Beck, T.** (2005) Sequential sampling designs for catching the tail of dispersal kernels. *Ecological Modeling*, 190: 205-222.
144. **Li, B.**, Weinberger, H.F., Lewis, M.A. (2005) Spreading speeds as slowest wave speeds for cooperative systems. *Mathematical Biosciences*, 196: 82-98
145. **Krkošek, M.**, Lewis, M.A., Volpe, J.P. (2005) Transmission dynamics of parasitic sea lice from farm to wild salmon. *Proceedings of the Royal Society of London B*, 272: 689-696
146. **Lutscher, F.**, **Pachepsky, E.**, Lewis, M.A. (2005) The effect of dispersal patterns on stream populations. *SIAM Journal on Applied Math*, 65: 1305-1327.

147. **Pachepsky, L., Lutscher, F.**, Nisbet, R., Lewis, M.A. (2005) Persistence, spread, and the drift paradox. *Theoretical Population Biology*, 67: 61-73.
148. **Cobbold, C.A.**, Lewis, M.A., Roland, J., **Lutscher, F.** (2005) How parasitism affects critical patch size in a host-parasitoid system: Application to Forest Tent Caterpillar. *Theoretical Population Biology*, 67: 109-125.
149. Holt, R., Keitt, T., Lewis, M.A., Maurer, B., Taper, M. (2005) Theoretical models of species' borders: Single species approaches. *Oikos*, 108: 18-27.
150. **Potapov, A.**, Lewis, M.A. (2004) Climate and competition: The effect of moving range boundaries on habitat invasibility. *Bulletin of Mathematical Biology*, 66: 975-1008.
151. **Wonham, M.J., de Camino-Beck, T.**, Lewis, M.A. (2004) An epidemiological model for West Nile Virus: Invasion analysis and control applications. *Proceedings of the Royal Society of London B*, 271: 501-507.
152. **Lutscher, F.**, Lewis, M.A. (2004) Spatially-explicit matrix models: A mathematical analysis of stage-structured integrodifference equations. *Journal of Mathematical Biology*, 48: 293-324.
153. Leung, B., Lodge, D.M., Finnoff, D., Shogren, J.F., Lewis, M.A., Lamberti, G. (2003) An ounce of prevention or a pound of cure: Bioeconomic risk analysis of invasive species. *Proceedings of the Royal Society of London B*, 269: 2407-2413.
154. Clark, J., Lewis, M.A., McLachlan, J., HilleRisLambers, J. (2003) Estimating population spread based on dispersal data: What can we forecast and how well? *Ecology*, 84: 1979-1988.
155. Haderler, K.P., Lewis, M.A. (2002) Spatial dynamics of the diffusive logistic equation with sedentary component. *Canadian Applied Math. Quarterly*, 10: 473-500.
156. MacIsaac, H.J., **Robbins, T.C.**, Lewis, M.A. (2002) Modeling aquatic species invasions. *Canadian Journal of Fisheries and Aquatic Science*, 59: 1245-1256.
157. Fagan, W., Lewis, M.A., Neubert, M.G., van den Driessche, P. (2002) Invasion theory and biological control. *Ecology Letters*, 5: 148-157.
158. Briscoe, B., Lewis, M.A., **Parrish, S.** (2002) Home range formation in wolves due to scent marking. *Bulletin of Mathematical Biology*, 64: 261-284.
159. Lewis, M.A., **Li, B.**, Weinberger, H.F. (2002) Spreading speed and the linear determinacy for two-species competition models. *Journal of Mathematical Biology*, 45: 219-233
160. Weinberger, H.F., Lewis, M.A., **Li, B.** (2002) Analysis of linear determinacy for spread in cooperative models. *Journal of Mathematical Biology*, 45: 183-218
161. Lewis, M.A., Moorcroft, P.R. (2001) ESS analysis of mechanistic home range models: the value of signals in spatial resource partitioning. *Journal of Theoretical Biology*, 210: 449-461
162. **Owen, M.**, Lewis, M.A. (2001) Can predation slow, stall or reverse a prey invasion? *Bulletin of Mathematical Biology*, 63: 655-684.
163. Clark, J.S., Lewis, M.A., Horvath, L. (2001) Invasion by extremes: Population spread with variation in dispersal and reproduction. *American Naturalist*, 157: 537-554.
164. **Owen, M.**, Lewis, M.A. (2001) The mechanics of lung tissue under high frequency ventilation. *SIAM Journal on Applied Mathematics*, 61: 1731-1761.
165. Keitt, T.H., Lewis, M.A., Holt, R.D. (2001) Allee dynamics, critical phenomena and species' borders. *American Naturalist*, 157: 203-216.
166. Clark, J.S., Horvath, L., Lewis, M.A. (2001) On the estimation of spread rate for a biological population. *Statistics and Probability Letters*, 51: 225-234.
167. Lewis, M.A. (2000). Spread rate for a nonlinear stochastic invasion. *Journal of Mathematical Biology*, 41: 430-454

168. Lewis, M.A., Pacala, S. (2000) Modeling and analysis of stochastic invasion processes. *Journal of Mathematical Biology*, 41: 387-429
169. Neubert, M.G., Kot, M., Lewis, M.A. (2000) Invasion speeds in fluctuating environments. *Proceedings of the Royal Society of London B*, 267: 1603-1610.
170. van Kirk, R.W., Lewis, M.A. (1999) Edge permeability and population persistence in isolated habitat patches. *Natural Resources Modeling*, 12: 37-64.
171. Moorcroft, P.R., Lewis, M.A., Crabtree R. (1999) Home range analysis using a mechanistic home range model. *Ecology*, 80: 1656-1665.
172. Clark, J. Fastie, C. Hurtt, G., Jackson, S., Johnson, C., King, G., Lewis, M., Lynch, J., Pacala, S., Prentice, C., Schupp, G, Webb, T., Wyckoff, P. (1998) Reid's Paradox of rapid plant migration: Dispersal theory and interpretation of paleoecological records. *BioScience*, 48: 13-24.
173. Ermentrout, B., Lewis, M.A.: (1997) Pattern formation in systems with one spatially distributed species. *Bulletin of Mathematical Biology*, 59: 533-550.
174. Sherratt, J.A, Eagan, B.T., Lewis, M.A. (1997) Oscillations and chaos behind predator-prey invasion: Mathematical artifact or ecological reality? *Phil. Trans. Roy. Soc. B*, 352: 21-38.
175. Lewis, M.A., White, K.A.J., Murray, J.D. (1997) Analysis of a model for wolf territories. *Journal of Mathematical Biology*, 35: 749-774.
176. **van Kirk, R.W.**, Lewis, M.A. (1997) Integrodifference models for persistence in fragmented habitats. *Bulletin of Mathematical Biology*, 59: 107-138.
177. White, K.J., Lewis, M.A., Murray, J.D. (1996) Wolf-deer interactions: A mathematical model. *Proceedings of the Royal Society of London B*, 263: 299-305.
178. Lewis, M.A., Schmitz, G. (1996) Biological invasion of an organism with separate mobile and stationary states: *Modeling and analysis. Forma*, 11: 1-25.
179. Kot, M., Lewis, M.A., van den Driessche, P. (1996). Dispersal data and the spread of invading organisms. *Ecology*, 77: 2027-2042.
180. Veit, R.R., Lewis, M.A. (1996) Dispersal, population growth and the Allee Effect: Dynamics of the House Finch invasion of eastern North America. *American Naturalist*, 148: 255-274.
181. Lewis, M.A., Schmitz, G., Kareiva, P., Trevors, J. (1996) Models to examine containment and spread of genetically engineered microbes. *Journal of Molecular Ecology*, 5: 165-175.
182. Cruywagen G., Kareiva, P., Lewis, M.A., Murray, J.D. (1996) Competition in a spatially heterogeneous environment: Modelling the risk of spread of genetically engineered population. *Theoretical Population Biology*, 49(1): 1-38
183. White, K.J., Lewis, M.A., Murray, J.D. (1996) A model for wolf-pack territory formation and maintenance. *Journal of Theoretical Biology*, 178(1): 29-43.
184. Neubert, M., Kot, M., Lewis, M.A. (1995) Dispersal and pattern formation in a discrete-time predator-prey model. *Theoretical Population Biology*, 48(1): 7-43.
185. Sherratt, J.A., Lewis, M.A., Fowler, A.C. (1995) Ecological chaos in the wake of invasion. *Proceedings of the National Academy of Science*, 92(7): 2524-2528.
186. Lewis, M.A. (1994) Spatial coupling of plant and herbivore dynamics: The contribution of herbivore dispersal to transient and persistent "waves" of damage. *Theoretical Population Biology*, 45: 277-312.
187. Holmes, E.E., Lewis, M.A., Banks, J.E. and Veit, R.R. (1994) Partial differential equations in ecology: spatial interactions and population dynamics. *Ecology*, 75(1): 17-29.
188. Sneyd, J., Atri, A., Ferguson, M.W.J., Lewis, M.A., Seward, W., Murray, J.D. (1993) A model for the spatial patterning of teeth primordia in the Alligator: Initiation of the dental determinant. *Journal of Theoretical Biology*, 165(4): 633-658.

189. Lewis, M.A., Murray, J.D. (1993) Modelling territoriality and wolf-deer interactions. *Nature*, 366: 738-740
190. Lewis, M.A., van den Driessche, P. (1993) Waves of extinction from sterile insect release. *Mathematical Bioscience*, 116(2): 221-247.
191. Lewis, M.A., Kareiva, P. (1993) Allee dynamics and the spread of invading organisms. *Theoretical Population Biology*, 43(2): 141-158.
192. Lewis, M.A., Murray, J.D. (1992) Analysis of dynamic and stationary pattern formation in the cell cortex. *Journal of Mathematical Biology*, 31(1): 25-71.
193. Lewis, M.A., Murray, J.D. (1991) Analysis of stable two-dimensional patterns in contractile cytogel. *Journal of Nonlinear Science*, 1(3): 289-311.
194. Lewis, M.A., Grindrod, P. (1991) One-way blocks in cardiac tissue: A mechanism for propagation failure in Purkinje fibres. *Bulletin of Mathematical Biology*, 53(6): 881-899.
195. Grindrod, P., Lewis, M.A., Murray, J.D. (1991) A geometrical approach to wave-type solutions of excitable reaction-diffusion systems. *Proceedings of the Royal Society of London, A*, 433(1887): 151-164.
196. Hethcote, H.W., Lewis, M.A., van den Driessche, P. (1989) An epidemiological model with a delay and nonlinear incidence rate. *Journal of Mathematical Biology*, 27(1): 49-64.

Other Publications:

197. Peacock, S.J., Bateman, A.W., Connors, B., Goodwin, S., Lewis, M.A., Krkošek, M. (2017) Ecology of a marine ectoparasite in farmed and wild salmon, In K. Wilson, A. Fenton and D.M. Tompkins (eds) *Wildlife Disease Ecology: Linking Theory to Data and Application*, *Ecological Reviews* (In Press).
198. Lewis, M.A. (2014) Invasive Species. In H.G. Kaper and C. Rousseau (eds) *The Mathematics of Planet Earth: An International Year of Scientific and Outreach Activities*, SIAM
199. Lewis, M.A. (2014) Scientific Research on Sustainability and its Impact on Policy and Management. In H.G. Kaper and C. Rousseau (eds) *The Mathematics of Planet Earth: An International Year of Scientific and Outreach Activities*, SIAM
200. Hillen, T., Lewis M.A. (2013) Mathematical Ecology of Cancer, Chapter 2. In G. A. Marsan and M. Delitala et al. (eds) *Managing complexity, reducing perplexity. Modeling biological systems*, Springer.
201. Kot, M., Lewis, M.A., Neubert, M.G. (2012). Integrodifference Equations. In A. Hastings and L. Gross (Eds.) *Sourcebook in Theoretical Ecology*, University of California Press.
202. Lewis, M.A., Jerde, C. (2012). Invasion Biology. In A. Hastings and L. Gross (Eds.) *Sourcebook in Theoretical Ecology*, University of California Press.
203. Finnoff, D., **Potapov, A.**, Lewis M.A. (2010). Second best policies on invasive species management: When are they “good enough”? In Charles Perrings, Hal Mooney, and Mark Williamson (eds) *Bioinvasions and Globalization*, Oxford University Press.
204. Lewis, M.A., **Krkošek, M.**, **Wonham, M.J.** (2010). Dynamics of emerging wildlife disease, In S. Sivaloganathan (ed) *Mathematical Biology*, Fields Institute Communications, American Mathematical Society.
205. Haderler, K.P., Hillen, T., Lewis, M.A. (2010). Biological modeling with quiescent phases, Chapter 6. In S. Cantrell, C. Cosner and S. Ruan (eds.) *Spatial Ecology*, CRC Press.
206. Lewis, M.A., **Potapov, A.**, Finnoff, D. (2009). Modeling integrated decision-making responses to invasive species. In R.P Keller, D.M. Lodge, M.A. Lewis and J.F. Shogren, (eds.)

- Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management*, (Ch 9, pp 180-204). Oxford University Press.
207. Lodge, D.M., Lewis, M.A., Shogren, J.F., Keller, R.P. (2009). Introduction to biological invasions: Biological, economic, and social perspectives. In R.P Keller, D.M. Lodge, M.A. Lewis and J.F. Shogren, (eds.) *Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management*, (Ch 1, pp 1-24). Oxford University Press.
208. Keller, R.P., Lewis, M.A., Lodge, D.M., Shogren, J.F., **Krkošek, M.** (2009). Putting bioeconomic research into practice. In R.P Keller, D.M. Lodge, M.A. Lewis and J.F. Shogren, (eds.) *Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management*, (Ch 13, pp 266-284). Oxford University Press.
209. Lewis, M.A., Hillen T., **Lutscher, F.** (2009). Spatial dynamics in ecology. In M.A. Lewis, M.A.J. Chaplain, J.P. Keener and P.K. Maini (Eds.), *Park City Mathematics Institute Volume in Mathematical Biology*, (pp 25-45). Institute for Advanced Study, Princeton.
210. **Wonham, M.J.**, Lewis, M.A. (2008). A comparative analysis of West Nile virus models. In F. Brauer, P. van den Driessche and J. Wu. (Eds.), *Lecture Notes in Mathematical Epidemiology*, (pp. 365-390). Springer-Verlag.
211. **Wonham, M.J.**, Lewis, M.A. (2008). Modeling Marine Invasions: Current and Future Approaches. In M G. Rilov and J. Crooks, (Eds.), *Biological Invasions in Marine Ecosystems* (Ch 4). Springer-Verlag Berlin Heidelberg.
212. Lewis, M.A., Neubert, M.G., Caswell, H., Clark, J, Shea, K. (2006). *A guide to calculating discrete-time invasion rates from data*. In Marc W. Cadotte, Sean M. McMahon, and Tadashi Fukami (Eds.), *Conceptual Ecology and Invasions Biology: Reciprocal Approaches To Nature* (pp. 169–192). Springer, The Netherlands.
213. **de Camino-Beck, T.**, McClay, A.S., Lewis M.A. (2003). Spatially explicit models for weed-biocontrol agent interactions: scentless chamomile as a case study. In J.M. Cullen (Ed.), *Proceedings of the XI International Symposium on Biological Control of Weeds*, April 27 - May 2, 2003, Canberra, Australia. CSIRO (2004).
214. White, K.J., Lewis, M.A., Murray, J.D. (1998). On wolf territoriality and deer survival. In J. Bascompte & R.V. Sole (Eds.), *Modeling Spatiotemporal Dynamics*, (Ch.6 pp. 105–126). Verlag and Landes Bioscience.
215. Lewis, M.A. (1997). Variability, patchiness and jump dispersal in the spread of an invading population, In D. Tilman and P. Kareiva (Eds.), *Spatial Ecology: The Role of Space in Population Dynamics and Interspecific Interactions*, (Chapter 3, pp. 46–69). Princeton University Press.
216. Kareiva, P., Settle, W., Lewis, M.A. (1992). The significance of vegetation structure as a constraint on insect mobility: Implications for pest management. In Shiyomi, M., Yano, E., Koizumi, H., Andow, D.A. and Nobuhiko, H. (Eds.), *Ecological Processes in Agro-Ecosystems* (pp. 67–78). National Institute of Agro-Environmental Sciences, Japan.

Books:

217. Lewis, M.A., Petrovskii, S., **Potts. J.** (2016) *Mathematics Behind Biological Invasions*, Springer-Verlag.
218. Lewis, M.A., Maini, P.K, Petrovskii, S. (2012) *Dispersal, Individual Movement and Spatial Ecology: A Mathematical Perspective*, Springer-Verlag.
219. Lewis, M.A., Chaplain, M.A.J., Keener, J.P., Maini, P.K. (2009). *Mathematical Biology*. Institute for Advanced Study/Park City Mathematics Institute.

220. Keller, R.P., Lodge, D.M., Lewis, M.A., Shogren, J.F. (2009). *Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management*. Oxford University.
221. de Vries, G., Hillen, T., Lewis, M.A., Müller, J., Schonfisch, B. (2006). *A Course in Mathematical Biology: Quantitative Modeling with Mathematical and Computational Methods*, SIAM Press 309 pages.
222. Moorcroft, P., Lewis, M.A. (2006). *Mechanistic Home Range Analysis*. Princeton Monograph in Population Biology 172 pages.
223. Othmer, H.G., Adler, F.R., Lewis, M.A., Dallon, J.C. (1997). *Mathematical Modeling in Biology: Case Studies in Ecology, Physiology and Cell Biology*. Prentice Hall. ISBN 0-13-574039-8.

Manuscripts:

224. Fortin, M.-J., Peres-Neto, P., Lewis, M.A. Putting space back into spatial ecology (invited review, in revision for *Science*).
225. Zygalkakis, K., Byrne, H. and Lewis, M.A. A model for the dynamics of resource allocation in plants (in revision for *Bulletin of Mathematical Biology*).
226. **Garnier, J.**, Robert, C., Lewis, M.A. Mathematical analysis of the neutral genetic diversity dynamics under climate change (manuscript).
227. **Breed, G.A., Goodsman, D.W.,** Severns, P.M., Lewis, M.A. Male harassment, density-dependent emigration, and stability in butterfly metapopulation networks (manuscript to be submitted to *American Naturalist*).
228. **Phillips, J.A., Peacock, S.J., Bateman, A.,** Bartlett, M., Lewis, M.A., Krkošek, M. Game theory of social parasitism in groups of coho salmon predators (under revision for *Theoretical Ecology*).
229. Jin, Y., **Huang, Q.,** Steffler, P.M., Lewis, M.A. Population persistence of a benthic-drift model in a depth-averaged river (in preparation).
230. **Xiao, Y.,** Greiner, R., Lewis, M.A. Evaluation of machine learning methods for predicting eradication of aquatic invasive species (revised manuscript in review at *Biological Invasions*).
231. **Peacock, S.J.,** Krkošek, M. Bateman, A.W., Lewis, M.A. Spatiotemporal sea-louse transmission dynamics of farmed and wild salmon (in preparation).
232. **Peacock, S.J., Bouhours, J.,** Lewis, M.A., Molnár, P.K. Macroparasite dynamics of migratory host populations (submitted to *Theoretical Population Biology*).
233. **Berbert, J.M.,** Lewis, M.A. Superdiffusivity due to resource depletion in random searches (revised manuscript in review at *Ecological Complexity*).
234. Yang, Z., Dai, Q., Foss-Grant, A., Gurarie, E., Lewis, M.A., Fagan, W.F. Adjusting to a new home: movement and activity of reintroduced giant pandas.
235. **Kunegel-Lion, M.,** McIntosh, R.L., Lewis, M.A. Local-scale factors, prediction and management assessment of mountain pine beetle infestation. (under revision for *Ecology and Evolution*).
236. **Kunegel-Lion, M., Goodsman, D.W.,** Lewis, M.A. When managers forage for pests: Functional response applications to human-pest management (in preparation).
237. Lewis, M.A., **Marculis, N.G.,** Shen, Z. Integro-difference equations in the presence of climate change: persistence criterion, travelling waves and inside dynamics (submitted to *Journal of Mathematical Biology*).
238. **Reimer, J.,** Caswell, H., Derocher, A., Lewis, M.A. Ringed seal demography and the environment: Historical cycles and future trends (in preparation).

239. Cantrell, R.S., Cosner, C., Lewis, M.A., Lou, Y. Evolution of dispersal in a spatial population with multiple timescales (in preparation).
240. Peacock, S.J., Bateman, A.W., Connors, B., Godwin, S., Lewis, M.A., Krkošek, M. Ecology of a marine ectoparasite in farmed and wild salmon (book chapter in review).
241. Schakau, V., Hilker, F.M., Lewis, M.A. Fish disease dynamics in changing rivers: Salmonid *Ceratomyxosis* in the Klamath River (for submission to *Theoretical Ecology*).

Book Reviews:

242. Lewis, M.A. (2003). Featured Review: 'Diffusion and Ecological Problems: Modern Perspectives. Second Edition. By Akira Okubo and Simon Levin SIAM Review 45: 127–128.
243. Lewis, M.A. (1996). Review of 'Growth and Diffusion Phenomena: Mathematical Frameworks and Applications, by Robert B. Banks' *Bull. Math. Biol.* 58: 205–206.

Magazine Articles:

244. Lewis, M.A. (2004). Biology Outside the Box, *Science Next Wave*, Feb 13, 2004.
245. Lewis, M.A. (2004). Mathematical Models and Infectious Disease Dynamics. *Pi in the Sky* 8:4.