Alex M. Chubaty, Ph.D.

Ecologist and Simulation Modeller PO Box 96026 RPO West Springs, Calgary, AB, T₃H oL₃ ☑ achubaty@for-cast.ca └ +1.403.708.5790 ♀ achubaty ♀ alexchubaty.com

Background and Expertise

Education

PhD, Biological Sciences (2013) Simon Fraser University, Burnaby, BC

BSc, Biological Sciences (2005) University of Calgary, Calgary, AB

Work Experience

President

FOR-CAST Research & Analytics (Oct 2019 - present)

Ecological modelling and scientific software development.

Spatial Modelling Coordinator

fRI Research (June 2018 - Sept 2019)

Development and maintenance of the LandWeb Natural Range of Variation simulation model;

Development and maintenance of the LandWeb web interface ("app"); Development of spatial spread models of mountain pine beetle (MPB) and fire interactions in AB/SK.

Postdoctoral Researcher

Canadian Forest Service — Pacific Forestry Centre (Sept 2015 - Mar 2018)

Integrate conceptual models of mountain pine beetle (MPB) dispersal and available data into a simulation models to predict the easterly and northerly spread of MPB in Canada. Develop spatial simulation software: SpaDES https://spades.predictiveecology.org/

Université Laval — Département des sciences du bois et de la forêt AND Canadian Forest Service — Pacific Forestry Centre (Mar 2014 - Mar 2018)

Development of individual based models of mountain pine beetle dispersal on the landscape.

Development of spatial simulation software, SpaDES https://spades.predictiveecology.org/

Research Assistant

Simon Fraser University — Surrey Campus (Oct 2012 - May 2013)

Developer and editor of an online journal publishing research essays by undergraduate students.

Grant awarded by SFU Teaching and Learning Development Centre to Dr. Ivona Mladenovic.

Modeller

Canadian Forest Service — Northern Forestry Centre (Jan 2007 - Mar 2007)

Continued development of a model evaluating mountain pine beetle host-acceptance and aggregation

Lab Assistant University of Calgary

Sikes Lab (Nov 2004 - Aug 2005)

Insect collection maintenance; miscellaneous lab work

Longair Lab (Sept 2004 - Aug 2005)

Sorting, identifying, pinning insect specimens

Teaching Experience

Sessional Instructor Simon Fraser University

BISC 300 Evolution (Fall 2013)

Taught lectures; marked assignments and exams Topics covered include: adaption, speciation, origin of life, evolutionary trends over geological time, origin and evolution of modern humans

BISC 407 Population Dynamics (Spring 2011)

Taught lecture and tutorial sessions; marked assignments and exams

Evaluated students' presentations of scientific papers and led discussions on population modelling topics

Topics covered include: lifetables, survivorship, population growth models, differential solvers, intraspecific competition, demographics, population matrices, interspecific competition, community structure, predation, parasitoid/host dynamics, metapopulation dynamics, infectious diseases

Guest Lecturer Simon Fraser University

BISC 888-1 Directed Readings: Data Wrangling and Visualization in R (Fall 2013)

Graduate course

Topics covered: introduction to R and markdown; graphics in R (base plot and ggplot); data manipulation in R (plyr and reshape)

BISC 100 Introduction to Biology (Oct 2010, Nov 2010)

Introduced students to cell metabolism and phenotype expression

BISC 204 Introduction to Ecology (Sept 2006, Nov 2006, Mar 2010, Nov 2011)

Topics covered include: organism distribution and abundance and the theoretical and practical aspects of habitat selection in animals

Presented development of my models of individual behaviour and population dynamics in mountain pine beetle, and implications for landscape-level development

BISC 410 Behavioural Ecology (Feb 2008)

Discussed theoretical and practical aspects of habitat selection in animals

Workshop Instructor

Workshops in R:

Introduction to SpaDES (Pacific Forestry Centre, NRCAN) (Sept 2016, Dec 2016) Introduction to R (BISC 838 Population Ecology, SFU) (Sept 2010, Sept 2012) Introduction to R (Climate Change and Community Structure – NSERC Strategic Grant, SFU) (Nov 2009) Introduction to R (Roitberg Lab Group, SFU) (Sept 2006)

Teaching Assistant Simon Fraser University

BISC 100 Introduction to Biology - Distance Education (Fall 2011, Summer 2012)

Taught general biological principles including cell functions, genetics, evolution, behaviour, population and community dynamics

Ran online tutorial discussions and exam review sessions; assisted with management and instruction of labs; marked assignments and exams

BISC 100 Introduction to Biology (Fall 2010, Spring 2012)

Taught general biological principles including cell functions, genetics, evolution, behaviour, population and community dynamics

Designed and taught lessons for tutorial sessions; assisted with management and instruction of labs; marked assignments and exams

BISC 102 Introductory Biology II (Spring 2006, Spring 2009)

Taught general biological principles including genetics, diversity and evolution, behaviour, population and community dynamics

Designed and taught lessons for tutorial sessions; assisted with management and instruction of labs; marked assignments and exams

BISC 471W Special Topics: Biology Before the Beagle (Fall 2008)

Examination of the history of biological thought, emphasizing the life and times of Charles Darwin

Exploration of popular and technical scientific writing styles; writing for all audiences; writing historical science essays

Designed and taught lessons for tutorial sessions; marked essay assignments

BISC 410 Behavioural Ecology (Spring 2008)

Topics covered: foraging, predation, aggression, habitat selection, reproduction, parental care, social behaviour, conservation

Evaluated students' presentations of scientific papers and led discussions on behavioural and ecological topics; marked assignments and exams

BISC 204 Introduction to Ecology (Fall 2006)

Topics covered: evolution, life history, behavioural ecology, population and community ecology

Evaluated students' presentations of scientific papers and led discussions on ecological topics; marked assignments and exams

University of Calgary

BIOL 311 Introductory Genetics (Fall 2004)

Topics covered include: Mendelian inheritance, linkage, recombination, gene expression Assisted with management and instruction of labs; marked assignments and exams

Co-op Report Grader

Simon Fraser University Co-op Program (Summer 2011, Fall 2011)

Read, evaluated, and provided feedback on work-term reports submitted by co-op students

Software Experience

Software package development

Author

fpCompare: Reliable comparison of floating point numbers. CRAN; GitHub; Website grainscape: Efficient modelling of landscape connectivity, habitat, and protected area networks. CRAN; GitHub; Website

LandR: Landscape Ecosystem Modelling in R. GitHub; Website

LandWebUtils: Additional utilities for LandWeb analyses. GitHub; Website

map: Defines a meta class of geographical objects, the 'map' class, and associated tools. GitHub; Website

NetLogoR: A Port of 'NetLogo' Functions and Language to R. CRAN; GitHub; Website

pemisc: Miscellaneous utilities developed by the Predictive Ecology Lab Group. GitHub; Website

quickPlot: Develop and run spatially explicit discrete event simulation models. CRAN; GitHub; Website

reproducible: Develop and run spatially explicit discrete event simulation models. CRAN; GitHub; Website

SpaDES: Develop and run spatially explicit discrete event simulation models. CRAN; GitHub; Website

SpaDES.addins: Tools and RStudio addins for 'SpaDES' and 'SpaDES' module development. CRAN; GitHub; Website

SpaDES.core: Core functionality for Spatial Discrete Event Simulation (SpaDES). CRAN; GitHub; Website

SpaDES.experiment: Simulation experiments within the SpaDES ecosystem. GitHub; Website SpaDES.shiny: Utilities for building shiny-based apps for SpaDES simulations. GitHub; Website

SpaDES.tools: Additional modelling tools for Spatial Discrete Event Simulation (SpaDES) module development. CRAN; GitHub; Website

Contributor

miniCRAN: Create a mini version of CRAN containing only selected packages. https://github. com/RevolutionAnalytics/miniCRAN

Other software experience

Operating Systems: Windows, macOS, Ubuntu Linux Office productivity software: Microsoft Office (Word, Excel and PowerPoint), Open Office, LaTeX Online Course Management Software: Blackboard, WebCT Programming languages: C/C++, R High Performance Computing: Compute Canada, HTCondor Version control systems: git, GitHub Web development: CSS, HTML, Open Journal Systems, shiny

Publications

Raymundo, Ana, T. Micheletti, S. Haché, D. Stralberg, F.E.C. Stewart, J.A. Tremblay, C. Barros, I.M.S. Eddy, **A.M. Chubaty**, M. Leblond, C.L. Mahon, S.L. Van Wilgenburg, E.M. Bayne, F. Schmiegelow, T.D.S. Docherty, E.J.B. McIntire, S.G. Cumming (2024) Climate-sensitive forecasts of marked short-term and long-term changes in the distributions or abundances of Northwestern boreal landbirds. Climate Change Ecology. 10.1016/j.ecochg.2023.100079.

Stewart, F.E.C., T. Micheletti, S.G. Cumming, C. Barros, **A.M. Chubaty**, A.L. Dookie, I. Duclos, I. Eddy, S. Haché, J. Hodson, J. Hughes, C.A. Johnson, M. Leblond, F.K.A. Schmiegelow, J.A. Tremblay, E.J.B. McIntire (2023) Climate-informed forecasts reveal dramatic local habitat shifts and population uncertainty for northern boreal caribou. Ecological Applications. 10.1002/eap.2816

Micheletti, T., S. Haché, D. Stralberg, F.E.C. Stewart, **A.M. Chubaty**, C. Barros, E.M. Bayne, S.G. Cumming, T.D.S. Docherty, A. Dookie, I. Duclos, I.M.S. Eddy, Z. Gadallah, C.A. Haas, J. Hodson, M. Leblond, C.L. Mahon, F. Schmiegelow, J.A. Tremblay, S.L. Van Wilgenburg, A.R. Westwood, E.J.B. McIntire (2023) Will this umbrella leak? A caribou umbrella index for boreal bird conservation. Conservation Science and Practice. 10.1111/csp2.12908.

Barros, C., Y. Luo, **A.M. Chubaty**, I.M.S. Eddy, T. Micheletti, C. Boisvenue, D.W. Andison, S.G. Cumming, and E.J.B. McIntire (2023) Empowering ecological modellers with a PERFICT workflow: Seamlessly linking data, parameterisation, prediction, validation and visualisation. Methods in Ecology and Evolution. 10.1111/2041-210X.14034.

Boisvenue, C., G. Paradis, I.M.S. Eddy, E.J.B. McIntire, **A.M. Chubaty** (2022) Managing forest carbon and landscape capacities. Environmental Research Letters. 10.1088/1748-9326/ac9919.

McIntire, E.J.B., **A.M. Chubaty**, S.G. Cumming, D. Andison, C. Barros, C. Boisvenue, S. Haché, Y. Luo, T. Micheletti, F.E.C. Stewart (2022). Predictive Ecology: a re-imagined foundation and the tools for ecological models. Ecology Letters. 10.1111/ele.13994.

Micheletti, T., F.E.C. Stewart, S.G. Cumming, S. Haché, D. Stralberg, J.A. Tremblay, C. Barros, I.M.S. Eddy, **A.M. Chubaty**, M. Leblond, R.F. Pankratz, C.L. Mahon, S.L. Van Wilgenburg, E.M. Bayne, F. Schmiegelow, E.J.B. McIntire (2021) Assessing Pathways of Climate Change Effects in SpaDES: An Application to Boreal Landbirds of Northwest Territories Canada. 10.3389/fev0.2021.679673.

Chubaty, A.M., P. Galpern, and S. Doctolero. 2020. The R toolbox grainscape for modelling and visualizing landcape networks connectivity using spatially-explicit networks. Methods in Ecology and Evolution. 10.1111/2041-210X.13350.

Bauduin, S., E.J.B. McIntire, **A.M. Chubaty** (2019) NetLogoR: A package to build and run spatially explicit agent-based models in R. Ecography. 10.1111/ecog.04516.

Zappia, S.P., **A.M. Chubaty**, B.D. Roitberg (2018) State-dependent domicile leaving rates in Anopheles gambiae. Malaria Journal. 10.1186/s12936-017-2166-4.

Chubaty, A.M., M. Hart, B.D. Roitberg (2014) To tree or not to tree: The role of energy limitation on host tree acceptance in a bark beetle. Evolutionary Ecology Research 16(4):337-349.

Chubaty, A.M.*, B.O. Ma*, R.W. Stein, D.R. Gillespie, L.M. Henry, C. Phelan, E. Palsson, F.W. Simon, B.D. Roitberg (2014) On the evolution of omnivory in a community context. Ecology and Evolution 4:251-265. 10.1002/ece3.923

Major, H.L. and **A.M. Chubaty** (2012) Estimating colony and breeding population size for nocturnal burrow-nesting seabirds. Marine Ecology Progress Series 454:83-90. 10.3354/meps09663

Jumean, Z., B.O. Ma, **A.M. Chubaty**, C.W. Ellenor, B.D. Roitberg, and G. Gries (2011) A theoretical approach to study the evolution of aggregation behavior by codling moth larvae. The Journal of Insect Behaviour 24(4):249-263. 10.1007/S10905-010-9251-7

Chubaty, A.M., B.D. Roitberg, C. Li (2009) A dynamic host selection model for mountain pine beetle, *Dendroctonus ponderosae* Hopkins. Ecological Modelling 220:1241-1250. 10.1016/j.ecolmodel.2009.01.039.

Presentations

Chubaty, A. M., and E. J. B. McIntire. A brief introduction to SpaDES. May 8, 2020.

Barros, C., A. M. Chubaty, S. G. Cumming, T. Micheletti, I. Eddy, C. Boisvenue, F. E. C. Stewart, and E. J. B. McIntire. Making Predictive Ecology PERFICT. Belfast, Northern Ireland. Dec 11, 2019.

Chubaty, A. M., T. Micheletti, F. Stewart, E. J. B. McIntire, Y. Luo, D. W. Andison, S. Hache, I. Eddy, C. Barros, D. Stralberg, J. Marchal, A. P. Raymundo, M. van Telgen, J. Tremblay, M. Leblond, R. Pankratz, J. Hodson, and S. Cumming. Cumulative effects research in SpaDES. Sault Ste Marie, ON. Oct 25, 2019.

Micheletti, T., E.J.B. McIntire, F. Stewart, S. Hache, I. Eddy, C. Barros, **A.M. Chubaty**, D. Stralberg, J. Marchal, A.P. Raymundo, M. van Telgen, J. Tremblay, M. Leblond, R. Pankratz, J. Hodson, S.G. Cumming. Data to decisions: a multispecies approach case study for Northwest Territories. Society of Canadian Ornithologists Meeting, Aug 30, 2019.

Stewart, F., T. Micheletti, E.J.B. McIntire, S. Hache, M. Leblond, J. Tremblay, J. Marchal, M. van Telgen, J. Hodson, F. Schmiegelow, I. Eddy, **A.M. Chubaty**, C. Barros, S.G. Cumming. Predicting caribou resource selection and demography under landscape and climate change. Canadian Society for Ecology and Evolution Meeting, Aug 20, 2019.

Chubaty, A.M. Best Practices Working With Spatial Data in R. fRI Research, May 2, 2019 **Chubaty, A.M.**, E.J.B. McIntire, B.J. Cooke. Facing the tree-slayer: forecasting Mountain Pine Beetle spatial spread in SpaDES. fRI Research Mountain Pine Beetle Ecology Program Research Flash, Feb 22, 2019.

Chubaty, A.M., E.J.B. McIntire, B.J. Cooke. Integrating fire disturbance with models of mountain pine beetle spread to evaluate efficacy of controlled burns as a management tool. SERG International Workshop, 5-7 Feb 2019.

Chubaty, A.M. Testimony before the House of Commons Standing Committee on Natural Resources Forest Pests. Oct 4, 2018.

Chubaty, A.M., E.J.B. McIntire. Cumulative Impacts Monitoring Program (CIMP) SpaDES Workshop. Cumulative Impacts Monitoring Program, Oct 3-4, 2018.

Chubaty, A.M., E.J.B. McIntire, D.W. Andison. LandWeb: Exploring NRV in the Western Canadian Boreal Forest. fRI Research, July 27, 2018.

Chubaty, A.M. Building R packages - Getting started and best practices. University of Calgary Biological Sciences R Users Group, May 11, 2018.

Chubaty, A.M., B.J. Cooke, E.J.B. McIntire. Simulating MPB invasive spread control in Saskatchewan using SpaDES. SERG International Workshop, 6-8 Feb 2018.

McIntire, E.J.B., S. Bauduin, J. Marchal, A. Clason, **A.M. Chubaty**, S.G. Cumming. Predictive ecology in a world filled with dynamic data and models – entering continuous adaptive management. University of Victoria Environmental Studies Seminar Series, Jan 2018.

McIntire, E.J.B., S. Bauduin, J. Marchal, A. Clason, **A.M. Chubaty**, S.G. Cumming. Incorporating changing climate in ecological models: feedbacks, trade-offs and surprises! *OR* How do we influence decision makers?. Canadian Institute of Forestry, Web Seminar, Nov 2017.

Chubaty, A.M., E.J.B. McIntire, B.J. Cooke. Boreal insect disturbance in SpaDES: integrated simulation model of mountain pine beetle eastward spread. Joint Annual Meeting of the Entomological Societies of Canada and Manitoba, 22-25 Oct 2017.

Chubaty A.M. and E.J.B. McIntire. Cumulative effects simulation and modern scientific forecasts: challenges and opportunities. Great Lakes Forestry Centre Seminar Series, NRCAN, 20 Oct 2017.

McIntire, E.J.B., S. Bauduin, J. Marchal, A. Clason, **A.M. Chubaty**, S.G. Cumming. Incorporating changing climate in ecological models: feedback, reversals and surprises abound! Global climate change and patagonian ecosystem response: present and future challenges, Coyhaique, Chile, 2017.

McIntire, E.J.B., E.M. Campbell, R.S. Winder, **A.M. Chubaty**, M.A. Wulder, *et al.* Building a continuous adaptive management system in SpaDES: dialing down the risk for woodland caribou. Ontario, 2017.

Chubaty, A.M., E.J.B. McIntire, B.J. Cooke, S.G. Cumming, Y. Luo. Boreal insect disturbance in SpaDES: integrated simulation model of mountain pine beetle eastward spread (poster). Canadian Society for Ecology and Evolution, 7-10 May 2017.

Cumming, S.G., E.J.B. McIntire, Y. Luo, **A.M. Chubaty**, D. Woolford. Burning in SpaDES: Automated parameter estimation for landscape fire models. Canadian Society for Ecology and Evolution, 7-10 May 2017.

Luo, Y., E.J.B. McIntire, **A.M. Chubaty**, D. Andison, S.G. Cumming. Vegetation dynamics in SpaDES: the recoded LANDIS-II biomass succession model. Canadian Society for Ecology and Evolution, 7-10 May 2017.

McIntire, E.J.B., D. Andison, S.G. Cumming, Y. Luo, **A.M. Chubaty**. Building a continuous adaptive management system in SpaDES: using historical landscape variation for the LandWeb project. Canadian Society for Ecology and Evolution, 7-10 May 2017.

Chubaty, A.M., E.J.B. McIntire, B.J. Cooke. Simulating MPB invasive spread control using SpaDES. fRI Mountain Pine Beetle Ecology Research Forum, 25-26 Apr 2017.

Chubaty, A.M., E.J.B. McIntire, B.J. Cooke. Simulating MPB invasive spread control in Saskatchewan using SpaDES. SERG International Workshop, 6-9 Feb 2017.

McIntire, E.J.B., **A.M. Chubaty**, D. Andison. Getting to answers, in SpaDES. FaCOP Webinar Series, Sault Ste. Marie, ON, 2016.

McIntire, E.J.B. and A.M. Chubaty. The 'SpaDES platform: Modern scientific forecasts, backcasts, and decisions. Northern Forestry Centre, NRCAN, 22 July 2015.

Riel, W., **A.M. Chubaty**. Evolution of Decision Support for Forest Ecosystem Management: Towards Open Modelling and Data. Annual General Meeting of the Entomological Society of British Columbia (Symposium), 17 Oct 2015.

Chubaty, A.M. and E.J.B. McIntire. SpaDES: Spatial Discrete Event Simulation. Northern Forestry Centre, NRCAN. 25 Nov 2014.

Hodson, C., S. Dhanani, A. Hoi, **A.M. Chubaty**, F. Simon. *Drosophila suzukii* in a *D. suzukii* world: Humidity decreases density dependent competition. Annual General Meeting of the Entomological Society of British Columbia, 1-2 Nov 2013

Chubaty, A.M., B.O. Ma, R.W. Stein, D.R. Gillespie, L.M. Henry, C. Phelan, E. Palsson, F.W. Simon, B.D. Roitberg. On the evolution of omnivory in a community context. 98th Annual Meeting of the Ecological Society of America, 4-9 Aug 2013.

Mladenovic, I., **A.M. Chubaty**, and A. Tirajoh. Enhancing Students' Understanding of Biological Concepts by Engaging Them in Research (poster). Symposium on Teaching and Learning: Embracing Change @ SFU, 15 May 2013.

Chubaty, A.M., B.O. Ma, R.W. Stein, D.R. Gillespie, L.M. Henry, C. Phelan, E. Palsson, F.W. Simon, B.D. Roitberg. On the evolution of omnivory in a community context. Canadian Society for Ecology and Evolution, 12-15 May 2013.

Chubaty, A.M., B.O. Ma, R.W. Stein, D.R. Gillespie, L.M. Henry, C. Phelan, E. Palsson, F.W. Simon, B.D. Roitberg. Evolution of omnivory in a community context. RPM Research Group, SFU, 11 Apr 2013.

Chubaty, A.M. To tree or not to tree: Energy and time limited habitat settlement decisions in bark beetles. Les Écologistes Seminar Series, SFU, Nov 2012.

Chubaty, A.M. and B.D. Roitberg. Can selfish genes help prevent pest outbreaks? 1st Joint Congress on Evolutionary Biology, 6-10 July 2012.

Roitberg, B.D. and **A.M. Chubaty**. State dependent problems for arthropods. Pacific Institute for the Mathematical Sciences / Centre for Scientific Computing Seminar Series, SFU, 19 Nov 2010.

Chubaty, A.M. Energy reserves modulate host acceptance decisions in mountain pine beetles. Joint Annual Meeting of the Entomological Societies of Canada and British Columbia, 31 Oct – 3 Nov 2010.

Chubaty, A.M. and M. Hart. Mountain pine beetle condition and timing of emergence: who emerges when. Annual General Meeting of the Entomological Society of British Columbia, 2-3 Oct 2009. (*Best PhD Student Talk*)

Chubaty, A.M. and M. Hart. Mountain pine beetle condition and timing of emergence: who emerges when. Canadian Society for Ecology and Evolution, 11-14 May 2008.

Chubaty, A.M., B.D. Roitberg, C. Li. An individual model of host selection for mountain pine beetle. Canadian Society for Ecology and Evolution, 17-20 May 2007.

Chubaty, A.M., *et al.*. "I'll have the steak special, with a side salad": exploring the evolution of omnivory. Les Écologistes Seminar Series, SFU, 15 Mar 2007.

Chubaty, A.M., B.D. Roitberg, C. Li. Beetles pine for lodgepole homes: mountain pine beetle's

search for a host. Annual General Meeting of the Entomological Society of British Columbia, 13-14 Oct 2006.

Chubaty, A.M., B.D. Roitberg, C. Li, B.O. Ma. Using game theory to evaluate host acceptance decisions in mountain pine beetle. 27th Annual Pacific Ecology and Evolution Conference, 3-5 Mar 2006.

Awards, Scholarships & Grants

Simon Fraser University Dean Graduate Studies Committee Travel Award (\$500) Summer 2013 Graduate Student Scholarship, Entomological Society of BC (\$400) Oct 2012 Simon Fraser University Dean Graduate Studies Committee Travel Award (\$500) Summer 2012 Simon Fraser University President's Research Stipend (\$6250) Spring 2011 Best PhD Student Presentation, Entomological Society of BC AGM (\$300) Oct 2009 Simon Fraser University Graduate Fellowship (\$6250) Fall 2007, 2009 Simon Fraser University Dean Graduate Studies Committee Travel Award (\$500) Summer 2007 Jason Lang Scholarship (\$1000) Jan 2005 University of Calgary Undergraduate Academic Scholarship (\$500) Jan 2003 H&R Block Scholarship (USD \$550) Fall 2002, Winter 2003 Jason Lang Scholarship (\$1000) Dec 2002 University of Calgary Undergraduate Merit Award (\$700) Nov 2002 John and Elsie Wawruch Memorial Scholarship (\$500) Jan 2002 H&R Block Scholarship (USD \$350) Fall 2001, Winter 2002 Alexander Rutherford Scholarship (\$2500) Oct 2001 University of Calgary Scholar's Advantage Award (\$500) Sept 2001

Membership

Canadian Society for Ecology and Evolution (2006-present) Ecological Society of America (2013-2014) Entomological Society of British Columbia (2005-2015) Entomological Society of Canada (2010-2014; 2016-present) Professional Pest Management Association of British Columbia (2007-2010)

Service Activity

Reviewer, PeerJ (2017)

External Reviewer, NSERC discovery grants (2016)

Website Editor, Entomological Society of British Columbia (2011-2015)

Oversaw digitization of the society's entire journal archive dating back to 1906, and directed efforts to move the journal archive online and made freely available as an open-access publication.

A/V Volunteer, 98th Annual Meeting of the Ecological Society of America (4-9 Aug 2013)

Organizer, Joint Annual Meeting of the Entomological Societies of Canada and British Columbia (2010)

Volunteer, Let's Talk Science (2008-2013)

Organizer, SFU New Biology Grad Student Mentorship Program (2007-2010)

Webmaster, SFU Biology Grad Student Caucus (2007–2012)

Editor, Newsletter of the Professional Pest Management Association of British Columbia (2007-2010)

Webmaster, Professional Pest Management Association of British Columbia (2007-2010)

Judge, Calgary Youth Science Fair (2003, 2004)

Student Leader, "U of C 101" University of Calgary (2003, 2004)

References

Available upon request.