

# CV OF EMILY SOHANNA ACHESON

Country of Citizenship: Canada | Personal website: [www.emilyacheson.com](http://www.emilyacheson.com)

## EMPLOYMENT

- Public Health Agency of Canada, National Microbiology Laboratory  
Public Health Risk Sciences division, St. Hyacinthe, Québec  
Spatial epidemiologist  
Sept. 2022 – present
- Université de Montréal, St. Hyacinthe, Québec, Canada  
Postdoctoral researcher  
Supervisor: Dr. Patrick Leighton  
Sept. 2020 – Aug. 2022

## EDUCATION

- University of British Columbia, Vancouver, British Columbia, Canada  
PhD, Geography  
Supervisor: Dr. Brian Klinkenberg  
PhD thesis: Exploring the ecological factors behind the 1999 outbreak of *Cryptococcus gattii* sensu lato on Vancouver Island  
Sept. 2015 – Oct. 2020
- University of Ottawa, Ottawa, Ontario, Canada  
Master's of Science, Biology  
Supervisor: Dr. Jeremy Kerr  
Master's thesis: Predicting disease vector distributions through space and time using environmental and vector control data  
Sept. 2013 – Aug. 2015
- University of Toronto, Mississauga campus, Ontario, Canada  
Honours Bachelor of Science,  
Specialist in Biology  
Major in Environmental Science  
Minor in Professional Writing and Communication  
Honours Thesis (supervisor: Dr. Darryl Gwynne): "Sex, nuptial gifts, and the Immune system function in the cricket *Gryllodes sigillatus* (Orthoptera: Gryllidae)"  
Sept. 2008 – Apr. 2012

## PUBLICATIONS

### *Research publications*

Acheson E.S.\*, Viard F., Buchanan T., Nituch L., Leighton P. Comparing control intervention scenarios for raccoon rabies in southern Ontario between 2015 and 2025. In press. *Viruses*.

Acheson E.S.\*, Otterstatter M., Galanis E. Forest disturbance and disease: Exploring the effects of tree harvesting area on *Cryptococcus gattii* sensu lato infection risk, Vancouver Island, Canada, 1998-2014. In revision.

Tardy O., Acheson E.S.\*, Bouchard C., Chamberland E., Fortin A., Ogden N., Leighton P.A. Using mechanistic movement models to predict geographic range expansions of ticks and tick-borne pathogens: Case studies with the ticks *Ixodes scapularis* and *Amblyomma americanum* in eastern North America. In revision.

Viard F., Acheson E.S.\*, Allibert A., Sauvé C.C., Leighton P.A. SamPy: A new Python library for stochastic spatial agent-based modelling in the epidemiology of infectious diseases. In revision.

Carvajal J., Alaniz A., Carvajal M., Cruz R., Acheson E.S.\*, Vergara P., Nunez-Hidalgo I., Cogliati M. (2020). Expansion of the emerging fungal pathogen *Cryptococcus bacillisporus* into America: Linking phylogenetic origin, geographical spread and population under exposure risk. *Frontiers in Microbiology*. 1-22.

Rossa-Roccor V., Acheson E.S.\*, Andrade F., Coombe M., Ogura S., Super L., and Hong A. (2020). Scoping review and bibliometric analysis of the term 'Planetary Health' in the peer-reviewed literature. *Frontiers in Public Health*. 8: 343.

Acheson E.S.\*, Galanis E., Bartlett K., Klinkenberg B. (2019). Climate classification system-based determination of temperate climate detection of *Cryptococcus gattii* sensu lato. *Emerging Infectious Diseases*. 25(9): 1723-1726.

Acheson E.S.\*, Kerr J. (2018). Nets versus spraying: Spatial modelling reveals indoor residual spraying targets Anopheles mosquito habitats better than mosquito nets in Tanzania. *PLOS ONE*. 13(10): e0205270.

Acheson E.S.\*, Galanis E., Bartlett K., Mak S., and Klinkenberg B. (2017). Searching for clues for seventeen years: Deciphering the ecological determinants of *Cryptococcus gattii* on Vancouver Island, British Columbia. *Medical Mycology*. 56(2): 129-144.

Acheson E.S.\*, Plowright A., and Kerr J. (2015). Where have all the mosquito nets gone? Spatial modelling reveals mosquito net distributions across Tanzania do not target optimal Anopheles mosquito habitats. *Malaria Journal*. 14: 322. Highly accessed article.

Acheson E.S.\* and Kerr J. (2015). Looking forward by looking back: Using historical calibration to improve forecasts of human disease vector distributions. *Vector Borne and Zoonotic Diseases*. 15(3): 173-183.

Sander-Regier R., Acheson E.S.\*, Rai N., and Chen J. (2015). The University of Ottawa's Husky Energy Courtyard: Looking back, looking forward after 10 years. *Urban Forestry and Urban Greening*. 14(4): 1131-1136.

### ***Theses/Dissertations***

Exploring the ecological factors behind the 1999 outbreak of *Cryptococcus gattii* sensu lato on Vancouver Island. (2020). University of British Columbia. PhD thesis. pp. 1-170.

Predicting disease vector distributions through space and time using environmental and vector control data. (2015). University of Ottawa. Master's thesis. pp. 1-88. Supervisor: Dr. Jeremy Kerr.

### ***Book chapters (fiction)***

Acheson E.S. (2013). A Royal Charter for John Strachan. In: T. Moniz, & University of Toronto Writing History Collective (Eds.), *Writing History: A Collection by New Writers*. Volume 3. (pp. 9-12). Toronto: Life Rattle Press.

Acheson E.S. (2013). So Long to the Christian Way. In: T. Moniz, & University of Toronto Writing History Collective (Eds.), *Writing History: A Collection by New Writers*. Volume 3. (pp. 13-17). Toronto: Life Rattle Press.

Acheson E.S. (2013). Ghosts, Gargoyles, and Some Really Strange Stuff. In: T. Moniz, & University of Toronto Writing History Collective (Eds.), *Writing History: A Collection by New Writers*. Volume 3. (pp. 18-26). Toronto: Life Rattle Press.

Acheson E.S. (2011). Along the Seine. In B. Mills (Ed.), *Mindwaves: The Professional Writing and Communication Journal*. (pp. 13-17). Toronto: Mindwaves.

Acheson E.S. (2011). Albert Koehl. In J. Currie (Ed.), *Environment and Ecology: Stories*. (pp. 15-21). Toronto: Life Rattle Press.

Acheson E.S. (2011). Stuck at the Drive Thru. In J. Currie (Ed.), *Environment and Ecology: Stories*. (pp. 41–46). Toronto: Life Rattle Press.

Acheson E.S. (2008). Diary of the World. *Authors of Tomorrow*. (p. 15). Langley: Elder and Leemaur Publishers. Essay published by Authors of Tomorrow scholarship competition (selected within top 3% of applicants in Canada for publication).

### ***Newspaper articles***

Twenty-nine articles for *The Medium*, the campus newspaper for the University of Toronto at Mississauga, between 2008 and 2012. Articles can be found online at <https://themedium.ca/> or in print.

### ***Magazine entries***

Acheson E.S. (2015). The secret Biosciences courtyard. *Catalyst*. 5(3): 15-15. Ottawa, Canada. Editors: Huus K. Only available in print.

Acheson E.S. (2015). Replacing online dating with graduate research at the University of Ottawa. *Catalyst*. 5(4): 14-16. Ottawa, Canada. Editors: Huus K. Only available in print.

Acheson E.S. (2014). The graduate school money tree. *Catalyst*. 5(2): 14-15. Ottawa, Canada. Editors: Huus K. Only available in print.

Acheson E.S. (2014). 10 Best ways to irritate your TA. *Catalyst*. 5(1): 6-6. Ottawa, Canada. Editors: Huus K. Only available in print.

### ***Conference publications***

Rossa-Roccor V, Acheson E, Andrade-Rivas F, Coombe M, Ogura S, Super L, Hong A. (2019). Mission accomplished? A scoping review and bibliometric analysis of the term "planetary health" in the peer-reviewed literature. *The Lancet Planetary Health*. The 2019 Planetary Health Annual Meeting, Stanford, United States (S17). URL: [http://dx.doi.org/https://doi.org/10.1016/S2542-5196\(19\)30160-3](http://dx.doi.org/https://doi.org/10.1016/S2542-5196(19)30160-3).

## **SCHOLARLY AND PROFESSIONAL ACTIVITIES**

Acheson E. (2022). Mapping rabies in raccoons in southern Ontario. Ecological Society of America / Canadian Society of Ecology and Evolution. Montréal, Québec. Oral presentation.

- Acheson E. (2020). Did deforestation lead to the 1999 outbreak of *Cryptococcus gattii* on Vancouver Island? Cascadia 2020 Symposium. Abbotsford, British Columbia. Oral presentation.
- Rossa-Roccor V, Acheson E, Andrade-Rivas F, et al. (2019). Mission accomplished? A scoping review and bibliometric analysis of the term 'Planetary Health' in the peer-reviewed literature. The 2019 Planetary Health Annual Meeting, Stanford University, California. Poster presentation.
- Acheson E. (2019). Mapping a deadly fungus: Using GIS, remote sensing, and ArcPy to track the 1999 *Cryptococcus gattii* outbreak on Vancouver Island. North American Cartography Information Society, Tacoma, Washington, United States. Poster presentation.
- Acheson E. (2019). Exploring links between deforestation and the 1999 outbreak of *Cryptococcus gattii* on Vancouver Island. Occupational and Environmental Health (OEH) Grand Rounds, Canada. Oral presentation.
- Acheson E. (2019). A space-time analysis of deforestation and the 1999 outbreak of *Cryptococcus gattii* on Vancouver Island. Health Authority GIS (HAGIS) Working Group meeting, Vancouver, Canada. Oral presentation. Invited.
- Acheson E. (2018). Using macroecology to define infectious disease emergence: A case study of *Cryptococcus gattii*. Canadian Society for Ecology and Evolution, Guelph, Canada. Oral presentation.
- Acheson E. (2018). Did deforestation affect the 1999 Vancouver Island outbreak of *Cryptococcus gattii*? Esri Canada User Conference, Vancouver, Canada. Oral presentation.
- Acheson E. (2018). Did deforestation affect the 1999 Vancouver Island outbreak of *Cryptococcus gattii*? 17th Annual B.C. Zoonoses Symposium, Langley, Canada. Oral presentation.
- Acheson E. (2018). Geography and Medicine: Applying GIS to the study of diseases. Guest Lecture for Advanced GIS (GEOB370) class at the University of British Columbia, Canada. Invited.
- Acheson E. (2018). Defining infectious diseases in a new geographical area: A case study of *Cryptococcus gattii*. International Conference on Diseases in Nature Communicable to Man (INCDNCM), Saskatoon, Canada. Oral presentation.
- Acheson E. (2018). Climate change, land use change, or both? University of British Columbia's PhDs Go Public, Vancouver, Canada. Oral presentation. Invited.
- Acheson E. (2018). How do you map diseases? A look into the world of GIScience and medical geography. Visualizing the World Speaker Series, Vancouver, Canada. Oral presentation. Invited.
- Acheson E. (2018). Exploring the factors behind the 1999 *Cryptococcus gattii* outbreak on Vancouver Island. Cascadia 2020 Symposium, Abbotsford, Canada. Oral presentation.
- Acheson E. (2017). Climate change, land cover change, and *Cryptococcus gattii*. Esri Canada User Conference Vancouver, Vancouver, Canada. Oral presentation.
- Acheson E. (2017). UBC Graduate Research in GIS. Guest Lecture for Advanced GIS (GEOB370) class at the University of British Columbia, Vancouver, Canada. Invited.

Acheson E. (2016). UBC Graduate Research in GIS. Guest Lecture for Advanced GIS (GEOB370) class at the University of British Columbia, Vancouver, Canada. Invited.

Acheson E. (2015). ArcGIS and malaria: Evaluating environmental effects on mosquito distributions in Tanzania using GIS and remote sensing. Ottawa Carleton Institute for Biology (OCIB) Symposium, Ottawa, Canada. Oral and poster presentation.

Acheson E. (2014). Climate change or human activities: Determinants of malaria vector distributions in East Africa. Canadian Society for Ecology and Evolution (CSEE) National Conference "Genomes to Biomes", Montreal, Canada. Oral presentation.

Acheson E. (2014). Climate change or human activities: What is the principal determinant of malaria vector distributions in East Africa through time? Ottawa Carleton Institute for Biology (OCIB) Symposium, Ottawa, Canada. Poster presentation.

## AWARDS, SCHOLARSHIPS, AND GRANTS

Best 20-minute oral presentation at the Cascadia 2020 Symposium	2020
Best oral presentation (one of two) at the International Conference on Diseases in Nature Communicable to Man	2018
Public Scholars Initiative Award	2017
ESRI Young Scholar Award	2017
Vanier Canada Graduate Scholarship	2016
NSERC Canada Graduate Scholarship Doctoral Award (rejected to take the Vanier)	2016
2016 Graduate Student Research Award (research grant)	2016
University of British Columbia Four-Year Fellowship for PhD Studies, Geography Department	2015-2019
Simons Foundation Doctoral Scholarship	2015
University of Ottawa Dean's Scholarship	2015
Monseigneur Joseph Aurèle Plourde Scholarship	2015
<i>Catalyst</i> Winter Writing Contest, Grand Prize	2015
ESRI Canada GIS Scholarship	2015
BMO Queen Elizabeth II Graduate Scholarship in Science and Technology	2014
Award for Significant Contribution to Science Outreach (Let's Talk Science)	2014
University of Ottawa Excellence Scholarship (x2)	2013, 2014
NSERC Canada Graduate Scholarship Master's Award	2013
Graduation Award, Top GPA in Geography and Environmental Science Department	2012
Heidi Thiessen Memorial Award, Third Place	2012
University of Toronto In-Course Scholarship (x2)	2010, 2011
Credit Valley Conservation Award	2010
Jean M. Niskanen Scholarship	2010
Verna Flowers (A.P.P.E.A.L.) Memorial Scholarship	2010
Queen Elizabeth II Aiming for the Top Scholarship (x4)	2008 – 2011
Khaki University and Y.M.C.A. Memorial Scholarship (x2)	2008, 2010
Padgett Scholarship	2008
Publication selected for "Authors of Tomorrow" international essay competition	2008

University of Toronto at Mississauga Entrance Award (95%+)	2008
University of Toronto Top Scholars Scholarship	2008

## EMPLOYMENT HISTORY

<p><i>Course instructor</i></p> <p>I taught one of the two sessions offered to international undergraduate students for "Spatial Analysis Using Geographic Information Systems." This was a one-month course offered at the University of British Columbia through the Vancouver Summer Program. I was in charge of teaching, supervising labs, and marking for my class section. Appointment was part-time.</p>	July 2019 – Aug. 2019
<p><i>Teaching assistant at the University of British Columbia</i></p> <p>Acted as teaching assistant for undergraduate geography labs (GEOB370) at the University of British Columbia. Job includes giving prelab talks, demonstrating Analysis methods, holding office hours, marking lab reports, and proctoring final exams.</p>	Jan. 2016 – April 2016
<p><i>Teaching Assistant at the University of Ottawa</i></p> <p>Acted as demonstrator for undergraduate biology labs (BIO1130, BIO1140, BIO2129) at the University of Ottawa. Jobs include giving prelab talks, demonstrating data collecting procedures, holding office hours, marking lab reports, and proctoring final exams.</p>	Sept. 2013 – April 2015
<p><i>Tutor at Scholars Education Centre</i></p> <p>Tutored students from kindergarten through Grade 12 in various subjects, including English, French, Math, Writing, Geography, and Biology.</p>	Dec. 2012 – June 2013
<p><i>Home tutor for Grade 10 student</i></p> <p>Tutored a Grade 10 student in Physics, English, Math, and Biology.</p>	Nov. 2012 – June 2013
<p><i>Receptionist and filer at Winston Park Family Physicians</i></p> <p>Admitted patients, pull and return patient charts, put patients in rooms, assist doctors with physicals and other consultations, prepare patient charts for following day.</p>	Sept. 2007 – June 2013
<p><i>Staff member at ErinoakKids Oakville Summer Camp</i></p> <p>Worked daily with one to two children with disabilities. Job included bathing, feeding, dressing, and playing with children; changing diapers; assisting with children having seizures.</p>	Jul. 2008 – Aug. 2008
<p><i>Kennel Staff Member -- Glen Erin Animal Hospital</i></p> <p>Cleaned animal cages, walked dogs, fed animals, bathed dogs, assisted veterinarians with animals during treatments, assisted in euthanasia procedures,</p>	Sept. 2006 – Aug. 2007

performed janitorial duties.

## EXTRACURRICULAR ACTIVITIES

- eMentor for Society for Canadian Women in Science and Technology (SCWIST)* Oct. 2019 – Nov. 2019  
For seven weeks, one hour per week, I work with a female high school student to guide her on going into a career in science. Communication is done over email.
- Let's Talk Science Pod Leader* Nov. 2017 – Aug. 2018  
Leader of four UBC undergraduate students, coordinating and participating in classroom visits for Grade 5/6 classroom to demonstrate science activities.
- Contributor to Ottawa University Science Magazine, Catalyst* Sept. 2014 – Apr. 2015  
Writing newspaper articles between 500 – 1000 words each, for bi-monthly Science magazine.
- Husky Courtyard Rejuvenation Project* Apr. 2014 – June 2015  
Heading a project to improve a courtyard within the bioscience complex for students to enjoy at the University of Ottawa.
- Let's Talk Science Volunteer at University of Ottawa* Sept. 2013 – June 2015  
Volunteering for Carleton Butterfly Show, teach elementary and high school students about science. Created my own class activity for Grades 8-10 students. Created a LTS game called "Vectorville," designed for Grades 7-9 to teach students about disease vectors, medicine, and ecology, which is now being used in different schools across Canada.
- Note taker for Partnership Group for Science and Engineering (PAGSE) meetings* Sept. 2013 – Aug. 2014  
Volunteered to take notes for monthly PAGSE meetings at the University of Ottawa.
- Volunteer on Frontiers Volunteer Abroad conservation project in New Zealand Oct. 2012  
Volunteered on four-week environmental conservation trip in Auckland, New Zealand.
- Assistant / Associate Editor – UTM's campus newspaper, The Medium* Sept. 2009 – Apr. 2012  
Assistant Editor (2009 – 2010), Associate Editor (2010 – 2012)  
Wrote newspaper articles between 500 – 1000 words each. Initiated and ran the "Science Corner" in the Features section for science-related articles (2010-2011).
- Founder and President – Student Organization of Health-Interest Programs (S.O.H.I.P.)* Sept. 2009 – Apr. 2011  
Founded, organized, and ran a club concerning human and environmental health.

## TEXT INTERVIEWS

Medical geography and why we need it with a focus on my PhD research. Sept. 2019  
 Author: Mary Halton, University of British Columbia Department of Geography  
 website. URL: <https://www.geog.ubc.ca/medical-geography-and-why-we-need-it/>

Malaria research from U of O Master's student nets spot in prestigious journal. Nov. 2015  
 Author: Eric Davidson, The Fulcrum, University of Ottawa.  
 URL: <https://thefulcrum.ca/news/malaria-research-from-u-of-o-masters-student-nets-spot-in-prestigious-journal/>

### INTERNATIONAL COLLABORATION ACTIVITIES

Assistant for Workshop on Advanced GIS mapping in Kilimanjaro Christian Oct. 2013  
 Medical Centre (KCMC) in Moshi, United Republic of Tanzania  
 Assisted in teaching a five-day workshop to graduate students to map mosquito  
 distributions using ArcGIS and Maxent computer software. Workshop was held  
 at in collaboration with the University of Ottawa and Healthbridge Foundation of  
 Canada. Position was volunteer-based.

### ORGANIZATIONAL REVIEW ACTIVITIES

*Graduate student representative for the UBC Leadership Table for Research Oct. 2018*  
*Excellence*  
 Graduate representative for the leadership table for the research excellence  
 portion of UBC's Next Century Strategic Plan held by Gail Murphy. I helped  
 advise on the strategies for focus for the upcoming fiscal year.

*Graduate student representative on Geography hiring committee Nov. 2017*  
 Grad representative for GIScience hiring committee, Geography Department,  
 University of British Columbia. Attended hiring committee meetings, collected  
 feedback from graduate students, and participated in committee voting process.

### RESEARCH FUNDING APPLICATION ASSESSMENT ACTIVITIES

*External Reviewer, Program for Undergraduate Research Experience (PURE) March 2019*  
 Reviewed applications for funding for undergraduate projects at the University  
 of British Columbia.

### LANGUAGES

English – native language  
 French – bilingual diploma, working proficiency