Curriculum Vitae

AMY B. MUI, PhD

Dalhousie University
Environmental Science
Halifax, Nova Scotia, Canada

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CURRENT POSITION

2017-present Instructor & Academic Advisor
Environmental Science Program
Department of Earth and Environmental Sciences | Dalhousie University

EDUCATION

2010-2015 **PhD,** Geography, University of Toronto
Dissertation: Multi-temporal habitat and connectivity modeling of threatened Blanding's turtle (*Emydoidea blandingii*) in disturbed landscapes of southern Ontario using multi-spectral remote sensing imagery
**On Maternity Leave from Jan 2013 to Dec 2013*

2002-2003 **MSc,** Biological Sciences, University of Sydney, Australia
Thesis: Dispersal patterns and mortality in juvenile common wombats (*Vombatus ursinus*) in New South Wales, Australia.

1998-2001 **BSc,** Integrative Biology, University of Guelph
Undergraduate Thesis: Effects of extreme incubation temperatures on neonate turtles

CONTRIBUTIONS TO RESEARCH

Peer-Reviewed Publications *(click on hyperlink to view article online)*

2020 Amani, M., Brisco, B., Mahdavi, S., Ghorbanian, A., Moghimi, A., DeLancey, E.R., Merchang, M., Jahncke, R., Fedorchuk, L., **Mui, A.**, Fisette, T., Kakooei, M., Ahmadi, S.A., Leblong, B., LaRocque, A. (2020). Evaluation of the Landsat-based Canadian Wetland Inventory Map using Multiple Sources: Challenges of Large-scale Wetland Classification using Remote Sensing. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing.

2019 Carstairs, S., Paterson, J. E., *Jager, K. L., Gasbarrini, D., Mui, A. B., & Davy, C. M. (2019). Population reinforcement accelerates subadult recruitment rates in an endangered freshwater turtle. Animal Conservation. **Indicates a student I supervised*

2018 **Mui, A.B**. (2018). Wetland Detection Using High Spatial Resolution Optical Remote Sensing Imagery. In Y.He & Q.Weng (Eds.), *High Spatial Resolution Remote Sensing: Data, Analysis, and Applications* (pp.283-301). Boca Raton, FL: CRC Press Taylor & Francis Group.

2016 **Mui, A**., Edge, Caverhill, B., Johnson, B., Fortin, M.J., and He, Y. Using multiple metrics to estimate seasonal landscape connectivity for Blanding's turtles (*Emydoidea blandingii*) in a fragmented landscape. Landscape Ecology, 1-16. (2015/2016 Impact Factor: 3.657).

2016 Murfitt, J., He, Y., Yang, J., **Mui, A.**, and Demille, K. Ash Decline Assessment in Emerald Ash Borer Infested Natural Forests Using High Spatial Resolution Images. Remote Sensing, 8(3), 256. (2015 Impact Factor: 3.180)

2015 **Mui, A**., Edge, C.B., Paterson, J., Caverhill, B., Johnson, B., Litzgus, J.D., and He, Y. Nesting sites in agricultural landscapes may reduce the reproductive success for Blanding's turtle (*Emydoidea blandingii*) populations. Canadian Journal of Zoology, 94:61-67. (2015 Impact Factor: 1.303)

2015 **Mui, A**., Nelson, S., He, Y., and Wilson, K. Development of an effective web-based platform for geospatial lab practicums: a gateway to enhanced learning. Journal of Geography in Higher Education, 39(3), 356-368. (2015 Impact Factor: 1.034)

2015 **Mui, A**., He, Y and Weng, Q. (2015) An object-based approach to delineate wetlands across landscapes of varied disturbance with high spatial resolution satellite imagery. ISPRS Journal of Photogrammetry and Remote Sensing, 109: 30-46. (2015 Impact Factor: 3.132)

2012 **Mui, A.** and He, Y. "Modeling core area habitat for the Blanding's Turtle (*Emydoidea blandingii*) in southern Ontario using remote sensing and GIS techniques", written for Ontario Ministry of Natural Resources, Species at Risk Branch (Principal Investigator)

2011 He, Y., Nesbitt, N, Tong, A. and **Mui, A.** "Detecting and mapping the endangered wild leek using remote sensing technology in Gatineau Park", written for the National Capital Commission, Gatineau Park

2010 He, Y and **Mui, A.** (2010) Scaling up Semi-Arid Grassland Biochemical Content from the Leaf to the Canopy Level: Challenges and Opportunities. Sensors, 10: 11072-11087. (2014 Impact Factor: 2.245)

2010 He, Y., Khan, A. and **Mui, A**. (2010) Integrating Remote Sensing and Wavelet Analysis for Studying Fine-Scaled Spatial Variation among Three Different Ecosystems. Photogrammetric Engineering & Remote Sensing, 78(2): 161-168. (2014 Impact Factor: 1.608)

Invited Speaker

2018 Invited Speaker | Canadian Remote Sensing Society | *Random Forest Algorithms for Image Classification*

2018 Invited Speaker | Natural Resources Canada (NRCan) & US Fish and Wildlife Service | *A Machine Learning Approach to Wetland Detection*

2017 Invited Speaker | Nova Scotia Bird Society | *Urban Biodiversity: Connecting Fragmented Landscapes*

2017 Panelist, City of Toronto Chief Planners Roundtable on Urban Biodiversity

2016 Invited Speaker | UTM | Hazel McCallion Academic Learning Centre | Instructional Technology Seminar Series, "*Classroom Response Systems for Small-Med Sized Classes*"

2016 Cornell University (Ithaca, NY), Department of Biology | Ecology and Evolutionary Biology, "*Biogeography and Reserve Design*"

2016 Canisius College (Buffalo, NY), Department of Biology, "*Iteroparity and Semelparity in Vertebrate Life History Strategies"*

2015 Toronto Zoo | Speaker Series (Toronto, ON), "*Finding Turtles from Space"*

2014 Ontario Multi-Species Turtles at Risk Recovery (OMSTARR) meeting, "*Species at risk mapping using remote sensing and GIS technology"*

Conference Presentations

2016 Society for Teaching & Learning in Higher Education (STLHE) Conference; "Active Learning Techniques in Undergraduate GIS and Remote Sensing Education", Poster, London, ON

2015 School of the Environment Research Day, University of Toronto; "Finding turtles from outer space; using satellite imagery to map critical habitat for declining turtles", Oral Presentation.

2014 (IALE) International Association of Landscape Ecology (Anchorage, Alaska); "Seasonal changes in core wetland connectivity for a threatened freshwater turtle in southern Ontario", Oral Presentation, ***Received Presentation Award***

2014 (IGARSS) International Geoscience and Remote Sensing Symposium (Quebec City, Quebec); "Remote Sensing Data for Mapping Seasonally Changing Wetland Habitat of a Threatened Turtle Species in Ontario", Poster Presentation

2014 Ontario Wetlands Day Conference (Toronto, Ontario); "*Modeling seasonal changes in habitat use by threatened turtles in a natural and disturbed wetland landscape*", Poster Presentation

2014 Ontario Turtle Conservation Group Meeting (Algonquin Park, Ontario): "Mapping habitat and travel corridors for Blanding's turtles in Rouge Park using remote sensing imagery and geospatial analysis", Oral presentation

2012 (SCGIS) Society for Conservation GIS Conference (Monterrey, California); "*Mapping wetland habitat for Blanding's turtle using an object-oriented approach*", Oral presentation

2012 Centre for Global Chance Science Conference (Toronto, Ontario); "*Seasonal influences on Blanding's turtle habitat in southern Ontario*", Poster Presentation

2011 (CAG) Canadian Association of Geographers Annual Conference (Calgary, Alberta); "*Using GIS to measure fragmentation of wetland habitat in southern Ontario*", Oral presentation*
Received Best Student Presentation Award

2011 Great Lakes Wetlands Conference (Toronto, Ontario), "*Habitat Modeling for Blanding's turtles in Ontario Wetlands: The Role of Remote Sensing*", Poster presentation

2010 University of Toronto Academic Excellence Night, Mississauga, Ontario, "*Object-based image analysis to delineate critical wetland habitat for Blanding's turtle*", Poster presentation

2002 International Conference of the Australasian Wildlife Management Society, Camden, New South Wales, Australia (Master's Thesis); "*Juvenile dispersal patterns and survivorship of Common Wombats in New South Wales*", Oral presentation

GRANTS, AWARDS & SCHOLARSHIPS

Research Funding and Grants (Internal & External)

2018 Active Learning Innovation Fund, Office of the Provost, Dalhousie University
2017 Teaching and Learning Enhancement Grant, CLT, Dalhousie University
2014 Graduate Research Award, Centre for Global Change Science
2012 Species at Risk Research Fund for Ontario, Ministry of Natural Resources
2010 Graduate Research Award, Centre for Global Change Science
2012 University of Toronto, Department of Geography, Graduate Research Award
2012 University of Toronto, Department of Geography, Graduate Travel Award

Teaching Grants and Awards

2018 Active Learning Innovation Fund, Office of the Provost, Dalhousie University
2017 Teaching and Learning Enhancement Grant, CLT, Dalhousie University

Federal-Provincial Scholarships

2014-2015 OGS, Ontario Graduate Scholarship
2011-2014 NSERC IPS sponsored by the Toronto Zoo
2010-2011 OGSST, William G. Dean Scholarship

Other Awards & Honours

2015 NASA-MSU Professional Enhancement Award
2014 Best Student Presentation Award, International Association for Landscape Ecology
2014 Travel Award, International Association for Landscape Ecology
2012 Bursary for Environmental Research, Town of Huntsville
2011 Best Student Presentation Award, Canadian Association of Geographers Conference
2014 Oscar J. Marshall Graduate Fellowship
2012 Graduate Anne McMaster Grant
2011 University of Toronto, Fellowship Award

TEACHING EXPERIENCE

Academic Appointments

2017-present Instructor, Environmental Science Program
Department of Earth and Environmental Sciences, Dalhousie University
ENVS2100: Environmental Informatics
ENVS2500: Field Methods in Environmental Science (Field School)
ENVS3000: Environmental Science Internship
ENVS3100: Environmental Analytics
ENVS-SUST3502: Environmental Problem-Solving II / Campus as a Living Lab
ENVS-ERTH-SCIE-BIOL-GEOG4850: GIS Research Project

2015-2017 Lecturer, Department of Geography, University of Toronto
GGR272: Digital Mapping & Principles of Cartography
GGR276: Spatial Data Analysis and Mapping
GGR311: Landscape Biogeography
ENV330: Experimental Design in Environmental Science
GGR335: Remote Sensing and GIS Integration
GGR337: Environmental Remote Sensing
GGR464: Advanced Remote Sensing

2015-2016 Instructor, Advanced Wildlife Field Techniques (annual summer course)
Seneca College | Ontario Association of Veterinary Technicians

External Teaching Appointments

2015-present Instructor, City of Toronto, Environmental Planning Division
Course: Urban Biodiversity (for City employees)

Teaching & Curriculum-Related Projects

2018-present Organizing Committee of the Dalhousie annual BioBlitz event

2016-present Assessment of student perception towards mobile-based classroom response system question types in an undergraduate classroom.

2016-present Curriculum Mapping Committee, Department of Geography, University of Toronto Mississauga. Project Goal: Develop a course-mapping system based on department and program level learning outcomes

Pedagogical Training, Certificates, Contributions, and Awards

2021 CIHR Institute of Gender and Health Core Competency for Sex and Gender Analysis

2019 Master Naturalist Certificate | Montana Natural History Centre

2018 Wildlife Care and Use Certificate | University Committee on Laboratory Animals (UCLA) and the Canadian Council on Animal Care (CCAC) guidelines

2017 Tri-Council Policy TCPS2 CORE Modules on Ethics in Research

2014 Teaching in the Higher Education (THE500) full-term course
University of Toronto, Professional & International Programs

2014 Instructional Resources Developer
- Murck, B.W. and B.J. Skinner (2014). Visualizing Geology. Wiley Visualizing Series, John Wiley and Sons, Inc.

2011 Advanced University Teaching Preparation Certificate, University of Toronto

2014 Best Student Presentation Award
- International Association for Landscape Ecology Conference (Anchorage, Alaska)

2010 Best Student Presentation Award
- Canadian Association of Geographers Annual Conference (Calgary, Alberta)

2013-2014 Senior Research Assistant (University of Toronto)
- Development of a web-based learning platform for undergraduate geospatial studies Results published in the Journal of Geography in Higher Education (*Mui et al, 2015).*

Outreach & Recruitment

2020 SuperNOVA STEM Summer Camp | Virtual Guest Speaker | Importance of Wetlands | Campers Grades 1-6

2018 Science Literacy Week | Halifax Central Library | Woman in Science representative

2017 Museums of Mississauga Speaker Series (Mississauga, ON), "*Urban Biodiversity: Get to know your wild neighbours*"

2017 UTM Remote Sensing-Drone Workshop for Secondary School Students
- Delivered full-day program on remotely sensed data collection techniques and interpretation to secondary school students on UofT campus and green spaces.

2015 Kendellhurst Academy, Streetsville, Mississauga
- Developed and delivered outreach program to K-12 students profiling research conducted in the Department of Geography, UTM.

2002-2005 Toronto Zoo Outreach Program
- Developed conservation-based outreach materials for K-12 students in the GTA.

2000-2003 Canadian Peregrine Foundation, Toronto, Ontario
- Educator – delivered outreach programs to K-12 students across southern Ontario profiling endangered birds of prey and their conservation.

STUDENT SUPERVISION

2019-2020 Hannah Miller, Undergraduate Honours Student
- Modeling Bicknell's Thrush habitat using Lidar-derived variables in Cape Breton highlands National Park

2019 Samuel Donaldson, Directed Readings student
- 80% contribution, co-supervised with Dr. Kate Sherren
- Estimating wetland connectivity overlap with planned developments in the HRM, Nova Scotia

2018-2019 Amy Frost-Wicks, Undergraduate Honours Student
- Modeling habitat connectivity of Blanding's turtles (*Emydoidea blandingii*) across a fragmented landscape in Rouge National Urban Park, Ontario, Canada

2017 Krista Jager, Research Assistant, Dalhousie University
- Mapping wildlife corridors in an urban park using Lidar data

2017 Aatiqa Javad, Work Study student, University of Toronto
- Habitat mapping using animal telemetry data and remotely sensed imagery

2016-2017 Leah D'Souza, Research Opportunity Program (ROP) student, University of Toronto
- Evaluating core GIS curriculum at UTM against skills valued by industry employers

2016-2017 Cindy Huynh, Research Opportunity Program (ROP) student, University of Toronto
- Undergraduate student perceptions towards classroom response systems

2015 Jiten Amin, Research Opportunity Program (ROP) student, University of Toronto
- Spatial distribution of the Burmese python
- Co-supervised with Dr. Monika Havelka, Department of Geography, UTM

2015-2015 Julianne Kryla, Undergraduate thesis student, University of Toronto
- Post-release home range analysis of head-started juvenile Blanding's turtles.
- Co-supervised with Dr. Marie-Josée Fortin, Department of Ecology & Evolutionary Biology, and the Toronto Zoo (research partner)

FIELD CAMPAIGNS & RESEARCH EXPERIENCE

2011-2014 Algonquin Provincial Park, ON
Project: Radio-telemetry tracking of Blanding's turtles and collection of biophysical variables to characterize habitat preference (Doctoral work, University of Toronto).

2012 Gatineau Park, Quebec
Project: Field validation of white trillium and wild leek distribution across Gatineau Park, Quebec. (RA, University of Toronto/ National Capitol Commission)

2002 University of Sydney (New South Wales, Australia)

Project: Radio-telemetry tracking of Common Wombats to identify dispersal patterns from natal burrows (Master's work).

2002 University of Sydney (New South Wales, Australia)
Project: Implementation of aversion management strategies for destructive roosting behaviour of Flying Foxes in the Sydney Royal Botanical Gardens.

2002 Tasmanian Parks & Wildlife Service (Tasmania, Australia)
Project: Collecting baseline population data for Blue (Fairy) penguins

2002 Victorian Peregrine Project (Victoria, Australia)
Project: Nation-wide monitoring of Peregrine Falcons via satellite-tagging

2000 Jardin Gaia (Quepos, Costa Rica)
Project: Post-release monitoring of Scarlet Macaws (*Ara macao)* confiscated from the illegal pet trade and returned to their native home range.

1999 Caribbean Conservation Corporation (Tortuguero, Costa Rica)
Project: Collecting morphometric data on nesting female Green Sea Turtles

1999 Prince Edward Point Bird Observatory (Picton-Point Traverse, Ontario)
Project: Trapping and banding migratory birds for a biannual provincial census.

UNIVERSITY SERVICE

2020-present Hiring Committee, Elizabeth May Chair in Sustainability and Environmental Health

2019-present Alumni Committee, Department of Earth and Environmental Sciences

2019-present Outreach Committee, Department of Earth and Environmental Sciences

2019 Hiring Committee, LTA, Environmental Science Program

2018-present GIS Double Major Working Group

2017-present ESRI Canada Centre for Excellence (ECCE) Advisory Committee

2017-2019 NSERC Undergraduate Student Research Awards Committee

2017 University of Toronto Active Learning Classroom Faculty Show & Share – Demonstrated techniques and technology used in an active learning classroom for campus-wide faculty.

2016 Chair and Organizer. Workshop: A Web-Based Learning Platform for providing remote access to computer programs. 25 participants from across 10 departments across campus.

2015 Graduate student TA's for TA's program
Contributed to program which trained student observers to evaluate their peers in teaching roles to provide collegial and constructive feedback.

2014 Search Committee Member for the Department of Geography Chair.
Invited by the Vice-Dean of the University of Toronto Mississauga (UTM) campus.

2014 Invited Panelist (1 of 5) - Professional Graduate Workshop Series: Successful Grant Writing University of Toronto, St. George Campus.

2014 Invited Panelist (1 of 4) - Professional Graduate Workshop Series: Presenting a Conference Paper University of Toronto, St. George Campus.

2014 Mentor/Advisor for incoming graduate students of Physical and Human Geography.

2012 Member of the Search Committee for a Physical Geography tenure-track professor in the Department of Geography, University of Toronto Mississauga.

2012 Graduate seminar series co-chair, organised graduate talks from the Department of Biology and Department of Geography and Planning.

2012 Successfully awarded ($16,000) towards continuing a program developed in the previous year aimed at increasing connectivity between UTM graduate students (below).

2011 Co-chaired a successfully funded project ($10,000) aimed at increasing connectivity between UTM graduate students through a series of workshops, retreats and mentorship programs.
- Hosted an international expert on statistical analyses to provide individual consultation on graduate students' research. Participants gained a deeper understanding of advanced statistics, the event received positive reviews and the host was re-invited the next year.

2011 Student Representative, Centre for Environment's Jane Goodall Institute Steering Committee.

2010 Member of Graduate Panel for an Undergraduate Advisory Session.

IN THE PRESS

2016 Centre for Teaching Support and Innovation (UofT): ReTHINK (upcoming) http://rethink.utoronto.ca/
Featured along with other colleagues teaching in the Active Learning Classrooms at UTM

2013 GoGeomatics Magazine, Theme: Canadian Women in Geomatics
http://www.gogeomatics.ca/magazine/amy-mui-high-resolution-multispectral-satellite-imagery-for-identifying-turtle-habitats.htm

2013 MISSISSAUGA Life Magazine, Issue No. 21, Faces & Places Profiles
Article Title: Young Achievers, the Nature of Success
http://www.nicoledanesi.com/uploads/1/9/9/8/19982813/spoc21_young_achievers.pdf