**Robert Walter Buchkowski | PhD**

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| **Personal Information:**  University of Western Ontario  Department of Biology  London, ON  N6A 5B7, Canada | Tel: (203) 602-4483  Email: [robert.buchkowski@gmail.com](mailto:robert.buchkowski@gmail.com)  Twitter: @BuchkowskiR  Website: [robertwbuchkowski.github.io](https://robertwbuchkowski.github.io/) |

**Education:**

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| 2019 | PhD | Yale School Forestry & Environmental Studies |
| 2016 | MPhil | Yale School Forestry & Environmental Studies |
| 2014 | MESc | Yale School Forestry & Environmental Studies |
| 2012 | HBSc | Lakehead University |

**Appointments:**

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| 2020-2022 | NSERC Postdoctoral Fellow | University of Western Ontario |

**Publications:**

\* Mentee

1. **Buchkowski, R**.**W.**, A.N. Shaw, D. Sihi, G.R. Smith, A.D. Keiser. 2019. Constraining carbon and nutrient flows in soil with ecological stoichiometry. *Frontiers in Ecology and Evolution.* [https://doi.org/10.3389/fevo.2019.00382](https://www.frontiersin.org/articles/10.3389/fevo.2019.00382/abstract)
2. Benedek, K., J. Bálint, I. Máthé, G. Mara, T. Felföldi, A. Szabó, C. Fazakas, C. Albert, **R. W. Buchkowski**, O. J. Schmitz, and A. Balog. 2019. Linking intraspecific variation in plant chemical defence with arthropod and soil bacterial community structure and N allocation. *Plant and Soil*. <https://doi.org/10.1007/s11104-019-04284-7>
3. **Buchkowski, R.W.**,Leroux, S.J., & Schmitz, O.J. 2019. Microbial and animal nutrient limitation change the distribution of nitrogen within coupled green and brown food chains. *Ecology*, 100(5), e02674. <https://doi.org/10.1002/ecy.2674>
4. **Buchkowski, R.W.**,Schmitz, O.J., Bradford, M.A. 2019. Herbivore and detritivore effects on nitrogen recycling: implications for plant nitrogen uptake and growth. *Journal of Ecology*, 107, 963-976. <https://doi.org/10.1111/1365-2745.13079>
5. Schmitz, O.J., **Buchkowski, R.W.**, Smith, J.R., Telthorst, M. & Rosenblatt, A.E. 2017. Predator community composition is linked to soil carbon retention across a human land use gradient. *Ecology*, 98, 1256-1265. <https://doi.org/10.1002/ecy.1794>
6. **Buchkowski, R.W.**, Bradford, M.A., Grandy, A.S., Schmitz, O.J. & Wieder, W.R. 2017. Applying population and community ecology theory to advance understanding of belowground biogeochemistry. *Ecology Letters*, 20, 231-245. <https://doi.org/10.1111/ele.12712>
   * Top 20 downloaded article 2017-2018 in *Ecology Letters*
7. **Buchkowski, R.W.** 2016. Top-down consumptive and trait-mediated control do affect soil food webs: it’s time for a new model. *Soil Biology and Biochemistry*, 102: 29-32. <https://doi.org/10.1016/j.soilbio.2016.06.033>
8. Mendelsohn, R., Prentice, I.C., Schmitz, O., Stocker, B., **Buchkowski, R.W.** & Dawson, B. 2016. The ecosystem impacts of severe warming. *The American Economic Review*, 106: 612-614.  [https://doi.org/10.1257/aer.p20161104](%20https://doi.org/10.1257/aer.p20161104)
9. **Buchkowski, R. W.**, Williams, C. J., Kelly, J., Veinot, J. G., and Xenopoulos, M. A. 2016. Nanosilver and nano zero-valent iron exposure affects nutrient exchange across the sediment–water interface. *Bulletin of Environmental Contamination and Toxicology*, 96: 83-89. <https://doi.org/10.1007/s00128-015-1697-z>
10. **Buchkowski, R. W.** and Schmitz, O. J. 2015. Detritivores ameliorate the enhancing effect of plant-based trophic cascades on nitrogen cycling in an old-field system. *Biology Letters*, 11: 20141048. <https://doi.org/10.1098/rsbl.2014.1048>
11. **Buchkowski, R. W.**, Schmitz, O. J., and Bradford, M. A. 2015. Microbial stoichiometry overrides biomass as a regulator of soil carbon and nitrogen cycling. *Ecology*, 96:1139-1149. <https://doi.org/10.1890/14-1327.1>
12. Schmitz, O. J., **Buchkowski, R. W.**, Burghardt, K. T., and Donihue, C. M. 2015. Functional traits and trait-mediated interactions: connecting community-level interactions with ecosystem functioning. *Advances in Ecological Research*, 53: 319-343. <https://doi.org/10.1016/bs.aecr.2015.01.003>
13. Dashtban, M., **Buchkowski, R.W.**, and Qin, W. 2011. Effect of different carbon sources on cellulase production by *Hypocrea jecorina* (T*richoderma reesei*) strains. *International Journal of Biochemistry and Molecular Biology* 2:274-286. <https://www.ncbi.nlm.nih.gov/pmc/PMC3193291/>

**Publications in review** (with the journal)**/revision** (returned to authors)**:**

1. Guiliano, S.\*, Karr, C.\*, Sommer, N.\*, **Buchkowski, R.W.** *in revision* Indirect interactions link plant-based and detritus-based food chains: behavioral studies of woodlice and nursery web spiders. *Peer J*
2. **Buchkowski, R.W.** *in revision*. Nonlinear interactions between herbivores and detritivores develop slowly and conspicuously into feedbacks. *Ecological Monographs*
3. Donihue, C.M., Kowaleski, A., Algar, A., Baeckens, S., **Buchkowski, R.W.**, Fabre, A.-C., Frank, H.K., Geneva, A.J., Mahler, D.L., Reynolds, R.G., Stroud, J.T., Velasco, J.A., Kolbe, J.J., Losos, J.B., Herrel, A. *in revision*. Hurricane effects on neotropical lizards span geographic and phylogenetic scales. *PNAS*
4. **Buchkowski, R.W.**, Morris, D.W., Halliday, W.D., Dupuch, A., Morrissette-Boileau, C., Boudreau, S. *in review*. Temperature increase does not necessarily promote shrub growth in the Central Canadian Arctic. *Arctic, Antarctic, and Alpine Research*

**Non-refereed publications:**

1. Helton, A., Lewis, R., Hoffnagle, G., Prewo, K.M., Kane, K., Smith, W.J., Keiser D.A., Stahl, J., Klug, J.L. Tobias, C., Raymond, P.A., **Buchkowski, R.W.**, Coplin, K., Weber, L., Strauss, R.H., Clark, T., Bertini, A.G. (2014) Methods to measure phosphorus and make future projections. The Connecticut Academy of Science and Engineering. Reported Dec. 17/2014: 1-66.

**Academic Presentations:**

\*Invited seminars

* Buchkowski, R.W. October 2019. When do interactions between green (production) and brown (decomposition) food chains matter? Memorial University, St. John’s, NL, CAN\*
* Buchkowski, R.W. April 2019. Earthworms work alone: the combined impact of non-native earthworms and native herbivores on plants and nutrient cycling in Connecticut old-fields. The Northeast Natural History Conference; Springfield, MA, USA
* Buchkowski, R.W. November 2018. The effects of herbivores and decomposers on plant communities and nutrient cycles. Yale Institute for Biospheric Studies; New Haven, CT, USA
* Buchkowski, R.W. October 2018. Insect herbivory impacts leaf-litter nitrogen with cascading effects on detritivory but not on plant growth. University of Maryland; College Park, MD, USA\*
* Buchkowski, R.W. July 2018. Empirical insights on the feedbacks between terrestrial green and brown food chains. Canadian Society for Ecology and Evolution; Guelph, ON, CAN
  + Co-organized the symposium “Merging theory and empirical research on ecosystem functioning of connected ecosystems” with S.J. Leroux
* Buchkowski, R.W. April 2018. *Upgoer 5*: Animals change where matter is in fields, but only when we consider the starting place and the ground. Research Colloquium at Yale University; New Haven, CT, USA
* Buchkowski, R.W. August 2017. Plant growth responds to the detritivores processing of leaf litter only when that litter has a history of herbivory. Ecological Society of America; Portland, OR, USA
* Buchkowski, R.W. September 2016. Unanticipated interactions explain the combined effects of plant-based and detritus-based food chains on nitrogen cycling. Memorial University, St. John’s, NL, CAN\*
* Buchkowski, R.W. September 2015. Is it what you eat or where you live that matters? Yale University Doctoral Conference; New Haven, CT, USA
* Buchkowski, R. W. August 2015. An empirical assessment of a stoichiometrically and microbially explicit nutrient cycling model. Ecological Society of America; Baltimore, MD, USA
* Buchkowski, R. W. June 2015. Detritivores ameliorate the enhancing effect of plant-based trophic cascades on nitrogen cycling. Rhizosphere 4; Maastricht, Limburg, Netherlands
* Buchkowski, R. W. and Schmitz, O. J. April 2014. How do aboveground and belowground consumers impact nitrogen mineralization? Research Colloquium at Yale University; New Haven, CT, USA
  + Awarded best oral presentation
* Buchkowski, R. W. March 2014. Putting animals back into the nitrogen cycle. Trent University; Peterborough, ON, CAN

**Poster Presentations:**

* **Buchkowski, R. W.** and Schmitz, O. J. August 2014. How do aboveground and belowground consumers impact nitrogen mineralization? Ecological Society of America; Sacramento, CA, USA

**Public Presentations:**

* **Buchkowski, R. W.** 2015. Isopods and how they fit into the old-field nitrogen cycle. Yale-Myers Forest Seminar Series; Eastford, CT, USA
* **Buchkowski, R.W.** 2014. GMOs: Let’s talk. The Green Café; New Haven, CT, USA
* Grome, M., Lauridsen, H., **Buchkowski, R.W.** 2014. OMG GMOs! Food for thought. Yale Science Diplomats: Science in the News; New Haven, CT, USA

**Theses:**

* Doctor of Philosophy (*with Distinction*)
  + Title: ‘Feedbacks between plant-based and detritus-based food chains and their impacts on carbon and nitrogen cycling’
  + Committee: Dr. O.J. Schmitz (chair), Dr. M.A. Bradford, and Dr. S.J. Leroux
* Masters of Environmental Science
  + Title: ‘Detritivores ameliorate the enhancing effect of plant-based trophic cascades on nitrogen cycling in an old-field system’
  + Advisor: Dr. O.J. Schmitz
* Honors Bachelor of Science
  + Title: ‘Precipitation limits shrub growth in the Central Canadian Arctic’
  + Advisor: Dr. D.W. Morris

**Teaching Experience:**

* University of Western Ontario
  + Biodiversity Science (Spring 2020)
    - Instructor of record
* Yale University
  + Workshop: Diversity and Inclusion in Teaching (Spring 2019)
  + Applied Math for Environmental Studies (Fall 2013, 2015)
    - Duties: Lectures, office hours, grading
  + Dynamics of Ecological Systems (Spring 2015)
    - Duties: Lectures, office hours, grading
  + Ecosystems and Landscapes (Fall 2014)
    - Duties: Lead a field and laboratory section
* Lakehead University
  + Animal Biology (Fall 2011)
    - Duties: Lead a laboratory section
  + Comparative Animal Physiology (Spring 2011)
    - Duties: Lead a laboratory section

**Mentoring Experience:**

* High school science fair mentor (2013-2018)
  + L. Mannan, D. Barak, H. Khan, A. Gilbride, J. Benedetti, C. Karr, S. Guiliano, and S. Parmet
* Undergraduate students (with their primary supervisors)
  + Z. Miller and A. Houston
  + Yale Field Naturalists (5-10 students per field season)
* Graduate students (with their primary supervisors)
  + N. Sommer and M. Swain

**Awards/ Honors:**

* Flag Bearer (top academic performance), Yale School of Forestry & Environmental Studies, 2014
* Best Master’s thesis presentation, Yale School of Forestry & Environmental Studies, 2014
* Robert Poulin Memorial Award for Outstanding Citizenship, Lakehead University 2012
* Lakehead University President’s Award for Community Leadership, 2012
* Dean of Science and Environmental Studies Metal, Lakehead University 2012
* Biology Prize, Lakehead University 2012
* Gold Metal in Earth and Environmental Sciences, Canada Wide Science Fair, 2008

**Scholarships** (Total ≅ $646,000 CAN)**:**

* Postdoctoral Fellowships Program, Natural Science and Engineering Research Council of Canada 2019, $90,000 CAN
* Postgraduate Scholarship for Doctoral Students, Natural Science and Engineering Research Council of Canada 2014, $63,000 USD
* Yale University Doctoral Fellowship, 2014, $ 264,000 USD
* Mackenzie King Scholarship, 2013, $8,300 CAN
* Faculty of Forestry and Environmental Studies Entrance Scholarship, Yale University 2012-2013, $40,000 USD
* Postgraduate Scholarship for Masters Students, Natural Science and Engineering Research Council of Canada 2012, $17,300 CAN
* Undergraduate Student Research Award, Natural Science and Engineering Research Council of Canada 2011, $4,500 CAN
* Undergraduate Student Research Award, Natural Science and Engineering Research Council of Canada 2010, $4,500 CAN
* Undergraduate Student Research Award, Canada Wide Science Fair 2009, $4,500 CAN
* President’s Scholarship, Lakehead University 2008, $24,000 CAN
* Local Excellence Award, Canada Millennium Scholarship Progra4,5m 2008, $4,000 CAN
* Queen Elizabeth II: Aim For The Top Tuition Scholarship, Ontario Student Assistance Program 2008, $500 CAN

**Grants** (Total ≅ $58,000 CAN):

* Center for Tree Science Fellowship, Morton Arboretum, 2020, $12,700 USD
* Kohlberg Fellowship, 2018, $1000 USD
* Yale Institute for Biospheric Studies Fellowship, 2017, $1,500 USD
* Kohlberg Fellowship, 2017, $1000 USD
* Schiff Fund, Yale University, 2016, $8,500 USD
* Yale Institute for Biospheric Studies Fellowship, 2015, $4,000 USD
* Yale Institute for Biospheric Studies Matching Funds, 2015, $750 USD
* Yale Institute for Biospheric Studies Fellowship, 2014, $4,500 USD
* Edna Bailey Sussman Fund, 2013, $6,300 USD
* Schiff Fund, Yale University, 2013, $3,500 USD

**Memberships in Professional Societies:**

* Canadian Society for Ecology and Evolution 2017-present
* Ecological Society of America 2012-present

**Professional Service:**

* Reviewer: *Applied Soil Ecology, Basic and Applied Ecology*, *Biology and Fertility of Soils, Ecological Modelling, Ecology, Ecosphere, Environmental Microbiology, Environmental Toxicology Reports, Evolution, Functional Ecology, Global Change Biology, Nature Geoscience, New Phytologist, Pedobiologia, Peer Community in Ecology, Proceedings B,* and *Soil Biology and Biochemistry*
* Associate Editor: *Ratios Matter* 2020
* Group leader: Stoichiometry in emerging models of terrestrial organic matter dynamics, WoodStoich 4, 2019
* Doctoral Student Member, Yale-Myers Forest Research Committee 2015-2019
* PhD Representative, Student Academic Affairs Committee 2014-2015
* Research Team Member, Connecticut Academy of Sciences and Engineering (Working Group 2 from CT Public Act 12-155), 2013-2015
* Student Senator, Lakehead University Senate 2009-2012
* Undergraduate Representative, Lakehead University Library Committee 2009-2012

**Volunteering:**

* Judge, New Haven Science Fair, 2019
* Co-leader, SCOPE: Data Analysis Student Interest and Mentoring Group, 2018 & 2019
* Co-organized high school student program at Yale Research Day, 2018 & 2019
* Co-organized the Environmental Café for high school students, 2018 & 2019
* Co-organized a Science Communication Workshop, Yale University, 2017
* Student Presenter, Yale University Science In The News, 2013
* Volunteer, New Haven Science Fair, 2013
* Events Coordinator, Lakehead Association of Biology Students 2010-2011
* Host Committee, Canada Wide Science Fair 2010
* Chaperone, Canadian Biology Olympiad 2009-2010
* Student Ambassador, Orientation and Commuter Services Office of Lakehead University 2008-2011

**Languages:**

* English: Native
* Portuguese (Brazilian): Intermediate

**Academic References:**

Dr. Oswald J. Schmitz

Greeley Memorial Laboratory

370 Prospect Street

New Haven, CT, USA, 06511

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Dr. Shawn J. Leroux

Department of Biology

Memorial University of Newfoundland

232 Elizabeth Ave

St John’s, NL, Canada, A1B 3X9

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Dr. Mark A. Bradford

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