**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 review* 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/ Fellowships** (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/Fellowships** (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, New Phytologist, Pedobiologia, Peer Community in Ecology, Proceedings B,* and *Soil Biology and Biochemistry*
* 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

Tel: 203-500-8697

Email: oswald.schmitz@yale.edu

Dr. Zoë Lindo

Department of Biology

University of Western Ontario

1151 Richmond Street

London, ON, Canada, N6A 5B7

Tel: 519-661-2111 ext. 82284

Email: zlindo@uwo.ca

Dr. Shawn J. Leroux

Department of Biology

Memorial University of Newfoundland

232 Elizabeth Ave

St John’s, NL, Canada, A1B 3X9

Tel: 709-864-3042

Email: sleroux@mun.ca

Dr. Mark A. Bradford

Greeley Memorial Laboratory

370 Prospect Street

New Haven, CT, USA, 06511

Tel: 203-436-9148

Email: mark.bradford@yale.edu