

## **Becky A. Ball**

Arizona State University at the West Campus  
New College of Interdisciplinary Arts & Sciences  
School of Mathematical and Natural Sciences  
4701 W. Thunderbird Road  
Glendale, AZ 85306-4908  
becky.ball@asu.edu  
602.543.2010

### Education

2003-2007: University of Georgia, Odum School of Ecology, Georgia. Ph.D.  
Dissertation title: Disentangling effects of litter diversity: Non-random species loss, cross-system linkages, and ecosystem function  
Advisors: Mark Hunter and Mark Bradford  
Committee: Dave Coleman, Cathy Pringle, Paul Hendrix, Miguel Cabrera  
1998-2002: Goucher College, Maryland. B.A. (honors) in Biology

### Related Professional Experience

2016-present: Associate Professor, School of Mathematical and Natural Sciences, New College of Interdisciplinary Arts & Sciences, Arizona State University, Glendale, AZ;  
2018-present: Interim Associate Director, School of Mathematical and Natural Sciences  
2010-2016: Assistant Professor, School of Mathematical and Natural Sciences, New College of Interdisciplinary Arts & Sciences, Arizona State University, Glendale, AZ  
2007-2010: Postdoctoral Research Associate, Dartmouth College, Hanover, NH  
2009, 2010: Visiting Assistant Professor of Environmental Studies, Dartmouth College  
2003-2007: Graduate Research Assistant, University of Georgia, Athens, GA

### Teaching Experience

#### *Instructor:*

Fundamentals of Environmental Science (ENV 201, lecture/seminar, ASU, undergraduate majors)  
Soil Science (ENV 410, integrated lecture/lab, ASU, undergraduate majors)  
Ecosystem Ecology (BIO 422, lecture/seminar, ASU, undergraduate majors)  
BioArt: Sonoran and Arctic Environments (ENV/IAP/LSC 394, ASU, undergraduate majors)  
The Human Environment (LSC 362, lecture, ASU, undergraduate majors and nonmajors)  
Fundamentals of Ecology Laboratory (LSC 322, lab, ASU, undergraduate majors)  
Sustainable World (SOS 110, lecture/seminar, ASU, undergraduate nonmajors)  
General Biology I laboratory (BIO 181, lab, ASU, undergraduate majors)  
Global Environmental Science (ENVS 30, lecture, Dartmouth, undergraduate majors and minors)

#### *Supervisor:*

Individualized Instruction (LSC/ENV 499, ASU, undergraduate majors)  
Intro to Research Techniques (BCH 392, ASU, undergraduate majors)  
Honors Directed Study (LSC/SOS 492, ASU, undergraduate majors)  
Honors Thesis (LSC/SOS 493, ASU, undergraduate majors)

### Students supervised

At ASU, I have supervised 26 undergraduate students and 3 high school student who have participated in the field and lab aspects of my research, including Barrett Honors students, WAESO undergraduate researchers, and NCUIRE scholars and fellows. I currently serve on MS and PhD committees for 3 graduate students.

## Areas of Research Interest

Soil biogeochemistry and stoichiometry  
Soil ecology and biology  
Terrestrial-aquatic linkages  
Above- and belowground linkages  
Global change effects on terrestrial ecosystems

## Peer-Reviewed Publications

\*indicates an undergraduate student author

27. **Ball, B.A.**, M. Christman\* (**co-leads**), S.J. Hall. 2019. Nutrient dynamics during photodegradation of plant litter in the Sonoran Desert. *Journal of Arid Environments* 160: 1-10. [doi: 10.1016/j.jaridenv.2018.09.004](https://doi.org/10.1016/j.jaridenv.2018.09.004)
26. Aanderud, A.Z., S. Saurey, **B.A. Ball**, D.H. Wall, J.E. Barrett, M. Muscarella, N. Griffin, R.A. Virginia, B.J. Adams. 2018. Stoichiometric shifts in soil C:N:P promote bacterial taxa dominance, maintain biodiversity, and deconstruct community assemblages. *Frontiers in Microbiology* 9: 1401. [doi: 10.3389/fmicb.2018.01401](https://doi.org/10.3389/fmicb.2018.01401)
25. Alvarez Guevara, J.N.\* and **Ball, B.A.** 2018. Urbanization alters small rodent community composition but not abundance. *PeerJ*. 6:e4885. [doi: 10.7717/peerj.4885](https://doi.org/10.7717/peerj.4885)
24. **Ball, B.A.**, B.J. Adams, J.E. Barrett, D.H. Wall, R.A. Virginia. 2018. Soil biological responses to C, N and P fertilization in a polar desert of Antarctica. *Soil Biology & Biochemistry* 122: 7-18. [doi: 10.1016/j.soilbio.2018.03.025](https://doi.org/10.1016/j.soilbio.2018.03.025)
23. Carrillo, Y., **B.A. Ball**, and M. Molina. 2016. Stoichiometric linkages between plant litter, trophic interactions and nitrogen mineralization across the litter-soil interface. *Soil Biology & Biochemistry* 92: 102-110. [doi:10.1016/j.soilbio.2015.10.001](https://doi.org/10.1016/j.soilbio.2015.10.001)
22. **Ball, B.A.** and R. Virginia. 2015. Controls on diel soil CO<sub>2</sub> flux across moisture gradients in a polar desert. *Antarctic Science*. 27(6): 527-534. [doi: 10.1017/S0954102015000255](https://doi.org/10.1017/S0954102015000255)
21. **Ball, B.A.**, C.R. Tellez\*, and R.A. Virginia. 2015. Penguin activity influences soil biology, biogeochemistry, and soil respiration in rookeries on Ross Island, Antarctica. *Polar Biology*. 38(9): 1357-1368. [doi: 10.1007/s00300-015-1699-7](https://doi.org/10.1007/s00300-015-1699-7)
20. **Ball, B.A.** and J.S. Levy. 2015. The role of water tracks in altering biotic and abiotic soil properties and processes in a polar desert in Antarctica. *Journal of Geophysical Research - Biogeosciences*. 120(2): 270-279. [doi: 10.1002/2014JG002856](https://doi.org/10.1002/2014JG002856)
19. **Ball, B.A.** and J. Alvarez Guevara\*. 2015. The nutrient plasticity of moss-dominated crust in the urbanized Sonoran Desert. *Plant and Soil*. 389(1-2): 225-235. [doi: 10.1007/s11104-014-2355-7](https://doi.org/10.1007/s11104-014-2355-7)
18. Nielsen, U.N. and **B.A. Ball (co-leads)**. 2015. Impacts of altered precipitation regimes on soil communities and biogeochemistry in arid and semi-arid ecosystems. *Global Change Biology*. 21(4): 1407-1421. [doi: 10.1111/gcb.12789](https://doi.org/10.1111/gcb.12789)
17. **Ball, B.A.** and R. Virginia. 2014. The ecological role of moss in a polar desert: implications for aboveground-belowground and terrestrial-aquatic linkages. *Polar Biology* 37(5): 651-664. [doi: 10.1007/s00300-014-1465-2](https://doi.org/10.1007/s00300-014-1465-2)
16. **Ball, B.A.** and R. Virginia. 2014. Microbial biomass and respiration responses to nitrogen fertilization in a polar desert. *Polar Biology* 37(4): 573-585. [doi: 10.1007/s00300-014-1459-0](https://doi.org/10.1007/s00300-014-1459-0)
15. Levy, O., **B.A. Ball (co-leads)**, et al. 2014. Approaches to advance scientific understanding of macrosystems ecology. *Frontiers in Ecology and the Environment* 12(1): 15-23. [doi:10.1890/130019](https://doi.org/10.1890/130019) For a special issue on Macrosystems Ecology stemming from a working group at the MSB PI meeting.

14. **Ball, B.A.**, Y. Carrillo, M. Molina. 2014. The influence of litter composition across the litter-soil interface on mass loss, nitrogen dynamics and the decomposer community. *Soil Biology & Biochemistry*. 69: 71-82. doi: [10.1016/j.soilbio.2013.10.048](https://doi.org/10.1016/j.soilbio.2013.10.048)
13. **Ball, B.A.** and R. Virginia. 2012. Meltwater seep patches increase heterogeneity of soil geochemistry and therefore habitat suitability. *Geoderma* 189-190, 652-660. doi: [10.1016/j.geoderma.2012.06.028](https://doi.org/10.1016/j.geoderma.2012.06.028)
12. Magalhães, C., M.I. Stevens, S.C. Cary, **B.A. Ball**, B.C. Storey, D.H. Wall, R. Türk, U. Ruprecht. 2012. At the limits of life: multidisciplinary insights reveal environmental constraints on biotic diversity in continental Antarctica. *PLoS ONE*. 7(9): e44578. doi:[10.1371/journal.pone.0044578](https://doi.org/10.1371/journal.pone.0044578)
11. Carrillo, Y., **B.A. Ball**, M. Strickland, M. Bradford. 2012. Legacies of plant litter on carbon and nitrogen dynamics and the role of the soil community. *Pedobiologia* 55(4): 185-192. doi: [10.1016/j.pedobi.2012.02.002](https://doi.org/10.1016/j.pedobi.2012.02.002)
10. Nielsen, U.N., D.H. Wall, B. J. Adams, R.A. Virginia, **B.A. Ball**, M.N. Gooseff, D.M. McKnight. 2012. The ecology of pulse events: insights from an extreme climatic event in a polar desert ecosystem. *Ecosphere* 3(2):17. doi: [10.1890/ES11-00325.1](https://doi.org/10.1890/ES11-00325.1)
9. **Ball, B.A.**, J.E. Barrett, M.N. Gooseff, R.A. Virginia, D.H. Wall. 2011. Implications of meltwater pulse events for soil biology and biogeochemical cycling in a polar desert. *Polar Research* 30: 14555. doi: [10.3402/polar.v30i0.14555](https://doi.org/10.3402/polar.v30i0.14555). Invited paper for special International Polar Year Oslo Science Conference issue.
8. Carrillo, Y., **B.A. Ball**, M. Bradford, C. Jordan, M. Molina. 2011. Soil fauna alter the effects of litter composition on nitrogen cycling in a mineral soil. *Soil Biology & Biochemistry* 43(7): 1440-1449. doi:[10.1016/j.soilbio.2011.03.011](https://doi.org/10.1016/j.soilbio.2011.03.011)
7. **Ball, B.A.**, J.S. Kominoski, H.E. Adams, S.E. Jones, E.S. Kane, T.D. Loecke, W. Mahaney, J. Martina, C.M. Prather, T.M.P. Robinson, C.T. Solomon. 2010. Direct and terrestrial vegetation-mediated effects of environmental change on aquatic ecosystem processes. *BioScience* 60(8): 590-601. doi:[10.1525/bio.2010.60.8.5](https://doi.org/10.1525/bio.2010.60.8.5)
6. **Ball, B.A.**, R.A. Virginia, J.E. Barrett, A. Parsons, D.H. Wall. 2009. Interactions between physical and biotic factors influence CO<sub>2</sub> flux in Antarctic dry valley soils. *Soil Biology & Biochemistry* 41(7): 1510-1517. doi:[10.1016/j.soilbio.2009.04.011](https://doi.org/10.1016/j.soilbio.2009.04.011)
5. **Ball, B.A.**, M.A. Bradford, D.C. Coleman, M.D. Hunter. 2009. Linkages between below and aboveground communities: decomposer responses to simulated tree species loss are largely additive. *Soil Biology and Biochemistry*. 41(6): 1155-1163. doi:[10.1016/j.soilbio.2009.02.025](https://doi.org/10.1016/j.soilbio.2009.02.025)
4. **Ball, B.A.**, M.A. Bradford, M.D. Hunter. 2009. Nitrogen and phosphorus release from mixed litter layers is lower than predicted from single species decay. *Ecosystems* 12(1): 87-100. doi: [10.1007/s10021-008-9208-2](https://doi.org/10.1007/s10021-008-9208-2)
3. **Ball, B.A.**, M.D. Hunter, J.S. Kominoski, C.M. Swan, M.A. Bradford. 2008. Consequences of non-random species loss for decomposition dynamics: experimental evidence for additive and non-additive effects. *Journal of Ecology*. 96(2): 303-313. doi: [10.1111/j.1365-2745.2007.01346.x](https://doi.org/10.1111/j.1365-2745.2007.01346.x)
2. Kominoski, J.S., C.M. Pringle, **B.A. Ball**. 2008. Invasive woolly adelgid appears to drive seasonal hemlock and carcass inputs to a detritus-based stream. *Verh. Internat. Verein. Limnol.* 30(1): 109-112.
1. Kominoski, J.S., C.M. Pringle, **B.A. Ball**, M.A. Bradford, D.C. Coleman, D.B. Hall, and M. D. Hunter. 2007. Non-additive effects of leaf litter species diversity on breakdown dynamics in a detritus-based stream. *Ecology* 88(5): 1167-1176. doi: [10.1890/06-0674](https://doi.org/10.1890/06-0674)

#### Manuscripts Submitted, In Review, or Revising

2. **Ball, B.A.**, M.D. Hunter, J.S. Kominoski, C.M. Pringle, M.A. Bradford. Litter and microbial carbon dynamics with simulated tree species loss in a coupled terrestrial and aquatic system. In revision.

1. Kominoski, J.S., C.M. Pringle, **B.A. Ball**, M.A. Bradford, D.C. Coleman, M.A. Hunter, B.A. Mattson. Environmental conditions influence chemical and biological mechanisms of litter diversity effects on terrestrial and aquatic decomposition. In revision.

#### Data Packages

Datasets generated by research projects for the above manuscripts have been archived and made assessable to the public at the following locations:

5. Ball, B. Impact of urbanization on small rodent abundance and community composition. Environmental Data Initiative. doi:[10.5072/FK2/9a20d7ad128de1ccb45b71e48fae95f](https://doi.org/10.5072/FK2/9a20d7ad128de1ccb45b71e48fae95f).
4. Ball, B. Underway Hydrographic, Weather and Ship-state Data (JGOFS) from the Antarctic Peninsula acquired during the Laurence M. Gould expedition LMG1602 (2016). Integrated Earth Data Applications (IEDA). doi:[10.1594/IEDA/322420](https://doi.org/10.1594/IEDA/322420)
3. Ball, B. The role of moss as integrators of soil and stream nutrient status in deserts, Greater Phoenix area, Arizona, 2011 to 2013. Central Arizona-Phoenix Long-Term Ecological Research. Environmental Data Initiative. <http://dx.doi.org/10.6073/pasta/dd579db21f426d83dbcebda3556be3e1>
2. Ball, B and Carrillo, Y. Interaction of soil fauna and plant litter composition on decomposition processes across the litter-soil interface. Knowledge Network for Biocomplexity. doi:10.5063/F1NK3BZ1 <https://knb.ecoinformatics.org/443/knb/metacat/bball.3.3/knb>
1. Ball, B and Virginia, R. Moss nutrient plasticity and stoichiometry. McMurdo Long-Term Ecological Research. doi:10.6073/pasta/b5174ac3d24f177693b830a6666f60f9 <https://portal.lternet.edu/nis/mapbrowse?packageid=knb-lter-mcm.4015.2>

#### Funded External Grants

6. Collaborative Research: Train (Transfer To Interdisciplinary Natural Sciences): A Community College-University Consortium To Increase Community College Student Transfer And Success  
PI: T. Sandrin, Co-PI: L. Ferry, S. Mooney, S. Sandrin, P. Marshall, **Other Personnel: B. Ball, J. Broatch, E. Camacho, S. Dietrich, J. Hackney, Y. Silva**  
NSF-EHR: DUE, 15 January 2018-14 January 2023, \$62,569 (3% of total \$2,065,516)
5. LTER CAP IV: Design with Nature Infrastructure in Phoenix: A Framework for Exploring Urban Ecology and Sustainability  
PI: D. Childers, Co-PI: N. Grimm, S. Hall, A. York, B. Turner, **Other Personnel: B. Ball**, among ~40 others.  
NSF DEB-1637590, 1 December 2016-30 November 2018, \$22,540 (1% of total \$2,254,000)
4. Polar (DCL- 16-119): Development and Evaluation of an Interdisciplinary Course-based Undergraduate Research Experience in Arctic Sciences  
**PI: B.A. Ball**, Co-PIs: R. Lerman, S. Sandrin  
NSF OPP-1707867, 15 August 2017 – 31 July 2020, \$271,820
3. Collaborative Research: EAGER: Pathways and patterns of litter chemistry during decomposition  
**PI: B.A. Ball**, Co-PIs: K. Wickings, L. Christensen  
NSF DEB-1537920, 1 June 2015 – 31 May 2018, \$57,489  
Supplements: REU \$5,667; ROA \$25,679
2. Collaborative Research: Climatic and Environmental Constraints on Aboveground-Belowground Linkages and Diversity across a Latitudinal Gradient in Antarctica  
**PI: B.A. Ball**, Co-PI: D. Van Horn, Senior Personnel: U. Nielsen, Collaborator: P. Convey  
NSF PLR-1341429, 1 October 2014 - 30 September 2018, \$126,110
1. Collaborative Research: Databases for Many Majors: Customizable Visualizations to Improve STEM Learning  
PI: S. W. Dietrich (75%), **Senior Personnel: B. Ball** (5%), C. M. Borror (10%), S. M. Crook (5%), K. Kobjek (5%)

NSF DUE-1431848, 1 September 2014 - 31 August 2017, \$11,149.10 (of \$222,982 total)

### Professional Meeting Presentations and Invited Seminars

Listed presentations are where I was the presenting author. In addition, 9 undergraduate students have presented under my mentorship.

#### National/International

29. **B.A. Ball**, K. Hughes, D. Van Horn, U. Nielsen, P. Convey. Climatic and environmental constraints on aboveground-belowground linkages and diversity across a latitudinal gradient on the Antarctica Peninsula. Scientific Committee on Antarctic Research: Biology Symposium, Leuven, Belgium, July 2017. Oral presentation.
28. **B.A. Ball**, L. Christenson, K. Wickings. Pathways and patterns of plant litter chemistry throughout decomposition. Soil Ecology Society Biennial Meeting, Fort Collins, CO, Jun 2017. Oral presentation.
27. **B.A. Ball**, S.W. Dietrich, D. Goelman. An interactive learning module for teaching ecology students (and professors) about databases for managing and querying large datasets. Soil Ecology Society Biennial Meeting, Fort Collins, CO, Jun 2017. Oral presentation. Ecological Society of America Annual Meeting, Portland, OR, Aug 2017. Poster presentation.
26. **B.A. Ball**, S.J Hall. The impacts of urbanization on soil biogeochemistry and biodiversity in the Sonoran Desert. International Long-Term Ecological Research Network 1<sup>st</sup> Open Science Meeting, Skukuza, South Africa, Oct 2016. Oral presentation.
25. **B.A. Ball**, U.N. Nielsen, D. Van Horn, P. Convey. Plant-soil environment and microbial communities across a latitudinal gradient. Scientific Committee on Antarctic Research Biennial Open Science Conference, Kuala Lumpur, Malaysia, Aug 2016. Oral presentation.
23. **B.A. Ball**, K. Wickings, L. Christenson. Synthesizing the vision for decomposition in the Anthropocene. Ecological Society of America Annual Meeting, Fort Lauderdale, FL, Aug 2016. Oral symposium presentation.
22. **B.A. Ball**, U.N. Nielsen, D. Van Horn, P. Convey. Aboveground-belowground linkages and soil biodiversity across a latitudinal gradient in Antarctica. Ecological Society of America Annual Meeting, Baltimore, MD, Aug 2015. Oral presentation.
20. **B.A. Ball**, J.S. Levy. Water tracks alter biotic and abiotic soil properties and processes in Antarctic soils. Soil Ecology Society Biennial Meeting, Colorado Springs, CO, Jun 2015. Oral presentation.
19. **B.A. Ball**, Y. Carrillo, M. Molina. Litter composition effects on decomposition across the litter-soil interface. Ecological Society of America Annual Meeting, Minneapolis, MN, Aug 2013. Oral presentation.
18. **B.A. Ball**, J. Levy. Hidden hydrology and soil biology: The influence of water tracks on soil biological activity in a polar desert of Antarctica. Soil Ecology Society Biennial Meeting, Camden, NJ, June 2013. Oral presentation.
16. **B.A. Ball**. Effective field data collection in a soils course: Teaching soil ecology in one lab session. On the Cutting Edge Workshop: Teaching Hydrogeology, Soils, Biogeochemistry, and Low-T Geochemistry in the 21<sup>st</sup> Century, Albuquerque, NM, June 2013. "Great Strategies" presentation and discussion.
15. **B.A. Ball**, R. Virginia. Moss nutrient plasticity in desert ecosystems: insights from a hot desert comparison. Long Term Ecological Research (LTER) All-Scientist Meeting, Estes Park, CO, Sep 2012. Poster presentation.
14. **B.A. Ball**, R. Virginia. Moss nutrient plasticity in a polar desert: insights from a hot desert comparison. Ecological Society of America Annual Meeting, Portland, OR, Aug 2012. Oral presentation.

13. **B.A. Ball**, R. Virginia, B. Adams, J. Barrett, D. Wall. Extreme stoichiometry: Nutrient limitation and fertilization in polar desert soils. Ecological Society of America Annual Meeting, Austin, TX, Aug 2011. Oral presentation.
12. **B.A. Ball**, R. Virginia. Permafrost melt seep patches increase heterogeneity of soil geochemistry and therefore habitat suitability. Soil Ecology Society Biennial Meeting, Kelowna, BC, Canada, May 2011. Poster presentation.
11. **B.A. Ball**, R. Virginia. The role of moss as integrators of soil and stream nutrient status in a polar desert. Ecological Society of America Annual Meeting, Pittsburgh, PA, Aug 2010. Oral presentation.
10. **B.A. Ball**, J. Barrett, R. Virginia, D. Wall. Soil biology and biogeochemical cycling under water-pulse events in a polar desert: Responses and mechanisms. International Polar Year Oslo Science Conference, Oslo, Norway, June 2010. *Invited Session Speaker*.
9. **B. Ball**, R. Virginia. The response of soil biogeochemical cycling and microbial stoichiometry to water pulse events in a polar desert. LTER All-Scientist Meeting, Estes Park, CO, Sep 2009. Poster presentation
8. **B.A. Ball**, R. Virginia. Microbial biomass and respiration responses to nitrogen fertilization in a polar desert. Soil Ecology Society Biennial Meeting, Burlington, VT, July 2009. Oral presentation.
7. Y. Carrillo, **B.A. Ball**. Interactions between the legacies of plant litter inputs on soil chemistry and soil communities affect litter and soil organic matter dynamics. Soil Ecology Society Biennial Meeting, Burlington, VT, July 2009. Poster presentation. (2<sup>nd</sup> author, presenter).
6. **B. Ball**, M. Bradford, D. Coleman, M. Hunter, J. Kominoski, C. Pringle. Effects of leaf litter species richness and composition on nutrient turnover and decomposer biota: Consequences of non-random tree species loss for decomposition. Ecological Society of American Annual Meeting, San Jose, CA, Aug 2007. Oral presentation.
5. Y. Carrillo, **B.A. Ball**. Biochemical quality of litter as a driver of detrital community assemblage in mineral soil. Soil Ecology Society Biennial Meeting, Moab, UT, Apr 2007. Poster presentation. (2<sup>nd</sup> author, presenter).
4. **B.A. Ball**, M. Bradford, D. Coleman, M. Hunter, J. Kominoski, C. Pringle. Tree species richness and composition effects on nutrient turnover and decomposer biota in a forested watershed in the southern Appalachians. Soil Ecology Society Biennial Meeting, Moab, UT, Apr 2007. Oral presentation.
3. **B. Ball**, J. Kominoski, M. Hunter, C. Pringle, D. Coleman, M. Bradford. The effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians. Ecological Society of America Annual Meeting, Memphis, TN, Aug 2006. Oral presentation.
2. **B.A. Ball**, J. Kominoski, M. Hunter, C. Pringle, D. Coleman, M. Bradford. The effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians. LTER All-Scientist Meeting, Estes Park, CO, Sep 2006. Poster presentation.
1. **B.A. Ball**, J. Kominoski, M. Hunter, D. Coleman, C. Pringle. The effects of leaf litter species diversity on ecosystem function in a forested watershed. Southeastern Ecology and Evolution Conference, Athens, GA, 2005; Soil Ecology Society Biennial Meeting, Chicago, IL, May 2005; LTER Graduate Student Symposium, Eugene, OR, Apr 2005. Poster presentation.

### Regional

7. **B.A. Ball**, S.J. Hall, H. Heavenrich, J. Ripplinger. Long-term Patterns in Land Use and Soil Properties across the CAP LTER Ecosystem. CAP-LTER All-Scientist Meeting, Scottsdale, AZ, Jan 2017.
6. **B.A. Ball**, K. Wickings, L. Christenson. Pathways and patterns of litter chemistry during decomposition. Hubbard Brook Cooperator's Meeting, Jul 2016, Thornton, NH. Oral presentation.

5. **B.A. Ball**, S.J. Hall, J. Ripplinger. Influence of climate, plant communities, and land-use on long-term patterns of soil properties in the CAP LTER ecosystem. CAP-LTER All-Scientist Meeting, Scottsdale, AZ, Jan 2016.
4. **B.A. Ball**. Stoichiometry and soil CO<sub>2</sub> flux. McMurdo All-Science Meeting, Chicago, IL, June 2008. Oral presentation.
3. **B. Ball**, J. Kominoski, M. Hunter, D. Coleman, C. Pringle. The effects of leaf litter species diversity on decomposition in a riparian zone in the southern Appalachians. UGA Institute of Ecology Graduate Student Symposium, Athens, GA, Jan 2005. Oral presentation.
2. **B. Ball**. Site review of graduate research at Coweeta LTER, North Carolina. LTER Graduate Student Symposium, Eugene, OR, Apr 2005. Oral presentation.
1. **B. Ball**, J. Kominoski, M. Hunter, D. Coleman, C. Pringle. The effects of leaf litter species diversity on decay rate, microbial and faunal identity and biomass, and chemical composition in a riparian zone and its associated stream in the southern Appalachians. Dave Coleman retirement symposium, Athens, GA, Oct 2005. Poster presentation.

#### Invited seminars

4. **B. Ball**. Aboveground-belowground connections in Antarctic soil ecosystems. Portland State University Lester Newman Seminar Series, Portland, OR, May 2015.
3. **B. Ball**. The influence of meltwater pulses on soil biology and biogeochemistry in a polar desert of Antarctica. ASU Tempe Hugh Hanson Ecology and Evolution Seminar Series, Tempe, AZ, Feb 2013.
2. **B. Ball**. Extreme biogeochemistry: the influence of water-pulse events in polar desert soils of Antarctica. ASU Polytechnic Applied Sciences Seminar Series, Mesa, AZ, Jan 2013.
1. **B. Ball**. Cross-site synthesis: Using terrestrial-aquatic linkages to form graduate student linkages. LTER Graduate Student Symposium, Estes Park, CO, Sep 2009. Invited session speaker.

#### Workshops and Working-groups Co-Chaired

- All Creatures Great and Small: Synthesizing critter control of nutrient dynamics across the LTER network. Working group at the Long-Term Ecological Research (LTER) Network All-Scientist meeting, Estes Park, CO, Sep 2015. Co-chairs L. Christenson and B. Ball. Planned product: synthesis paper for peer-reviewed publication
- Changes in litter chemistry during decomposition: pathways and patterns. Working group at the Long-Term Ecological Research (LTER) Network All-Scientist Meeting, Estes Park, CO, Sep 2012. Co-chairs B. Ball and K. Wickings. Product: research grant proposal to NSF-DEB (funded)
- Approaches for advancing scientific understanding of macrosystems. Working group from Macrosystems Biology PI meeting, Boulder, CO, Mar 2012. Co-leads B. Ball and O. Levy. Product: manuscript presenting characteristics, challenges, and examples of macrosystems ecology methodology for a special issue of *Frontiers in Ecology & the Environment*. (Levy, Ball, et al. 2014.)
- Linkages between terrestrial structure and aquatic function: a cross-site synthesis. Follow-up workgroup to the 2006 LTER ASM workshop, Kellogg Biological Station, MI, Apr 2007. Co-chairs B. Ball and J. Kominoski. Product: manuscript presenting conceptual framework for considering terrestrial-aquatic linkages in the context of global change (Ball et al. 2010. *BioScience* 60: 590-601).
- Changes in terrestrial-aquatic resource subsidies during species declines. LTER All-Scientist Meeting, Estes Park, CO, Oct 2006. Co-chairs B. Ball and J. Kominoski. Product: proposal for follow-up workgroup (funded).

### Appointments, Elected positions, Recognition, and Awards

2018: Outstanding Undergraduate Mentor 2017-2018, New College of Interdisciplinary Arts & Sciences, ASU

2018-present: Affiliate, Global Drylands Center

2017-present: Co-Lead, Fluxes & Flows Interdisciplinary Research Team (IRT), Central Arizona-Phoenix Long-Term Ecological Research (CAP-LTER)

2015-2017: Secretary, Soil Ecology section of the Ecological Society of America

2015: Outstanding Teaching-T/TT Faculty 2014-2015, New College of Interdisciplinary Arts & Sciences, ASU

2014-present: Affiliated Faculty, Center for Biodiversity Outcomes, Arizona State University

2014-2017: Secretary, Soil Ecology Society

2011-present: Senior Sustainability Scientist, Global Institute of Sustainability, Arizona State University

2011-present: Barrett Honors Faculty, Arizona State University

Manuscript reviewer for *Arctic Antarctic and Alpine Research*, *Antarctic Science*, *Basic and Applied Ecology*, *Biology and Fertility of Soils*, *Ecological Applications*, *Ecological Engineering*, *Ecology*, *Ecosphere*, *Ecosystems*, *European Journal of Soil Science*, *FEMS Microbiology Ecology*, *Forest Ecology & Management* (Recognized Reviewer), *Frontiers in Ecology and the Environment*, *Functional Ecology*, *Geoderma*, *Geophysical Research Letters*, *Global Change Biology*, *Journal of Arid Environments*, *Journal of Plant Nutrition and Soil Science*, *Journal of Urban Ecology*, *Land Degradation & Development*, *Marine & Freshwater Research*, *Nature Communications*, *Oecologia*, *Oikos*, *Pedobiologia*, *Pedosphere*, *Plant and Soil*, *PLoS ONE*, *Polar Biology*, *Polar Research*, *Proceedings of the Royal Society B*, *Rangeland Ecology and Management*, *Restoration Ecology*, *Science of the Total Environment*, *Scientific Reports*, *Soil Biology & Biochemistry*, *Soil Science Society of America Journal*

Grant proposal reviewer for *Israel Science Foundation*, *Italian Scientific Committee for Antarctic Research*, *National Science Foundation*, *Netherlands Organisation for Scientific Research*, *Swiss National Science Foundation*, *Chilean Antarctic Institute (INACH)*

2002-present: Phi Beta Kappa National Honor Society

### Society Memberships

Ecological Society of America (Biogeosciences and Soil Ecology sections)

Soil Ecology Society