

# BRETT A. HUGGETT

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Associate Professor, Biology Department, Bates College  
44 Campus Ave  
Lewiston, ME 04240  
207-786-8276

## EDUCATION

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**Harvard University, Ph.D.**, Organismic and Evolutionary Biology, Cambridge, MA, May 2013.

Adviser: Dr. N. Michele Holbrook.

**University of Vermont, M.S.**, Natural Resources: Forestry, Rubenstein School of Environment and Natural Resources, Burlington, VT, 2006. Adviser: Dr. Paul Schaberg.

**Temple University, B.M.**, Jazz Studies/Performance, Esther Boyer College of Music, Philadelphia, PA, 1994.

## PROFESSIONAL APPOINTMENTS

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**Bates College**, Lewiston, ME

*Assistant Professor*, Plant Physiology, 2014 – Present.

**Harvard University**, Cambridge, MA

*Postdoctoral Researcher*, June 2013 - June 2014, Adviser: Dr. Andrew Richardson.

## REFEREED PUBLICATIONS (\*denotes Bates student co-author)

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Bouda, M., B. A. Huggett, K. A. Prats, J. W. Wason, J. P. Wilson and C. R. Brodersen. 2022. Hydraulic failure as a primary driver of xylem network evolution in early vascular plants. *Science* 378 (6620): 642-646.

Furze, M.E., D.K. Wainwright, B.A. Huggett, T. Knipfer, A.J. McElrone, and C.R. Brodersen. 2021. Ecologically driven selection of nonstructural carbohydrate storage in oak trees, *New Phytologist*.

McIntire, C.D., B.A. Huggett, Emma Dunn\*, I.A. Munck, M.A. Vadeboncoeur, H. Asbjornsen. 2021. Pathogen-induced defoliation impacts on transpiration, leaf gas exchange, and non-structural carbohydrate allocation in Eastern white pine (*Pinus strobus*), *Trees: Structure and Function*, 35(2), 357-373.

Furze, M.E., B.A. Huggett, M. Wieringa, E. Aubrecht, M.S. Carbone, X. Xiaomei, C. Czimczik, and A.D. Richardson. 2020. Seasonal fluctuation in nonstructural carbohydrates within tree organs reveals the metabolic availability of older stemwood reserves. *Tree Physiology*, 40(10), 1355-1365.

Wason, J.W., C.R. Brodersen, and B.A. Huggett. 2019. The functional implications of the presence or absence of intervessel connections across growth rings of four northern hardwood trees. *Annals of Botany*. 124.2, 297-306.

Furze, M.E., B.A. Huggett, E. Aubrecht, C. Stolz, M.S. Carbone, A.D. Richardson. 2018. Whole-tree nonstructural carbohydrate budgets and seasonal dynamics in five temperate species. *New Phytologist*, 221.3, 1455-1477.

Wason, J.W., K. Anstreicher, N. Stephansky\*, B.A. Huggett, C.R. Brodersen. 2018. Hydraulic safety margins and segmentation in roots, trunks, branches, and petioles of four northern hardwood trees.

*New Phytologist*, 219.1: 77-88.

- Huggett, B.A., and J.A. Savage, G.Y. Hao, E.L. Preisser, and N.M. Holbrook. 2018. Impact of hemlock woolly adelgid (*Adelges tsugae* Annand) infestation on xylem structure and function and leaf physiology in eastern hemlock (*Tsuga canadensis* (L.) Carrière). *Functional Plant Biology*, 45, 501-508.
- Magellan, T.M., M.P. Griffith, A. Ricciardi\*, B.A. Huggett, and P.B. Tomlinson. 2018. A novel type of fiber in the leaves of the cycad *Dioon*. *International Journal of Plant Sciences*, 179, 231-240.
- Tomlinson, P.B., A. Ricciardi\*, and B.A. Huggett. 2017. Cracking the Omega code: hydraulic architecture of the cycad leaf axis. *Annals of Botany*, 121, 483-488.
- Wason, J.W., B.A. Huggett, C.R. Brodersen. 2017. MicroCT imaging as a tool to study vessel endings *in situ*. *American Journal of Botany*, 104(9): 1424-1430.
- Magellan T.M., P.B. Tomlinson, B.A. Huggett. 2015. Stem anatomy in the spiny American palm *Bactris* (Arecaceae-Bactridinae), *Hoehnea*, 42(3): 567-579.
- Richardson, A.D., M.S. Carbone, B.A. Huggett, M.E. Furze, C.I. Czimeczik, J.C. Walker, X. Xu, P.G. Schaberg, and P. Murakami. 2015. Distribution and mixing of old and new nonstructural carbon in two temperate trees, *New Phytologist*, 206.2: 590-597.
- Wheeler, J.K., B.A. Huggett, A.N. Tofté, F.E. Rockwell, and N.M. Holbrook. 2013. Cutting xylem under tension or supersaturated with gas can generate PLC and the appearance of rapid recovery from embolism. *Plant, Cell and Environment* 36 (11): 1938-1949.
- Giraldo, J.P., J.K. Wheeler, B.A. Huggett, and N.M. Holbrook. 2013. The role of leaf hydraulic conductance dynamics on the timing of leaf senescence. *Functional Plant Biology* 41 (1): 37-47.
- Tomlinson, P.B., and B.A. Huggett. 2012. Cell longevity and sustained primary growth in palm stems. *American Journal of Botany* 99 (12): 1891-1902.
- Tomlinson, P. B., and B.A. Huggett. 2011. Partial shoot reiteration in *Wollemia nobilis* (Araucariaceae) does not arise from 'axillary meristems'. *Annals of Botany* 107: 909-916.
- Huggett, B.A., and P.B. Tomlinson. 2010. Aspects of vessel dimensions in the aerial roots of epiphytic Araceae. *International Journal of Plant Sciences* 171: 362-369.
- Huggett, B.A., P.G. Schaberg, G.J. Hawley, and C. Eagar. 2007. Long-term calcium addition increases growth release, wound closure, and health of sugar maple (*Acer saccharum*) trees at the Hubbard Brook Experimental Forest. *Canadian Journal of Forest Research* 37: 1692-1700.

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#### **PUBLICATIONS IN REVIEW OR PREPARATION (\*denotes Bates student co-author)**

Huggett, B.A. and I. Curtis. Coastal Forests in a Warming World. *In prep.*

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#### **TEACHING EXPERIENCE**

**Bates College**, Lewiston, ME

Evolution and Interactions of Life, BIO 206, Fall 2022.

Lab-based Biological Inquiry: Life of a Forest, BIO 195J, Winter 2021.

Biological Research Experience: Molecules to Ecosystems, BIO 204, Winter 2021.

Plant Physiology, BIO 380, Fall 2020, 2018, 2016 and 2014, Curriculum included Community Engaged Learning<sup>1</sup>

Plant and Fungal Diversity, BIO 221, Winter 2020 and 2016.

Dendrology and the Natural History of Trees, BI/ES 271, Fall 2019, 2017, 2015.

Independent Study in Botanical Histochemistry, two students, Short Term 2019.

Organismal Biology, BIO 190, Winter 2019, 2017, and 2015.

Plants and Human Affairs, BIO 124, Fall 2017

The North Woods, BIO s37, Short Term 2017, 2015, Curriculum included Purposeful Work Infusion<sup>2</sup> and Community Engaged Learning<sup>1</sup>.

The Natural History of Maine's Neighborhoods and Woods, First Year Seminar<sup>3</sup>, FYS 454, Fall 2016, Curriculum included Community Engaged Learning<sup>1</sup>.

Junior Seminar, BIO 460, Winter 2016, Curriculum included Purposeful Work Infusion.

Plants and Human Affairs, BIO 117, Fall 2015.

### **Harvard College, Cambridge, MA**

*Teaching Fellow*, Trees, Forests, and Global Change, SLS 25, Spring 2013.

*Teaching Fellow*, Plants and Human Affairs, OEB 59, Fall 2010 and 2012.

*Teaching Fellow*, Topics in Organismic and Evolutionary Biology, OEB 399, Fall 2011, Spring 2012.

*Teaching Fellow*, Biology of Plants, OEB 52, Spring 2011.

*Teaching Fellow*, Biology of Trees and Forests, Science B-40, Spring 2009.

*Teaching Fellow*, Feeding the World; Feeding Yourself, Science B-64, Spring 2008.

*Teaching Fellow*, Foundations of Biological Diversity, OEB 10, Fall 2007.

*Course Development*, Assisted in the development of course content such as laboratory exercises, exams, and readings. Courses: Science B-40 (Spring 2009), Science B-64 (Spring 2008), OEB 10 (Fall 2007)

### **Harvard University, Harvard Extension School, Cambridge, MA**

*Lecturer*, Trees and Forests in New England, Bios E-120, Spring 2012, 2013 and 2014. Co-taught in 2012 and 2013 with Donald Pfister, Ph.D., Interim Dean of Harvard College.

*Teaching Fellow*, Introduction to Molecular and Cellular Biology, Bios E-1a, Fall 2009, 2010, 2011, 2012, 2013.

*Teaching Fellow*, Introduction to Organismic and Evolutionary Biology, Bios E-1b, Spring 2010, 2011, 2012, 2013, 2014.

*Course Assistant*, Woody Plants and New England Forests, Bios E-146, Spring 2007 and 2010.

### **University of Vermont, Burlington, VT**

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<sup>1</sup> Course content that enables students to partner with the community in research and/or education projects.

<sup>2</sup> Through the Purposeful Work Infusion Project, faculty members explicitly connect course content to discussions of meaning, purpose, work and/or careers.

<sup>3</sup> Academic program designed for first-year students to establish an introduction to college-level writing, academic advising, and community of support throughout the college.

*Teaching Assistant, Dendrology, FOR 21, Fall 2005.*

## **PROFESSIONAL TRAINING AND PEDAGOGICAL DEVELOPMENT**

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**Inclusive STEM Teaching Project**, On-line 6-week course designed to advance the awareness, self-efficacy, and the ability of faculty, postdocs, and doctoral students to cultivate inclusive STEM learning environments for all their students and to develop themselves as reflective, inclusive practitioners, May 2022

**Dendrochronology Intensive Summer Course – Online**, Laboratory of Tree-Ring Research, University of Arizona, June 2021

**7 June - 18 June, 2020 CURE Workshop**, Teaching CUREs in the time of COVID-19 webinar, CUREnet, The American Society for Cell Biology, and CBE - Life Sciences Education, June 18<sup>th</sup>, 2020

**CBB Pedagogy Matters May Institute on Remote Teaching**, Virtual Conference, May, 2020

**How to Flip Your Class Online Webinar**, Eric Mazur, April, 2020

**Software Carpentry: R for Reproducible Scientific Analysis**, Bates College, Lewiston, ME, 2019

**Gordon Research Conference**, Undergraduate Biology Education Research, Lewiston, ME, 2019

**Gordon Research Conference**, Multiscale Plant Vascular Biology, Sunday River, ME, 2018, 2016

**Purposeful Work Infusion**, BIO s37, Bates College, Lewiston, ME, 2017 and 2015

**LI-COR LEEF Training Course**, LI-COR, Lincoln NB, 2016

**Purposeful Work Infusion**, BIO 460, Bates College, Lewiston, ME, 2016

**Faculty Commons Programming**, Bates College, Lewiston, ME

- Creating Learning Objectives for Your Courses, September 2016
- Teaching Triangles, Winter 2016 and 2015
- Thesis Advising Seminar, Hosted by Misty Beck, Winter 2015
- Discussion on Inquiry-Based Learning with Sampson Lecturer, Michael Starbird, Fall 2015

**STEM Professional Development Workshop**, Bates College, Lewiston, ME, 2014-2015

**Public Speaking Workshop**, Nancy Houfek, Head of Voice & Speech, A.R.T of Harvard University, 2012

**Bok Center Fall Teaching Conference**, Bok Center for Teaching and Learning, Harvard University, 2009

## **UNDERGRADUATE TUTORING AND MENTORING EXPERIENCE**

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**Bates College**, Lewiston, ME

*Senior Thesis Adviser*

AY 2021-21: Emma Proietti '21, Alex Bickart '21, and Cole Fuller '21.

AY 2019-20: Danielle Ward '20, Nathaniel Reed '20, Ronni Mak '20, and Joshua Turner '20.

AY 2018-19: Ruth van Kampen '19, Niamh Micklewhite '19, and Elly Bengtsson '19.

AY 2017: Paige Guevarra '18 and Samantha Reiss '18

AY 2016-17: Emma Dunn '17, Isobel Curtis '17, Nathan Stephansky '17, and Alison Riccardi '17.

AY 2015-16: Julia Fisher '16 and Rebecca Leloudis '16.

AY 2014-15: Erica Gagnon '15

### *Research Assistantship Mentor*

AY 2016-17: Ruth van Kampen '19, supported with NSF Funding.

AY 2015-16: Emma Dunn '17 and Nathan Stephansky '17, supported with Bates Faculty Development Fund.

Emma Katz '17 and Julia Szeto '17, supported with Start Up Funds.

### *REU Mentor at Harvard Forest*

Summer 2018: Ruth Van Kampen '19, Harvard Forest, Petersham, MA.

Summer 2016: Nathan Stephansky '17, Harvard Forest, Petersham, MA.

Summer 2015: Julia Fisher '16, Harvard Forest, Petersham, MA.

### *Summer Research Assistant Mentor*

Summer 2020: Alex Bickart '21, supported with Bates STEM Funding.

Summer 2018: Niamh Micklewhite '19, supported with Bates Sherman Fairchild Funding.

Summer 2017: Samantha Reiss '18, supported with Bates Sherman Fairchild Funding.

Paige Guevarra '18, supported with NSF-IOS 1557917

Summer 2016: Emma Dunn '17, supported with Bates Sherman Fairchild Funding.

Isobel Curtis '17, supported with Bates STEM Funding.

Summer 2015: Emma Dunn '17, supported with Bates STEM Funding.

### **Eliot House, Harvard College, Cambridge, MA**

*Resident Tutor*, July, 2008 – 2014

### **Eliot House, Harvard College, Cambridge, MA**

*Non-Resident Tutor*, Sept. 2007 – July 2008

### **Harvard Forest, Harvard University, Cambridge, MA**

*Research Mentor*, Summer 2008 and 2012

### **Harvard University, Cambridge, MA**

*Research Mentor*, Summer 2009

### **University of Vermont, Burlington, VT**

*Research Mentor*, Fall 2004 to Spring 2006

## **GRANT APPLICATIONS AND FUNDING SUPPORT**

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### **NSF, Division of Integrative Organismal Systems**

- March 2016 to April 2020, Funded, NSF-IOS 1557917, \$647,836, Collaborative Research: Structure and function of whole-tree 3D xylem networks in response to past, present, and future drought. Co-PIs Huggett and Brodersen (Yale University).
- January 2017, Preliminary Proposal Submitted, Collaborative Research: RUI: Examining Spruce Responses to Parasitic Dwarf Mistletoe: The Divergent Fates of Infected Branches and Whole Trees in Two Co-occurring Hosts. PI Barry Logan (Bowdoin College), Co-PI Huggett, Des Marais (Harvard University), Reblin (Bowdoin College), Emery (Trent University), not invited to submit full proposal.
- January 2017, Preliminary Proposal Submitted, Collaborative Research: Comparative developmental studies in the early seed plant order Cycadales (cycads), based on living stock collections, PI Patrick Griffith (Montgomery Botanical Center), Co-PI Huggett, Magellan (Montgomery Botanical Center), and Tomlinson (Harvard University), not invited to submit full proposal.
- January 2016, Preliminary Proposal Submitted, Collaborative Research: RUI: Examining divergent host spruce responses to parasitic dwarf mistletoe infection. PI Barry Logan (Bowdoin College), Co-

PI Huggett, Des Marais (Harvard University), Magney (NASA), Reblin (Bowdoin College), not invited to submit full proposal.

- January 2015, Preproposal Submitted, Collaborative Research: Structure and function of whole-tree 3D xylem networks in response to past, present, and future drought. Co-PIs Huggett and Brodersen (Yale University), invited to submit full proposal.

### **NSF, Division of Environmental Biology**

- January 2017, Preliminary Proposal Submitted, Sensitivity of mesic temperate forests to novel precipitation extremes: integrating experimental manipulations with cross-site synthesis. PI Heidi Asbjornsen (U. of New Hampshire), Co-PI: Vadeboncoeur, Campbell, and Rustad; Other Personnel: Huggett, McDowell, Phillips, and Smith, not invited to submit full proposal.

### **Harvard Forest REU Position, Petersham, MA**

My participation as a mentor in this REU program afforded Bates College students the following research opportunities and funding:

- Summer 2018, funding provided by Harvard Forest in the form of room and board (coupled with the salary support from the *STEM Faculty-Student Summer Research Award*) for Ruth van Kampen '18 to work on research project titled, "Structure and function of New England forest trees: Predicting future forest composition by looking back in time."
- Summer 2016, funding provided by Harvard Forest including room and board plus \$5000 stipend for Bates College student Nathan Stephansky '17 to work on research project titled, "Structure and function of New England forest trees: Predicting future forest composition by looking back in time."
- Summer 2015, funding provided by Harvard Forest including room and board plus \$5000 stipend for Bates College student Julia Fisher '16 to work on research project titled, "Structure and function of New England forest trees: Predicting future forest composition by looking back in time."

### **Northeastern States Research Cooperative**

- January 2016, Invited Full Proposal Submitted, Refining model-based approaches to adaptive silvicultural management, PI Coble (U. of New Hampshire), Co-PI Huggett, Co-PI Asbjornsen (U. of New Hampshire), Vadeboncoeur (U. of New Hampshire), \$89,553, not funded.
- October 2015, Preproposal Submitted, Refining model-based approaches to adaptive silvicultural management, PI Coble (U. of New Hampshire), Co-PI Huggett, Co-PI Asbjornsen (U. of New Hampshire), Vadeboncoeur (U. of New Hampshire), invited for full proposal.
- January 2015, Invited Full Proposal Submitted, Impacts of pathogen-climate change interactions on white pine health and mortality in the Northeastern U.S, PI Asbjornsen (U. of New Hampshire), Co-PI Huggett, Co-PI Broders (U. of New Hampshire), \$117,067, not funded.
- October 2014, Preproposal Submitted, Evaluating the mechanisms of white pine needle disease: Identification of fungal pathogens and their impacts on growth, health and productivity of white pine (*Pinus strobus*) in the Northern Forest, PI Huggett, Co-PI Halman (U. of Vermont), \$89,624, not invited for full proposal.

### **Course Hero-Woodrow Wilson Fellowship for Excellence in Teaching**

- April 2018, grant to support mentoring of Bates students in developing virtual 3D images of plant anatomical structures for education, \$33,623, not funded.

### **Beckman Scholar Program**

- May 2016, contributed mentor plan in the Bates College application for the Beckman Scholar Program, not funded.

### **Bates College, Lewiston, ME**

#### *Phillips Faculty Fellowship Award*

- 2021-22, funding to support full-year sabbatical based on scholarship and development.

### *STEM Faculty-Student Summer Research Award*

- 2020, \$2,250 to support Alex Bickart '21 to complete research remotely; project titled, "Monitoring Changes in Lichen Diversity at Bates-Morse Mountain Conservation Area Over a 37-year Period."
- 2018, \$10,420 to support Bates student in the Harvard Forest REU Program to work under my mentorship on project titled, "Structure and function of New England forest trees: Predicting future forest composition by looking back in time."
- 2016, \$4,736 to support Isobel Curtis '17 to work on research project titled, "Forest composition and succession at Bates Morse Mountain Conservation Area in response to the pathogenic insect hemlock woolly adelgid."
- 2015, \$4,736 to support Emma Dunn '17 to work on research project titled, "The impact of hemlock woolly adelgid infestation on sugar and starch reserves in eastern hemlock trees."

### *Bates Faculty Development Grant*

- 2019, \$5027 to support research project titled, "Diversity, distribution, and functionality of fungal endophytes associated with pitch pine (*Pinus rigida*).
- 2015, \$9000 to support research project titled, "Impact of white pine needle disease on growth, health, and productivity of white pine (*Pinus strobus*) in the Northern Forest."

### *Sherman Fairchild Summer Research Grant*

- 2018, \$6346 to support Niamh Micklewhite '19 to work on research project titled, "Exploring the three-dimensional architecture of vascular networks in cycad leaves."
- 2017, \$3,789 to support Samantha Reiss '18 to work on research project titled, "Phenotypic plasticity, photosynthesis, and carbon budgeting in pitch pine (*Picea rigida*) growing across a wide range of environmental gradients."
- 2016, \$5737 to support Emma Dunn '17 to work on research project titled, "The impact of hemlock woolly adelgid infestation on sugar and starch reserves in eastern hemlock trees."

### *Harvard Center Faculty Discretionary Grants*

- 2016, financial support to host AP Biology class from Edward Little High School, Auburn, ME as part of the Community Engaged Learning in BIO 380, 2016.
- 2015, \$200 to support publication of self-guided natural history tour of Bates-Morse Mountain Conservation Area completed by students enrolled in BIO s37.

### **LI-COR, Lincoln, NB**

#### *LI-COR Environmental Education Fund (LEEF) Grant*

- 2014, \$23,994 from LI-COR to be used toward the purchase of the LI-COR 6400xt Portable Photosynthesis System, LEEF Bud Package.

### **Harvard University, Cambridge, MA**

#### *Graduate Research Grant, Fall 2007 – Spring 2009.*

- Interdisciplinary Graduate Education and Research Training (IGERT) Ph.D. Program in Biomechanics, Harvard University and The National Science Foundation.

### **Bates Student Grants Received With My Support**

#### *Rocky Mountain Bio REU Travel Grant, Rocky Mountain Biological Laboratory, Crested Butte, CO*

- Nathan Stephansky '17, 2016, \$1000 in travel support for Nathan Stephansky's presentation at the CUR Research Experiences for Undergraduates Symposium, research conducted in HF-REU program and as a senior thesis student.

#### *Bates Student Research Fund Grant, Bates College, Lewiston, ME*

- Isobel Curtis '17, 2016, \$300, Forest Composition and Eastern Hemlock Physiology at Bates-Morse Mountain Conservation Area in Response to a Pathogenic Insect Hemlock Woolly Adelgid.

- Emma Dunn '17, 2016, \$330, The Effect of Two Biotic Stressors on Carbon Allocation in Two Coniferous Trees.
- Erica Gagnon '15, 2014, \$800, Impact of Hemlock Woolly Adelgid (*Adelges tsugae* Annand) Infestation on the Distribution of Nonstructural Carbon in Eastern Hemlock (*Tsuga Canadensis* (L.) Carrière)

*Bates STEM Travel Fund*, Bates College, Lewiston, ME

- Isobel Curtis '18, 2018, \$765, travel support to present at the Northeast Natural History Conference.
- Samantha Reiss '18, 2018, \$455, travel support to present at the Northeast Natural History Conference.
- Nathan Stephansky '17, 2016, \$960, travel support for Nathan Stephansky's presentation at the CUR Research Experiences for Undergraduates Symposium, declined due to obtaining external funding stated above.

## **AWARDS and APPOINTMENTS**

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**Harvard University Extension School**, Cambridge, MA

*Dean Shinagel Exceptional Teaching Assistant Award*, Spring 2014

**Harvard University**, Cambridge, MA

*Six-time Recipient of the Certificate of Distinction in Teaching, Derek Bok Center for Teaching and Learning.*

- Trees, Forests, and Climate Change, SLS 25, Spring 2013.
- Topics in Organismic and Evolutionary Biology, OEB 399, Fall 2011 and Spring 2012.
- Biology of Plants, OEB 52, Spring 2011.
- Biology of Trees and Forests, Science B-40, Spring 2009.
- Foundations of Biological Diversity, OEB 10, Fall 2007.

**Annual Meeting of the Botanical Society of America**, Snowbird, Utah

*Physiological Section Best Student Poster*, Annual Meeting of the Botanical Society of America, Poster Session, August 2009.

**The New England Outdoor Writers Association**, Bridgewater, MA

*Honorable Mention*, The New England Outdoor Writers Association Scholarship Award, 2005.

**Temple University**, Philadelphia, PA

Dean's List, *magna cum laude*.

*Jazz Performance Grant*, Esther Boyer College of Music, 1992 and 1993.

## **SERVICE TO BATES COLLEGE**

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Committee on Faculty Governance, Sept. 2022 – Present

Chair of Search Committee, 2022, Associate Professor in Biology

Bates-Morse Mountain Conservation Area Faculty Advisory Committee, Faculty Member, Sept. 2015 – Present

College-wide Working Group on Financial Response to Covid-19, April 2020 – Present

Committee on Faculty Scholarship, Sept. 2018 – May 2021.

Committee on Teaching and Learning, Elected Chair for 2019-2021, Committee Member in 2016-2021.

Study Abroad Adviser, Biology Department, Sept. 2018 – May 2021.

Retirement Planning Investment Committee, Sept. 2016 – May 2021.



Committee on NEASC Reaccreditation, co-chair, Sept. 2018 – 2020.

Member of the Biology Search Committee, 2019, Developmental Biology, Visiting Assistant Professor.

Bobcat First!, Faculty Participant, August 2015 – May 2021. This Program seeks to foster a greater sense of well-being, belonging, and self-empowerment among first generation to college students.

Member of the Search Committee, 2019, Director of Bates Morse Mountain Conservation Area.

STEM Diversity Initiative Committee, Dec. 2016 – 2019. The goal of this mission is to develop a comprehensive, multi-year program in the STEM fields designed to support the success of students from underrepresented groups.

Panel Member, “My Favorite Writing Assignment”, Academic Resource Commons, Feb. 2019

Sports Liaison, Baseball, May 2015 – 2019

Panel Member, FCLT Commons Program, Teaching First Year Students, Jan. 2017

Green Dot Training, Fall 2016. A program focused on bystander intervention in creating a safe community.

Member of the Biology Search Committee, 2016, Neurobiologist, Tenure Track

Bates Biology Student Group Helicase, Faculty Coordinator of Field Work, May 2016

Student Research Committee, Faculty Member, January 2016 – May 2016

Moderator for Mt. David Summit, April 2016

Master Class for Admitted Students, Faculty Presenter, April 2016

Committee on Teaching Evaluations, Faculty Member, August 2015 – June 2016

Organized Biology Departmental Seminar Series (a component of BIO 460), Winter 2016

Member of the Biology Search Committee, 2015, Functional Morphologist, Tenure Track

Volunteer Tree Tour of Bates Campus, Professor Baker’s FYS course, Sept. 2015

BatesReach Software Evaluator, July and August 2015

Bates Enrichment Week, June 2015

- Offered workshop on tree identification and natural history.

Member of the Biology Search Committee, 2014, Plant Ecologist, Tenure Track

Panelist, Office of Intercultural Education, March 2015

- Served as panelist for student-run “My Story Event” to discuss my own career path and experiences.

## **PROFESSIONAL SERVICES and OUTREACH**

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Ad Hoc Reviewer, NSF, 2022

Invited Presenter, *The Impact of Drought on New England Trees*, Stanton Bird Club, Lewiston, ME, April 2019.

Harvard Forest Research Experience for Undergraduate Program, Petersham, MA

Research Mentor, 2008, 2012, 2015, 2016, and 2018

- Served as research mentor for one to two students (with at least one from Bates College in 2015, 2016, and 2018) each summer during the 11-week REU program.

Invited Panelist, Mentor/Career Panel, Multiscale Plant Vascular Biology Gordon Research Conference and Seminar, June 2018.

Invited Panelist, Alumni Career Panel, Organismal and Evolutionary Biology, Harvard University, Cambridge, MA, March 2018.

Invited Reviewer, Ecology (2022); Scientific Reports, Nature (2020; 2018); Science of the Total Environment (2020), Trees – Structure and Function (2020, 2017, 2011), Princeton Press (2020), IAWA (2019), Forestry: An International Journal of Forest Research (2019), Tree Physiology (2018), International Journal of Plant Sciences (2018); Biogeosciences (2016), Canadian Journal of Forest Research (2016), Ecology and Evolution (2014), New Phytologist (2016), Physiologia Plantarum (2012), Plant Cell and Environment (2011, 2012).

Doctoral Committee Member, University of New Hampshire, Durham, NH  
Cameron McIntire (PhD Candidate), 2016 – 2018.

Panel Review Member, Forest Service Research Scientist Evaluation, June 2017

Bates Harward Center for Community Partnerships

- SPARKS Program, Lewiston, High School, Lewiston, ME, Spring 2017, Facilitated collaboration between Bates students and Lewiston High School Teacher to how 45 high school students at Thorncrag Bird Sanctuary to explore forestry science.
- Geiger Elementary School, Lewiston, ME, Fall 2016, Facilitated collaboration between Bates First Year Students and Geiger Elementary 3<sup>rd</sup> Grade teacher Mr. Leaver in writing and leading natural history lesson plans for 20 students.
- Edward Little High School, Auburn, ME, Fall 2016, Organized Bates BIO 380 students hosting 12 AP Biology students to instruct them in plant physiology research and concepts.
- Gulf of Maine Research Institute, May 2015, Facilitated Bates Students in contributing to the outreach efforts of the Gulf of Maine Research Institute by producing Species ID Cards to be used by citizen scientists.
- Bates-Morse Mountain Conservation Area, Phippsburg, ME, 2015, Facilitated Bates Students in updating a self-guided natural history tour publication for Bates-Morse Mountain Conservation Area
- Bates-Morse Mountain Conservation Area, Phippsburg, ME, 2015, Facilitated Bates Students in led a tree identification workshop for students of the Phippsburg Elementary School.

Maine Master Naturalist Program, Lewiston, ME, December 2014

- Educated naturalists and citizen scientists in forest ecology and dendrology.

Massachusetts Audubon Society, Drumlin Farm Sanctuary, Lincoln, MA, January 2013

- Provide Audubon naturalists with training in the field of Winter Ecology.

Harvard University, The Crimson Summer Academy, Cambridge, MA, Summer 2012

- Assisted as Teaching Fellow with course instruction and laboratory exercises in molecular biology for 30 high school students from Boston and Cambridge engaged in a program to prepare them for college and beyond.

Lincoln Land Conservation Trust, Lincoln, MA, 2007

- Provided educational programs on native plants and wildlife.

Mad River Glen, Waitsfield, VT, December 2005 – March 2006

- Taught field-based programs on the ecology and conservation of alpine environments.

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## **SUPPORTING EQUITY AND INCLUSION**

Attended Webinar on Inclusive Teaching Practices in STEM Education, presented by Bryan Dewsbury and Carrie Diaz Eaton, April, 2020.

Attended Talk as part of the Bryan Dewsbury Workshop on Inclusive Pedagogy, HHMI Sponsored, December 2019.

HHMI Context Diversity Workshop, Bates College, Lewiston, ME, 2019

Bobcat First!, Faculty Participant, Bates College, Lewiston, ME, August 2015 – Present

- Office of Intercultural Education program to support first generation college students.

Bates College STEM Faculty Racial Equity Training, Hackman Consulting Group, participant, 2018.

Panelist, Office of Intercultural Education, Bates College, Lewiston, ME, March 2015

- Served as panelist for student-run “My Story Event” to discuss my own career path and experiences.

Supporting First Generation to College Students Dinner, Bates College, Lewiston, ME, Fall 2014

### **INVITED PRESENTATIONS**

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B.A. Huggett, Maine Tree Identification and Climate Change, Maine Conservation Voters, Virtual Seminar, May 22, 2021.

B.A. Huggett, Structure and Function of Three-Dimensional Water Transport Networks in New England Trees Experiencing Drought, University of Maine – Orono, November 9<sup>th</sup>, 2018.

B.A. Huggett, Structure and Function of Whole-tree 3D Xylem Networks in Response to Past, Present, and Future Drought, Invited Speaker, Bowdoin College, Brunswick, ME, October 11<sup>th</sup>, 2017.

B.A. Huggett, Structure and Function of Whole-tree 3D Xylem Networks in Response to Past, Present, and Future Drought, Invited Speaker, NRESS Environmental Science Seminar Series, University of New Hampshire, Durham, NH, December 2<sup>nd</sup>, 2016.

B.A. Huggett, Xylem Structure and Function: Past, Present, and Future, Guest Lecturer, FOR 225 Tree Structure and Function Course, Rubenstein School of Environment and Natural Resources, University of Vermont, March 29<sup>th</sup>, 2016.

### **CONFERENCE PRESENTATIONS/POSTERS (†denotes presenting author; \*denotes student author)**

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Huggett B.A.†, J. Wason, and C.R. Brodersen, Teaching in the third dimension: using 3D printed models and virtual reality to teach plant xylem anatomy, Undergraduate Biology Education Research Gordon Research Conference, June 2019.

Furze, M.E.†, B.A. Huggett, E. Aubrecht, C. Stolz, M.S. Carbone, A.D. Richardson. 2019. Whole-tree nonstructural carbohydrate storage and seasonal dynamics in five temperate species. Society for Integrative and Comparative Biology, January 2019.

Furze, M.E.†, B.A. Huggett, E. Aubrecht, C. Stolz, M.S. Carbone, A.D. Richardson. 2018. Whole-tree nonstructural carbohydrate budgets and seasonal dynamics in five temperate species. Annual Meeting of the American Geophysical Union, December 2018.

Huggett, B.A.†, Niamh Micklewhite\*, Alison Ricciardi\*, P.B. Tomlinson, Hydraulic architecture of the leaf axis in cycads. Annual Meeting of the Botanical Society of America, July 2018.

Huggett B.A.†, J. Wason, and C.R. Brodersen, The functional implications of the presence or absence

- of intervessel connections across growth rings of four northern hardwood trees. Annual Meeting of The Botanical Society of America, July 2018.
- Brodersen, C.R.<sup>†</sup>, J. Wason, B.A. Huggett, Three-dimensional xylem organization and its implications for water transport during drought. Annual Meeting of the Botanical Society of America, July 2018.
- Wason J.<sup>†</sup>, Huggett B, and C.R. Brodersen, Using 3D data and virtual reality to teach xylem anatomy. Multiscale Plant Vascular Biology Gordon Research Conference and Seminar, June 2018.
- Huggett B.A.<sup>†</sup>, J. Wason, and C.R. Brodersen, The functional implications of the presence or absence of intervessel connections across growth rings of four northern hardwood trees. Multiscale Plant Vascular Biology Gordon Research Conference, June 2018.
- Brodersen C.R.<sup>†</sup>, J. Wason, and B.A. Huggett, Modeling xylem network performance and vulnerability curves with microCT-derived connectivity parameter. Multiscale Plant Vascular Biology Gordon Research Conference, June 2018.
- Reiss, S.<sup>†\*</sup>, B.A. Huggett, Phenotypic plasticity of pitch pine (*Pinus rigida*) across environmental gradients. Northeastern Natural History Conference, April 2018.
- Curtis, I.<sup>†\*</sup>, B.A. Huggett, The regeneration of a rare forest type, pitch pine duneland, in coastal Maine. Northeastern Natural History Conference, April 2018.
- Wason J.<sup>†</sup>, B.A. Huggett, and C.R. Brodersen, Intervessel connections across growth rings in xylem of northern hardwood trees. Harvard Forest Ecology Symposium, March 2018.
- Wason J.<sup>†</sup>, B.A. Huggett, and C.R. Brodersen, Xylem-vessel networks and drought resistance in northern hardwood trees. Forest Ecosystem Monitoring Cooperative's Annual Conference, December, 2017.
- Huggett B.A.<sup>†</sup>, J. Wason, and C.R. Brodersen, Hydraulic safety margins and air-seeding thresholds in roots, trunks, branches, and petioles of four northern hardwood trees. Forest Ecosystem Monitoring Cooperative's Annual Conference, December, 2017.
- Wason J.<sup>†</sup>, B.A. Huggett, C.R. Brodersen, Teaching in the third dimension: using 3D printed models and virtual reality to teach plant xylem anatomy. Southern Connecticut State University Scientific Teaching Forum, September 2017.
- Wason J.<sup>†</sup>, K. Anstreicher<sup>\*</sup>, N. Stephansky<sup>\*</sup>, B.A. Huggett, C.R. Brodersen, Hydraulic safety margins in roots, trunks, branches and petioles of northern hardwood trees. Ecological Society of America's Annual Meeting, August 2017.
- Wason J.<sup>†</sup>, K. Anstreicher<sup>\*</sup>, N. Stephansky<sup>\*</sup>, B.A. Huggett, C.R. Brodersen, Hydraulic safety margins in roots, trunks, branches and petioles of northern hardwood trees. Northeast Regional American Society of Plant Biologists Conference. April 2017.
- Wason J.<sup>†</sup>, K. Anstreicher<sup>\*</sup>, N. Stephansky<sup>\*</sup>, B.A. Huggett, C.R. Brodersen, New England Forests and the 2016 Drought: Hydraulic safety margins and physiological tipping points of four hardwood tree species. 33rd Annual Yale School of Forestry and Environmental Studies Research Conference, April 2017.
- Wason J.<sup>†</sup>, K. Anstreicher<sup>\*</sup>, N. Stephansky<sup>\*</sup>, B.A. Huggett, C.R. Brodersen, Hydraulic safety margins in roots, trunks, branches and petioles of northern hardwood trees. Harvard Forest Ecology Symposium, March 2017.
- Stephansky<sup>†\*</sup>, N., K. Anstreicher<sup>\*</sup>, J.W. Wason, C.R. Brodersen, and B.A. Huggett, Drought Resistance

in Two Dominant New England Hardwood Tree Species, CUR REU Symposium, Arlington, VA, Oct. 2016.

Curtis, I. †,\* and B.A. Huggett, Extent of Hemlock Woolly Adelgid Infestation at Bates Morse Mountain Conservation Area, Bates Parents Weekend, Fall 2016.

Dunn, E. †,\* and B.A. Huggett, The Effects of Two Biotic Stressors on Carbon Allocation in Two Coniferous Trees, Bates Parents Weekend, Fall 2016.

Dunn, E. †,\* and B.A. Huggett, Impact of Hemlock Woolly Adelgid on Growth and Carbon Allocation in Eastern Hemlock Trees. Bates Parents Weekend, Fall 2015.

Klosterman, S.T. †, M. Furze, D. M. Aubrecht, S. Frederick, A. Martinez, B.A. Huggett, C. Stolz, M. Carbone, B.R. Helliker, A.D. Richardson, New Approaches to Forest Ecophysiology: Insights in Ecosystem Function From Nonstructural Carbohydrate Analysis, Thermal Imaging, and Aerial Photography. 10<sup>th</sup> Annual Plant Biology Initiative Symposium, Harvard University, 2015.

Richardson, A.D. †, M. Carbone, B.A. Huggett, M. Rurze, C. Czimczik, and X. Xu. Variation in the concentration and age of nonstructural carbon stored in different tree tissues. European Geosciences Union, 2014.

Tomlinson, P.B. † and B.A. Huggett. Is saccate pollen ancestral in angiosperms? Either exaptation or adaptation. Plant Biology Initiative at Harvard, 2012.

Tomlinson, P.B. † and B.A. Huggett. Partial shoot reiteration in *Wollemia nobilis*; does it come from “axillary meristems”? Annual Meeting of the Botanical Society of America, 2010.

Schaberg, P.G. †, G.J. Hawley, H.L. Elliott, P.F. Murakami, B.A. Huggett, J.M. Halman, and C. Eagar. Long-term fertilization with calcium or aluminum highlights the influence of anthropogenic cation disruption on the physiology and carbon sequestration of sugar maple trees at the Hubbard Brook Experimental Forest, NH. Annual Meeting of the Ecological Society of America, 2009.

Huggett, B.A. †, L. Dietterich, J. Onstad, and N.M. Holbrook. Calcium deficiency and whole plant water relations in sugar maple (*Acer saccharum* Marsh.). Annual Meeting of the Botanical Society of America, Poster Session, 2009.

Huggett, B.A. and P.B. Tomlinson †. Vessel length measured *in situ* in the aerial roots of epiphytic (Araceae). Annual Meeting of the Botanical Society of America, 2008.

Huggett, B.A. †, P.G. Schaberg, and G.J. Hawley. Assessing the influence of long-term calcium and aluminum soil fertilization on wound closure in sugar maple (*Acer saccharum*). Hubbard Brook Ecosystem Study 43<sup>rd</sup> Annual Cooperators’ Meeting, 2006.

Huggett, B.A. †, P.G. Schaberg, and G.J. Hawley. Assessing the influence of long-term calcium and aluminum soil fertilization on wound closure in sugar maple (*Acer saccharum*). Annual Meeting of the Ecological Society of America, 2005.

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### **ADDITIONAL EXPERIENCE and INTERESTS**

Hiked the entire Appalachian Trail, 2184 miles, Georgia to Maine, 1997.

Hiked the entire Long Trail of Vermont, 272 miles, 1995.

Interests include: fly fishing, hiking, camping, downhill/cross-country skiing, snowshoeing, kayaking, baseball/softball, squash, volleyball, disc golf, and running.