

**CATHERINE L. CARDELÚS, PH.D.**

Colgate University  
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**CURRENT POSITION**

- 2014-Present Associate Professor of Biology & Environmental Studies, Colgate University, Hamilton, NY  
2008-2014 Assistant Professor of Biology, Colgate University, Hamilton NY  
2013-2016 Adjunct Assistant Professor, Clemson University, Clemson SC

**EDUCATION**

- 2002 Ph.D. Department of Ecology & Evolutionary Biology, University of Connecticut, Storrs, CT. Ph.D.  
Thesis: Distribution and abundance of vascular epiphytes in tropical wet forests: a multiscale approach. (Advisor: Dr. Robin L. Chazdon)  
1996 B.A. Barnard College, New York, N.Y. Biology w/ honors & Ancient Greek Language (Cum Laude) (Advisor: Dr. Helen Young)

**PUBLICATIONS (\*INDICATES UNDERGRADUATE STUDENT)  
PUBLISHED WORKS & IN REVIEW**

- Klepeis, P., I. Orłowska, E. Kent, C.L. Cardelús, P. Scull, A. Wassie & C.L. Woods. (*in review*). Ethiopia church forests: a hybrid model of protection. *Human Ecology*.  
Cardelús, C.L., P. Scull, A. Wassie, C.L. Woods, P. Klepeis, E. Kent, & I. Orłowska. (*in review*). Shadow conservation and the persistence of sacred forests in northern Ethiopia. *Biotropica*.  
Woods, C.L., C.L. Cardelús, P. Scull, A. Wassie, M. Baez\*, P. Klepeis. (*in review*). Stone walls and sacred forest conservation in Ethiopia. *Biological Conservation*.  
Scull, P. C.L. Cardelús, P. Klepeis, C.L. Woods, A. Frankl, J. Nyssen. (*in review*). The resilience of Ethiopian church forests evidenced from a diachronic analysis using 1930's aerial photographs. *Land Degradation and Development*.  
Woods, C.L., S.J. Dewalt, & C.L. Cardelús. (2015). Microhabitat associations of vascular epiphytes in a wet tropical forest canopy. *Journal of Ecology*. 103: 421-430.  
Oberbillig, D., Randle, D.C., Middendorf, G., & C.L. Cardelús. (2014) Outdoor Learning in Formal Ecological Education – Looking to the Future. *Frontiers in Ecology and the Environment* 27: 419-420.  
Cardelús, C.L., & G. Middendorf. (2013) Ecological literacy: the educational foundation for informed public decision making. *Frontiers in Ecology & the Environment* 11: 330-331.  
Cardelús, C.L., M. Baimas-George\*, M.D. Lowman, & A. Wassie Eshete. (2013). Carbon Sequestration in Ethiopia. Edited volume: *Treetops at Risk: Challenges of Global Canopy Ecology and Conservation*.  
McCay, T.S., C. Cardelús, & M. Neatrour. (2013). Rate of litter decay and litter macroinvertebrates in limed and unlimed forests of the Adirondack Mountains, USA. *Forest Ecology and Management* 304:254-260.  
Cardelús, C.L., P. Scull, J. Hair\*, M. Baimas-George\*, M.D. Lowman, & A. Wassie Eshete. (2013). A preliminary assessment of Ethiopian sacred groves at the landscape and ecosystem scales. *Diversity* 5 (2): 320-334.

- Watkins, J.E. Jr. & C.L. Cardelús. (2012). Ferns in an angiosperm world: cretaceous radiation into the epiphytic niche and diversification on the forest floor. *International Journal of Plant Sciences* 173, 6: 695-710.
- Beck, C., K. Klemow, J. Paulson, A. Bernstein, M. Lam, G. Middendorf, J. Reynolds, K. Belanger, C. Cardelús, C.Cid. (2012). Add Ecology to the Pre-Medical Curriculum. *Science* 335: 1301.
- Cardelús, C.L. (2012). Surveying Epiphytes in Forest Canopies. In *Methods in Forest Canopy Research*. Eds. M.D. Lowman & T. Schowalter. University of California Press.
- Cardelús, C.L., M. Lowman, & A. Wassie Eshete. (2012). Uniting Church and Science for Conservation. *Science* 335: 916-917.
- Laurance, W.F., D.C. Useche, L.P. Shoo, S.K. Herzog, M. Kessler, F. Escobar, G. Brehm, J.C. Axmacher, I. C. Chen, L.A. Gámez, P. Hietz, K. Fiedler, T. Pyrcz, J. Wolf, C.L. Merkord, **C.L. Cardelús**, A.R. Marshall, C. Ah-Ping, G.H. Aplet, M. del Coro Armizmendi, W. J. Baker, J. Barone, C.A. Bruhl, R.W. Bussmann, D. Cicuzza, G. Eilu, M.E. Favila, A. Hemp, C. Hemp, J. Homeier, R.B. Huey, J. Hurtado, J. Jankowski, G. Kattán, J. Kluge, T. Kromer, D. Lees, M. Lehnert, J.T. Longino, J. Lovett, P.H. Martin B.D. Patterson, R.G. Pearson, K.S. H. Peh, B. Richardson, M. Richardson, M. Samway, F. Senbeta, T.B. Smith, T. Utteridge, J.E. Watkins, Jr., R. Wilson, S.E. Williams, & C. Thomas. (2011). Global warming and the vulnerability of tropical biota. *Biological Conservation* 144: 548-557.
- Cardelús, C.L. & M.C. Mack. (2010). The nutrient status of epiphytic ferns, orchids and bromeliads and their host tree along an elevation gradient, Costa Rica. *Plant Ecology* 207 (1): 25-37.
- Cardelús, C.L. (2010). Litter decomposition in the canopy and on the forest floor of three tree species in a tropical rainforest, Costa Rica. *Biotropica* 42 (3): 300-308.
- Watkins, Jr. & C.L. Cardelús, C.L. (2009). Habitat differentiation of ferns in a lowland tropical rainforest. *American Fern Journal* 99 (3): 162-175.
- Cardelús, C.L., M.C. Mack, C.L. Woods, J. DeMarco & K. Treseder. (2009). Nutrient cycling in canopy and forest floor soils in a lowland tropical wet forest, Costa Rica. *Plant and Soil* 318 (1): 47-61.
- Colwell, R.K., G. Brehm, C.L. Cardelús, A.C. Gilman & J.T. Longino (2008). Global warming, elevational range shifts, and lowland biotic attrition in the wet tropics. *Science* 258-261. <http://viceroy.eeb.uconn.edu/ColwellEtAlScience.htm>
- Watkins, Jr., J.E., C.L. Cardelús & M.C. Mack (2008). Ants mediate nitrogen relations of an epiphytic fern. *New Phytologist* 180 (1): 5-8.
- Robertson, J.M., C.L. Cardelús, and M.I. Williams (2007). Arboreal oviposition site in the fossorial snake, *Enulius sclateri*. *Herpetological Review* 38(4): 466-467.
- Watkins, Jr. J.E., P. Rundel, & C.L. Cardelús. (2007) The influence of plant life form on carbon and nitrogen relationships in tropical rainforest ferns. *Oecologia* 153 (2): 225-232.
- Cardelús, C.L. (2007). Vascular epiphyte communities in the inner-crown of *Hyeronima alchorneoides* and *Lecythis ampla* at La Selva Biological Station, Costa Rica. *Biotropica* 39 (2): 171-176.
- Watkins Jr., C.L. Cardelús, R.C. Colwell, & R. Moran. (2006). Species richness and distribution of ferns along an elevational gradient in Costa Rica. *American Journal of Botany* 93 (1) 73-83.
- Cardelús, C.L., R.C. Colwell, J.E. Watkins, Jr. (2006). Vascular epiphyte distribution patterns: explaining the mid-elevation richness peak. *Journal of Ecology* 94 (1): 144-146.
- Cardelús, C.L. & R.L. Chazdon. (2005) Inner-crown microenvironments of two emergent tree species in a lowland wet forest. *Biotropica* 37: 238-244.

**B. WORKS IN PREPARATION (\* DENOTES STUDENT)**

- Pellegrini\*, A.F., D. Stanton, & C.L. Cardelús. Primary succession in epiphyte communities: a case study on feedbacks between resource pool development and community dynamics. *Oikos*.
- Woods, C.L., S.J. DeWalt, C.L. Cardelús, K.E. Harms, J.B. Yavitt<sup>4</sup>, S. Joe Wright. Plant nutrient acquisition strategy changes with fertilization. *Functional Ecology*.
- Cardelús, C.L., C.L. Woods, K. Soule\*, E. Messing\*, S. Reagan\*, A. Pellegrini\* (*in prep.*) The effects of nutrient addition on canopy epiphyte community structure and function. *Target Journal: Ecology Letters*.
- Vondracek, S\*, C. Spevacek\*, K. Bascom\*, and C.L. Cardelús (*in prep.*) The effects of mitigative liming on soil status and litter decomposition rates in the Adirondack State Park, NY. *Target Journal: Canadian Journal of Botany*.

**PROFESSIONAL RECOGNITION****GRANTS**

- 2015-2018 NSF RUI-CNH Small Grant: Shadow Conservation: What are the Mechanisms of Religious Management for Forest Persistence. PI Cardelús; Co-PI's: P. Scull, P. Klepeis, E. Kent, A. Wassie Eshete, I. Orłowska, C. Woods. \$500,000
- 2014-2019 MRI: Acquisition of a TXRF spectrometer for Research in Chemistry, Biology, and Geology. PI Rowlett; Co-PI's: C. Cardelús, R. Fuller, R. April. \$102,740
- 2014-2015 PI on Collaborative Research Proposal: Colgate Picker Interdisciplinary Science Institute: What socio-ecological processes create strong stewardship of church forests of northern Ethiopia. \$100,000. Co-PI's: P. Scull, P. Klepeis, E. Kent, A. Wassie Eshete, I. Orłowska, C. Woods.
- 2014-2015 Sponsored Research Support Fund. Colgate Research Council, \$15,133
- 2014-2015 Research Council Major Grant, Colgate University: Experimental study of nutrient addition and water exclusion on canopy ecosystem processes and epiphyte community structure. \$7,825
- 2013-2014 PI on Collaborative Research Proposal: Colgate Picker Interdisciplinary Science Institute: Does religious management supersede the socio-ecological drivers of forest change in sacred groves of northern Ethiopia? \$90,000. Co-PI's: P. Scull, P. Klepeis, E. Kent, A. Wassie Eshete, M. Lowman.
- 2013-2014 Research Council Major Grant, Colgate University: Experimental Study of Nutrient Addition and Water Exclusion on Canopy Processes and Epiphyte Community Structure. \$7500
- 2012-13 The Upstate Institute, Colgate University: Above and Belowground Responses to Acid Rain Mitigation in Adirondack State Park. \$5000
- 2010-13 NSF: Research Initiation Grant: Experimental Study of Canopy Nutrient Limitation on Ecosystem Processes and Community Structure. \$187,629
- 2010 Picker Interdisciplinary Science Institute Grant: Conservation of Ethiopian Church Forests. \$5,307.00 (<http://www.catherinecardelus.com/ethiopia/>)
- 2009 Faculty Research Council, \$1500 for travel to AAAS in Chicago to participate in a workshop: Career Boosters for Women and Minority Scientists.
- 2009 Faculty Development Council, \$500, for AAAS workshop.
- 2008-09 NSF Research Starter Grant: Exploring the nutrient dynamics of herbaceous taxa from temperate and tropical regions, \$50,000
- 2000-2001 NSF Doctoral Dissertation Improvement Grant, \$5000
- 2000 Organization for Tropical Studies Research Grant, \$3000
- 1998 Organization for Tropical Studies, Post-course Grant, \$600

**FELLOWSHIPS**

- 2006-2008 Postdoctoral Research Fellowship, South East Alliance for Graduate Education and the Professoriate (SEAGEP-NSF), \$50,000
- 2003-2006 Minority Postdoctoral Research Fellowship, NSF, \$160,000
- 2003, 2007 Postdoctoral Research Fellowship, Mellon Foundation, \$48,000
- 2002 Dissertation Research Fellowship, University of Connecticut, \$3,000
- 2001 Multicultural Fellowship, University of Connecticut, \$7,500
- 1998 Multicultural Summer Fellowship, University of Connecticut, \$3000
- 1998-2001 NSF Graduate Student Research Fellowship, \$55,000
- 1998 NSF Minority Graduate Student Research Fellowship (Awarded)
- 1997-1998 Multicultural Fellowship, University of Connecticut, \$15,000
- 1996 The Grace Potter Rice Fellowship, Columbia University, \$4,000
- 1996 Summer Fellowship, Barnard College, \$500

**AWARDS & HONORS**

- 2010, 2013 Extended Study Funded for three week trip to Costa Rica Associated with my course: Tropical Ecology, BIOL 332. ~\$22,000  
(<http://www.catherinecardelus.com/extended-study-2010/>;  
<http://www.catherinecardelus.com/blog/>)
- 2007 Travel Award, Ecological Society of America (ESA) and Women Evolving Biological Sciences (WEBS), \$700
- 2002 Bamford Award, University of Connecticut, \$500
- 2002 Travel Award, University of Connecticut, \$1,200
- 2000 Biodiversity Award, University of Connecticut, \$500
- 1999 Edgar T. Wherry Award, American Fern Society & BSA, \$500
- 1999 Pilot Study Award, Organization for Tropical Studies, \$1500
- 1998 Bamford Award: Summer, University of Connecticut, \$500
- 1996 Hermann Botanical Prize, Barnard College, \$500
- 1996 Cum Laude, Barnard College
- 1994-1996 Dean's List, Barnard College

**PROFESSIONAL ACTIVITIES & SERVICE**

- June 2013-18 Certified Senior Ecologist, Ecological Society of America.
- Jan 2013 Managing Editor, *Springer Science Reviews* Journal.
- Sept. 2013 Launch of Ecoliteracy series in *Frontiers in Ecology and the Environment*. Co-Edited with Dr. George Middendorf and co-editors were responsible for proposal, solicitation, and editing of series. Papers published monthly through July 2014.
- June 2013 Co-organized symposium with Carrie Woods (Clemson University) at the annual Association for Tropical Biology Meeting in San Jose, Costa Rica titled: *Changing water and nutrient regimes in the rainforest canopy: the impact on the resident epiphytes*. (<http://atbc2013.org/programs/symposia/>)
- April 2012 Panelist: Energy, Community and Colgate. Colgate University
- Fall 2011 Review Panelist: NSF DEB
- 2007-2011 Member, Education and Human Resources Committee for the Ecological Society of America.
- Aug. 2010 Co-organized a special session titled: Using Best Science to Educate a Public Confused about Global Climate Change. Ecological Society of America, Annual Meeting. Pittsburgh, PA.  
<http://eco.confex.com/eco/2010/techprogram/S5798.HTM>
- 2008-present External Ph.D. Committee Member for Carrie Woods, Clemson University.
- May 2009 Interviewed for Nature Magazine by Karen Kaplan for 'Unmasking the

- Imposter.' Nature 459, 468-469.
- April 2009 Interviewed for Science Magazine by Elisabeth Pain for 'Professional Service.'  
[http://sciencecareers.sciencemag.org/career\\_magazine/previous\\_issues/articles/2009\\_04\\_24/caredit.a0900053](http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2009_04_24/caredit.a0900053)
- Feb. 2009 Workshop Speaker: *Career Boosters for Women and Minority Scientists*. Association for the Advancement of Sciences Annual Meeting, Chicago.
- June 2008 Interviewed for Science Careers by Elisabeth Pain: A Self-Made Climber.  
[http://sciencecareers.sciencemag.org/career\\_magazine/previous\\_issues/articles/2008\\_06\\_13/caredit.a0800088](http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2008_06_13/caredit.a0800088)
- June 2008 Association for Tropical Biology & Conservation Symposium Co-chair with G. Zotz: *Diversity in the Canopy*.  
[http://www.atbc2008.org/program/symposium\\_zotz.htm](http://www.atbc2008.org/program/symposium_zotz.htm)
- Oct. 2007 NSF ADVANCE Workshop, *Women Evolving Biological Sciences* (WEBS). Selected participant. 2007, Pack Forest Conference Center, WA.  
<http://www.engr.washington.edu/advance/webs/>
- Oct. 2007 Ecophylogenetics Workshop Participant, Harvard Forest, MA.  
<http://www.cbs.umn.edu/cavender/ecophylogenetics.shtml>
- 2007 ESA Judge for student poster and oral presentations
- 2005 Ecoinformatics Workshop Participant, *The Science Environment for Ecological Knowledge (SEEK)*, University of New Mexico, NM.  
<http://seek.ecoinformatics.org>

#### TEACHING EXPERIENCE

##### COLGATE UNIVERSITY—AN UNDERGRADUATE LIBERAL ARTS INSTITUTION

- Biodiversity & Biogeography of Australia (Wollongong, Australia), F2015
- Ecology, Evolution & Diversity (Biol 211): Biology for Majors: F2008, S2009, F2009, S2010, S2011, F2011, F2013, S2014, S2015,
- Ecosystem Ecology with Laboratory (Biol 329): F2008, S2011, F2012
- Tropical Ecology with three week extended study to Costa Rica (Biol 332): S2010, S2013  
[\(http://www.catherinecardelus.com/costa-rica-extended-study/\)](http://www.catherinecardelus.com/costa-rica-extended-study/)
- Research Tutorial: Biodiversity, Community & Ecosystem Ecology (Biol 476): Independent Research Conducted by Seniors: S2009, F2010, F2011, F2012, F2013
- Global Change & YOU! (CORESP 128, FSEM 124): Non-majors Scientific Perspectives Course: F2009, F2010, F2012
- Conservation Biology: S2014, S2016
- Community-Based Environmental Issues: F2013

#### FACULTY-STUDENT RESEARCH

In the Cardelús lab, students can choose to work on of one three long-term research projects or develop their own research project.

#### ACADEMIC YEAR: INDEPENDENT STUDIES AND HONORS RESEARCH

(\*\* DENOTES 2 SEMESTERS OF RESEARCH)

- Baez, Mabel \*\*. 2015. High Honors. *Characterization of Impact of Human Activity on forest Productivity of Sacred Forests in the South Gondar Administrative Zone, Ethiopia Utilizing Spatial Analysis of Surrounding Land-Cover*.

- Jensen, Kelsey. 2014. *Soil status of Ethiopian Church Forests*.
- Faust, Erika \*\*. 2014. High Honors. *Effects of nutrient deposition on three epiphyte functional groups*.
- Burton, Lauren. 2014. Honors. *Experimental study of liming on litter productivity and foliar quality in hardwood forests exposed to acidic deposition*.
- Arboleda, Laura \*\*. 2014. *Effects of Liming on Aboveground Biomass in the Adirondacks: Is Liming a Viable Mitigation Strategy for the Effects of Acid Rain?*
- Lichtenauer, Charles \*\*. 2014. *Analysis of precipitation chemistry at La Selva Biological station, Costa Rica, suggests anthropogenic influence*.
- Whiting, Emma 2014. Honors. *Macroinvertebrate abundance and diversity in lime mitigated sites in Adirondack State Park, NY*.
- Dobromski, Ian \*\*. 2013. *Dolomitic liming differentially affects the foliar stoichiometry of four species of hardwood in Adirondacks Park, NY*
- Vondracek, Sarah \*\*. 2013. Honors: *The effects of liming on soil quality and litter decomposition in Adirondack State Park, NY*.
- Griffiths, Amanda \*\*. 2013. Honors: *Litter productivity and chemistry after liming treatments in the Adirondacks, NY*.
- Messing, Emily \*\*. 2012. Honors: *The effects of nutrient addition on canopy soil processes and properties*.
- Pochini, Katherine. 2011. Honors: *The effects of acidic deposition and liming on ANPP and stoichiometry in a mixed-stand deciduous forest, Adirondack State Park, NY*.
- Kaitlyn Soule, 2011 \*\*. Honors: *The nutrient status of vascular epiphytes in two host trees, Costa Rica*.
- Spevacek, Carl \*\*. 2011. Honors: *Litter productivity and decomposition 6-years post-liming in Adirondack State Park, NY*.
- Pellegrini, Adam \*\*. 2010. High Honors: *The effects of increased temperature on the life history and nutrient relations of two morphologically distinct bromeliad species*.
- Lostumbo, Mallory \*\*. 2010. High Honors: *The effects of liming on aboveground primary productivity and litter stoichiometry in Adirondack State Park*.
- Roy, Justin \*\*. 2010. Honors: *The effects of liming on belowground processes, soil nutrient status, and properties in Adirondack State Park*.

#### ACADEMIC YEAR: RESEARCH CLASS

- Moore, Erik. 2015. *Liming treatment differentially affects foliar chemistry of three tree species in the Adirondack Park, NY*.
- Leighton, Elizabeth. 2015. *Liming improves growth and productivity of tree species in forests in the Adirondack Park in Herkimer County, New York, USA*.
- Mazzeo, Danielle. 2015. *Effects of acid rain and liming on litter quality and productivity of 2 tree species in the Adirondacks, New York*
- Wobby, Thomas. 2015. *Elaphoglossum foliar stoichiometry in response to nutrient deposition predicted by global change, independent of competition*
- Pierce, Shannon. 2015. *Liming affects litter quality and productivity in Adirondack forests affected by acid deposition*.
- Butts, Madeline. 2014. *The future of the rainforest canopy: bromeliad responses to projected nutrient additions*
- Coplan, Joseph. 2013. *Aboveground net primary productivity in limed vs. unlimed plots in the Adirondack Mountains, NY*.
- Martin, Lindsay. 2013. *An examination of the physiological and stoichiometric differences of ferns and Lycophytes (Genus: Selaginella) in a low light tropical rainforest*.

- Bascom, Karen. 2012. *The effects of calcium carbonate addition on litter decomposition after 1-year in the Adirondack Mountains, NY.*
- Niskern, Marla. 2012. *The effects of liming on aboveground net primary productivity and foliar nutrient concentrations in the Adirondack Mountains, NY.*
- Reagan, Sheila. 2012. *Response of bromeliads to nutrient addition in a Costa Rican rainforest.*
- Elora Apantaku, 2010: *Canopy soil properties and chemistry in two host tree species at La Selva Biological Station, Costa Rica.*
- Maria Baimas-George, 2010: *The nutrient status of forest floor and canopy soils in Church Forests of northern Ethiopia.*
- Caroline Callahan, 2010: *Foliar chemistry of epiphytic fern in Church Forest of northern Ethiopia.*
- Hanrahan, Brittany. 2010. *Decomposition of Acer rubrum leaves in four stream differentially affected by acid deposition in the Adirondack Mountains.*
- Michael Beatty & Ryan Meyers, 2009: *Litter decomposition across limed and unlimed sites in acid rain affected forests in the northeast.*
- Meean Dingman & Laura DiDomenico, 2009: *Fertilization effects on foliar stoichiometry of three epiphytic bromeliads.*
- Jonathan O'Boyle, 2009: *Stomatal and trichome densities of three epiphytic bromeliads under various nutrient regimes.*

#### SUMMER RESEARCH MENTORING

Funding was provided by: National Science Foundation Grant to Cardelús; a summer research fellowship from the Division of Natural Sciences (NASC) Colgate University; Colgate's Scholarships in Science, Technology, Engineering and Math Program (S-STEM); Colgate's Research Council Grant to Cardelús; or Brazilian Government Funding.

**Sarapiquí, Costa Rica:** 2010-2014 Students conducted research on the influence of nutrient addition on canopy epiphyte community composition and ecosystem processes as part of a long-term research project in Costa Rica. Student's with asterisk did not travel to Costa Rica, but worked in the lab on campus.

- 2015 Roxanne Maduro\*, 2018, NASC  
 Mabel Baez, 2015, Picker Interdisciplinary Science Institute  
 Michael James\*, 2017, NASC  
 Providence Ryan, 2017, NASC  
 Mahmood Khalil, 2018, Research Council  
 Lindsay McCulloch, 2016, Research Council  
 Kayleigh Bhangdia\*, 2016, Research Council
- 2014 Shannon Young, 2016, NASC  
 Providence Ryan, 2017, NASC  
 Lindsay McCullough, 2017, NASC  
 Thomas Wobby, 2016, NASC
- 2013 Charles Lichtenauer, 2014, NASC  
 Mabel Baez, 2014, NASC  
 Sheila Reagan, 2012, NSF  
 Emily Messing, 2012, NSF  
 Carrie Woods, 5<sup>th</sup> year Graduate Student, Clemson University, NSF
- 2012 Katherine Sotos, 2014, NASC  
 Madeline Butts, 2013, NASC  
 Sheila Reagan, 2012, NSF  
 Emily Messing, 2012, NSF  
 Carrie Woods, 4<sup>th</sup> year Graduate Student, Clemson University, NSF

- 2011 Sheila Reagan, 2012, NASC  
 Emily Messing, 2012, NASC  
 Sarah Vondracek, 2013, NASC  
 Adam Pellegrini, 1<sup>st</sup> year Graduate Student, Princeton University, NSF  
 Carrie Woods, 3<sup>rd</sup> Year Graduate Student, Clemson University, NSF  
 Giseli Nobrega Areias, 3<sup>rd</sup> Year Graduate Student, Instituto de Biologia  
 Universidade Estadual de Campina, Sao Paolo Brazil.
- 2010 Adam Pellegrini, 2010, NASC Fellowship  
 Kaitlyn Soule, 2011, NASC Fellowship  
 Elora Apantaku, 2011, NASC Fellowship  
 Yasmin Mannan, 2012, S-STEM  
 Yvett Sosa, 2012, S-STEM

### **Amhara, Ethiopia:**

Our research team studies the conservation of church forests in northern Ethiopia. On each trip students accompany us and often conduct their senior research on the project.

May 2016:

- Max Isralet, 2017, Biology Major  
 Kathryn Bazany, 2016, Art & Biology Major

January 2015:

- Mabel Baez, 2015, Biology & Environmental Studies Major  
 Lindsay McCulloch, Environmental Biology & Geology Major.

January 2014:

- Kelsey Jensen, 2014, Chemistry & Environmental Studies Major  
 Joshua Hair, 2014, Geography Major  
 Mabel Baez, 2015, Biology & Environmental Studies Major

### **New York, Adirondacks-Long term research site (2009-Present)**

My lab studies the above and belowground impacts of liming on acid deposition affected forests.

- 2012: Sarah Vondracek, 2013, NASC  
 2009: Michael Beatty, 2009, NSF  
 Mallory Lostumbo, 2010, NASC Fellowship  
 Justin Roy, 2010, NASC Fellowship  
 Hilary Nicholson, 2012 (co-advised with Dr. McCay, Biology), NASC

### **NON-COLGATE TEACHING**

- 2016 Lectures given to four students involved in our research on the conservation of church forests in the Amhara region of Ethiopia. We have two Masters and one PhD student working on the project.
- 2004 Guest Lecturer for Introductory Botany, University of Florida
- Summer 2004 Mentor at La Selva Biological Station, Costa Rica: NSF Research Education for Undergraduates; student from University of Costa Rica; two undergraduate students from Evergreen State College; two high school students from New Jersey, USA.  
 Organization for Tropical Studies Resource person for Tropical Plant Systematics
- 2000 Assisted Teacher Training Course, Costa Rica
- 1999 Seminar, University of Connecticut: Helped organize and teach a seminar which introduced primary literature to undergraduates



1998, 2002	Introductory Laboratory Instructor, University of Connecticut
1997	Methods in Ecology, University of Connecticut
1996	Introductory Laboratory Instructor, Barnard College
1995	Organic Chemistry Teaching Assistant, Barnard College

### POSTERS & PRESENTATIONS

(<sup>+</sup>DENOTES PRESENTER, \*UNDERGRADUATE STUDENT)

#### A. ORAL TALKS/PUBLISHED ABSTRACTS PRESENTED AT PROFESSIONAL MEETINGS

- Cardelús<sup>+</sup>, C.L., C.L. Woods, M. Baez\*, P. Ryan\*, L. McCulloch\*, T. Wobby\* & S. Young. Nutrient addition and water exclusion impacts on epiphytes in a lowland rainforest in Costa Rica. Association for Tropical Biology (ATBC), Honolulu HI. July 15, 2015.
- Woods<sup>+</sup>, C.L., C.L. Cardelús, P. Ryan\*, M. Baez\*, L. McCulloch\* & S. Young\*. The physiological and morphological responses of vascular epiphytes to long-term nutrient addition and water exclusion in a lowland wet rainforest in Costa Rica. Association for Tropical Biology (ATBC), Honolulu HI. July 15, 2015.
- Klepeis<sup>+</sup>, P., Cardelús, C., Kent, E., Orłowska, I., Scull, P., Wassie Eshete, A. and C. Woods. Ethiopian Church Forests as Sacred Groves and Common Pool Resources. Association of American Geographers (AAG) Annual Meeting. Chicago, Illinois. April 21-25.
- Scull<sup>+</sup>, P., C. Cardelús, E. Kent, P. Klepeis, I. Orłowska, A. Wassie Eshete, & C. Woods. The persistence of Church Forests in South Gondar, Ethiopia. April 2014. Association of American Geographers (AAG). Annual Meeting. Chicago, Illinois. April 21-25.
- Cardelús<sup>+</sup>, C.L. C. Woods, S. Reagan\*, E. Messing\* & K. Soule\*. Impacts of increased nutrient deposition on epiphyte nutrient status and community structure. June 2013. Association for Tropical Biology (ATBC), San José, Costa Rica.
- McCay<sup>+</sup>, T.S., C.L. Cardelús, S. Vondracek\*, & M. Neatrou. Litter decay and the role of macroinvertebrate decomposers in limed and unlimed forests of the Adirondack Mountains. Aug 2013. Ecological Society of America (ESA), Minneapolis, Minnesota.
- Scull<sup>+</sup>, P., C.L. Cardelús, & J. Hair\*. An Inventory of Church Forests in the Debre Tabor region of northern Ethiopia. American Association of Geographers Annual Meeting. Los Angeles, CA. April 9th, 2013.
- Cardelús<sup>+</sup>, C.L. C. Woods, A. Pellegrini\*, S. Reagan\*, E. Messing\*, & K. Soule\*. Epiphyte community and ecosystem process shifts in response to nutrient addition. October 2012. 6th International Canopy Conference, Oaxaca Mexico.
- McCay<sup>+</sup>, T.S., M A. Neatrou, C. L. Cardelús and M. Zimmerman\*. Effects of watershed liming on a food web in an Adirondack forest. Aug. 2010. Oral Presentation: ESA, Pittsburgh, PA.
- Cardelús<sup>+</sup>, C.L. Epiphyte community assembly and climate change. Oct. 2009. Fifth International Canopy Conference. Bangalore, India
- Espeleta<sup>+</sup>, J.F., T. Taylor\*, C.L. Cardelús, & J. S. Powers. Soil glomalin accumulation tracks landscape heterogeneity in tropical regions: From large-scale edaphic and vegetation variation to local effects via epiphytic contributions to the forest floor. Aug. 2009. ESA, Milwaukee, WI.
- Cardelús<sup>+</sup>, C.L. & M.C. Mack. Resource partitioning by vascular epiphytes in the rainforest canopy, Costa Rica. ESA, Milwaukee Wisconsin, Aug. 2008
- Cardelús<sup>+</sup>, C. & M.C. Mack. Resource partitioning by vascular epiphytes: a mechanism for species richness maintenance in the rainforest canopy. ATBC, Paramaribo, Suriname. June 2008.
- Cardelús<sup>+</sup>, C. & M.C. Mack. Litter decomposition in the canopy and forest floor of a wet tropical forest: consequences for nutrient cycling. Poster: ESA, San Jose, California. Aug. 2007

- Colwell<sup>+</sup>, R.K., G. Brehm, C.L. Cardelús, A.C. Gilman, & J.T. Longino. Modeling and predicting the effects of global warming on range shifts, biotic vacuums and mountaintop extinctions in the tropics. ATBC, Morelia, Mexico. July 2007.
- Cardelús<sup>+</sup>, C.L., M.C. Mack, E.G. Schuur, & J.E. Watkins, Jr. Nutrient status of vascular epiphytes on an elevation gradient in Costa Rica. ESA, Portland Oregon. Aug. 2004
- Cardelús<sup>+</sup>, C. L. Environmental determinants of vascular epiphytes distribution and abundance in tropical wet forests. ESA, Savannah Georgia. Aug. 2003
- Cardelús<sup>+</sup>, C. L. Canopy microclimate: a vascular epiphyte's perspective. Oral Presentation: Ecological Society of America, Tucson Arizona. Aug. 2002
- Cardelús<sup>+</sup>, C.L. Diversity of vascular epiphytes along an elevational gradient in Costa Rica. Third International Canopy Meeting, Cairns Australia. June 2002
- Cardelús<sup>+</sup>, C.L. Effects of microenvironment and tree characteristics on canopy vascular epiphyte distribution. Ecological Society of America, Snowbird Utah, August 2000.

#### B. POSTERS/PUBLISHED ABSTRACTS PRESENTED AT PROFESSIONAL MEETINGS

- Pellegrini\*<sup>+</sup>, A. & C.L. Cardelús. Effects of temperature and nutrient levels on life history characteristics in a tank bromeliad *Vriesea cathyi*. Aug. 2010. Poster: ESA, Pittsburgh, PA.
- Cardelús<sup>+</sup>, C.L., Roy\*, J., M. Lostumbo\*, & T. S. McCay. Effects of Acid Deposition and Liming Mitigation on Belowground Processes. Aug. 2010. Poster: ESA, Pittsburgh, PA.
- Cardelús<sup>+</sup>, C.L., M.C. Mack, & K. Treseder. Nutrient availability and status of organic and mineral soils at a lowland rainforest site, Costa Rica. Poster: ESA, Memphis Tennessee. Aug. 2006
- Woods<sup>+</sup>, C., C.L. Cardelús, & M.C. Mack. *In situ* net nitrogen mineralization patterns of canopy humus and forest floor soil of three emergent tree species of a lowland tropical forest, Costa Rica. Poster: CONFOR, Duparquet, Quebec. Feb. 2006.
- Watkins<sup>+</sup>, J.E. Jr., & C.L. Cardelús, Habitat segregation in epiphytic and terrestrial ferns. Poster: XVI International Botanical Congress, St. Louis Missouri, July 1999. Winner of the Edgar T. Wherry Award for best poster.
- Cardelús<sup>+</sup>, C.L. & J.E. Watkins, Jr. Epiphytic fern stratification on the trunks of *Hieronima alchorneoides* (Euphorbiaceae) at the La Selva Biological Station, Costa Rica. Poster: International Canopy Conference, Sarasota Florida. November 1998.

#### INVITED SEMINARS

- 2015 Colgate University, Environmental Studies Seminar Series. *How will pollution impact the rainforest canopy?* March 2015
- 2014 Invited Speaker at Workshop for Adirondack Research Consortium: What is the Greater Threat to Northern Forest Communities: Climate Change of White-tailed Deer? Speaker in: Community Experiences: Case Studies and Implementation Plans—*Community-based Environmental Issues, White-tailed Deer in Hamilton NY.*
- 2014 Colgate University, Natural Sciences Seminar Series. *Ecological Status of Ethiopian Church Forests.* Colgate University Environmental Studies Brown Bag Series: *Forest Conservation in Ethiopia: Socio-ecological processes and stewardship of Ethiopian Orthodox Church Forests.* Joint presentation with collaborators. La Selva Biological Station, Costa Rica. *Conservation of Ethiopian Church Forests.* June 2014.
- 2012 Hamilton College, *The Canary in the Canopy.*
- 2010 NSF Research Education for Undergraduates Program, Costa Rica *Adventures of a Tropical Ecologist*

- 2010 Life Long Learners, Colgate University: *Look Up! Biodiversity & Climate Change in the Rainforest Canopy*
- 2009 University of North Carolina, Curriculum for the Environment & Ecology: *Up in the Rainforest: The Canopy & Global Change*; Colgate University, University-Wide: *Darwin, Plant, & Tropical Biodiversity*; Alfred University, Environmental Studies Program: *Look-up! The Impact of Global Warming on the Rainforest Canopy*
- 2008 Colgate University, Department of Biology: *The Community & Ecosystem Ecology of the Rainforest Canopy*
- 2007 Oklahoma State University, Department of Botany: *The Tropical Rainforest Canopy: Nutrient Cycling & Epiphyte Diversity*  
Harvard Forest: *The Tropical Rainforest Canopy: Nutrient Cycling & Epiphyte Diversity*  
Harvard University Herbarium: *Nutrient Cycling in Rainforest Canopies*
- 2003 University of Florida, Department of Botany: *Distribution & Abundance of Vascular Epiphytes in Tropical Wet Forests: a Multiscale Approach*
- 2002 University of Connecticut, Department of Botany: *Distribution & Abundance of Vascular Epiphytes in Tropical Wet Forests: a Multiscale Approach*
- 1999 La Selva Biological Station, Seminar Series: *Epiphyte Distribution & Abundance at La Selva Biological Station, Costa Rica*

#### MEMBERSHIPS

Association for Tropical Biology and Conservation (ATBC)  
American Association for the Advancement of Sciences (AAAS)  
American Association of University Professors (AAUP)  
Botanical Society of America (BSA)  
Ecological Society of America (ESA)  
International Canopy Network (ICAN)

#### AD-HOC REVIEWER

American Fern Journal, American Journal of Botany, Association for Women in Science, Austral Ecology, Biotropica, Conservation Biology, Ecological Society of America, Annual Meeting Symposia and Oral Presentations, Ecology, Folia Geobotanica, Forest Ecology & Management, Global Change Biology, Global Ecology and Biogeography, Journal of Biogeography, Journal of Ecology, Journal of Tropical Ecology, Murdoch Charitable Trust, National Science Foundation, Plant Ecology, Selbyana, Soil Biology and Biochemistry

#### COLGATE UNIVERSITY-WIDE ACTIVITIES & SERVICE

2016, Fall Chair, Sustainability Council  
2015, Spring Interim Director, Women's Studies Program  
2015-Present Member, Steering Committee for Environmental Studies  
2014-2015 Chair, Sustainability Council  
2013-2014 Member, Sustainability Council  
2013-Present Safety Advisory Committee  
2012-Present Udall Faculty Fellowship Committee  
2009-Present Women's Studies Advisory Board  
2010-2012 Faculty advisor for the Natural History Club  
2009-2012 Alana Affairs Committee Member  
2010 Goldwater Faculty Fellowship Committee  
Fall 2009 Interim Faculty Liason for Field Hockey

- July 2009 Conducted two workshops in the field for Colgate's Summer Sports & Science Camp
- April 2009 Tropical Biodiversity Seminar for Outdoor Education
- April 2009 Panel Member: Graduate School in Biology, Molecular Biology & Ecology. Colgate University, Career Service. (Career Services)
- March 2009 Panel Member: Patching the Leak in the Pipeline: Advice for Women Entering Careers in Science (Women's Studies)
- Feb 2009 Kick-off talk for Darwin Week: Plants and Tropical Diversity.

#### **OUTREACH ACTIVITIES**

- 2014-present Town of Hamilton, Deer Task Force.
- 2011-2013 Lectures given in Tropical Ecology and Conservation Biology to 2<sup>nd</sup>, 3<sup>rd</sup>, and 8<sup>th</sup> graders and worked with the agriculture teacher at Hamilton Central School on guest lectures for program.
- Spring 2012 Part of working group that drafted 'Generic Impact Statement on Industrial Wind Turbines in the Town of Madison.'
- 2012 Ecoliteracy program taught for the Chenango Afterschool Program in which a common garden was started and continued through the summer, a vermicomposting bin, and other activities geared toward connecting children to nature.
- 2002-06 Gave five lectures to grade schools in Florida & New York on Rainforest Ecology and Women in Science.
- 2005 Judge for two middle school science fairs in Gainesville, FL.
- 1999-2001 La Flaminia, Costa Rica
- Involved with Parent Teacher Association to raise money to improve school infrastructure.
  - Worked with large local landowners, and other residents, to increase awareness of the devastation caused by deforestation.
  - Organized local fundraisers to pay for the education of three young women in the community.
  - Organized transportation for local citizens to vote on a referendum establishing the Sarapiquí river a national monument.
  - Worked with and provided environmental literature and canopy access training for Costa Rican National park guards.
  - Provided free English classes to 15 local residents ages 5-65.

#### **LANGUAGES**

Bilingual English/Spanish, Fluent Italian