

## **COURTNEY HOLT McDANIEL\***

Springs Stewardship Institute, Museum of Northern Arizona  
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### **EDUCATION**

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**Ph.D. Entomology** (emphasis: Ecology), University of Georgia **May 2016**  
Dissertation Title: Ecological impacts of flow regulation on rivers and floodplains:  
macroinvertebrate dynamics of the Chattahoochee, Altamaha, and Savannah Rivers

Interdisciplinary Certificate in University Teaching

**M.S. Biological Sciences**, Auburn University **May 2008**  
Thesis title: A floristic study of Weaver Creek wetland, Santa Rosa County, Florida

**B.S. Biology**, Centre College **May 2005**  
Minor: Environmental Studies

### **TEACHING EXPERIENCE**

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**TA, Medical Entomology Lab, University of Georgia** **Fall 2014, Spring 2015**

- Prepared introductory presentations for groups of medically-significant arthropods
- Provided guidance for use of microscopes and identification keys
- Clarified complicated, discipline-specific terminology
- Developed and administered two lab practical exams each semester

**TA, Aquatic Entomology Lab, University of Georgia** **Spring 2014**

- Prepared introductory presentations for each aquatic insect order
- Provided guidance for hands-on aquatic insect identification
- Led field-based insect collecting trips to a variety of aquatic habitats in Georgia
- Graded preliminary and final aquatic insect collections for all students

**TA, Principles of Biology II Lab, University of Georgia** **Fall 2012, Fall 2013**

- Instructor of record for two sections each semester (~20 students per section)
- Introduced lab material, supervised lab activities (heavily focused on active learning), and led class discussions
- Introduced basic statistics to students for use in analyzing experimental data
- Developed and administered two lab assessments each semester
- Assisted with and critiqued student writing projects (research proposals and lab reports)

**TA, Anatomy and Physiology II Laboratory, Auburn University** **Spring 2008**

- Instructed students on basic animal anatomy and dissection technique
- Supervised dissections
- Developed and administered two lab practical exams

\*Last name changed from Holt to McDaniel in July 2016

**TA, Principles of Ecology Laboratory, Auburn University** **Spring 2007, Fall 2007**

- Developed and led field-based labs
- Instructed students on research design and statistical analysis of biological field data
- Critiqued and assisted with revisions of research project term papers

**TA, Principles of Biology Laboratory, Auburn University** **Fall 2005 – Fall 2007**

- Introduced weekly lab material (covering cellular biology, molecular biology, and genetics)
- Supervised and enhanced pre-planned lab activities

## **RESEARCH EXPERIENCE**

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**Postdoctoral Scholar, Springs Stewardship Institute, Flagstaff, AZ** **January 2016 – present**

- Assisted with a variety of research projects centered on freshwater ecology and conservation (project development, field data collection, data analysis)
- Performed statistical analyses of large datasets (including multivariate statistical analyses)
- Assisted with grant writing program
- Assisted with database management
- Conducted spring inventory and assessment workshops for a variety of clients, including Native American tribes, nonprofit organizations, and government agencies

**Research Assistant, University of Georgia Dept. of Biological Sciences** **January - June 2015**

- Assisted with development and implementation of an online biology laboratory module on antibiotic resistance (non-science-major lab sections)
- Analyzed effectiveness in accomplishing pre-determined learning objectives via comparison between experimental online student groups and control face-to-face student groups
- Currently developing a manuscript for submission to a peer-reviewed education journal

**Field technician, Alabama Natural Heritage Program, Auburn, AL** **April – June 2008**

- Located and mapped remnant black belt prairie habitat in central Alabama
- Performed floristic and conservation status surveys

**Intern, Cincinnati Zoo and Botanical Garden, Cincinnati, OH** **June – August 2004**

- Subcultured threatened and endangered species in the plant conservation laboratory of the Center for Research of Endangered Wildlife
- Investigated and improved rooting efficiency of Alabama leatherflower (*Clematis socialis*) in vitro (independent research project)

**Intern, Centre College Biology Department, Danville, KY** **June – August 2003**

- Performed reproductive biology surveys on populations of wild American ginseng in central and western Kentucky
- Analyzed and interpreted large data sets

## **PROFESSIONAL EXPERIENCE**

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**Natural Resources Specialist, Fort Gordon, GA** **August 2010 – August 2011**

- Completed vegetation surveys in longleaf pine-wiregrass ecosystem and performed data analysis; revised standard operating procedures for future surveys (in collaboration with The Nature Conservancy)
- Assisted with prescribed fire program
- Completed gopher tortoise survey across the property (approx. 30,000 ac.)

**Conservation Biologist, Callaway Gardens, Pine Mountain, GA July 2008 – August 2010**

- Project lead for plant conservation initiatives
  - American chestnut restoration (partnership with the American Chestnut Foundation)
  - Relict trillium safeguarding/transplant project (partnership with the Nature Conservancy, Fort Benning, U.S. Fish and Wildlife Service, and GA Dept. of Natural Resources)
- Implemented citizen science stream monitoring program (Georgia Adopt-A-Stream)
  - Trained and supervised volunteers
  - Collected, organized, and entered data into program database
- Developed and led educational programs for school groups, summer camps, and day guests
- Assisted with completion of conservation easement
- Assisted with prescribed fire program

**Intern, Bluegrass PRIDE, Lexington, KY February – May 2005**

- Developed and launched online lawn care audit for nonprofit environmental organization
- Assisted with environmental education outreach programs

**FUNDING**

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<b>American Association of University Women American Dissertation Fellowship (\$20,000)</b>	<b>2015 – 2016</b>
<b>The Wetland Foundation Student Travel Grant (\$1200)</b>	<b>2015</b>
<b>UGA Graduate School Travel Funding (\$500)</b>	<b>2014</b>
<b>Society of Wetland Scientists, South Atlantic Chapter Student Travel Grant (\$500)</b>	<b>2014</b>
<b>Society of Wetland Scientists Student Research Grant (\$1000)</b> Impacts of flow regulation on floodplains of the Savannah River: response of <i>Neoporus</i> (Coleoptera:Dytiscidae), a potential bioindicator organism.	<b>2013</b>
<b>Society of Wetland Scientists South Atlantic Chapter Research Grant (\$730)</b> Impacts of flow regulation on floodplains of the Savannah River: response of <i>Neoporus</i> (Coleoptera:Dytiscidae), a potential bioindicator organism.	<b>2013</b>
<b>National Park Service Research Grant (\$20,000 awarded to Dr. Darold Batzer)</b> Impacts of flow variation from 2001-2011 on aquatic invertebrate communities downstream of the Buford Dam on the Chattahoochee River.	<b>2013</b>
<b>UGA Interdisciplinary Life Sciences Fellowship (\$24,000)</b>	<b>2012</b>

**PUBLICATIONS (REFEREED)**

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**McDaniel, C.H.** and D.P. Batzer. In review. Effects of river regulation beyond the channel: multifaceted changes within a group of invertebrate floodplain specialists. Submitted to Freshwater Biology.

**McDaniel, C.H.**, J.V. McHugh, D.P. Batzer. In review. Congeneric predaceous diving beetle species fail to segregate in a floodplain system: a case of amplified sympatry. Submitted to Environmental Entomology.

**Holt, C.R.**, D. Pfitzer, C. Scalley, B.A. Caldwell, P.I. Capece, and D.P. Batzer. 2015. Macroinvertebrate assemblages of the Chattahoochee River National Recreation Area: an 11-year study. *In*: McDowell, R.J., C.A. Pruitt, and R.A. Bahn, eds. Proceedings of the 2015 Georgia Water Resources Conference, April 28-29, 2015, University of Georgia, Athens, GA.

**Holt, C.R.**, D. Pfitzer, C. Scalley, B.A. Caldwell, and D.P. Batzer. 2015. Macroinvertebrate community responses to annual flow variation from river regulation: an 11-year study. *River Research and Applications* 31: 798-807.

**Holt, C.R.**, D. Pfitzer, C. Scalley, B.A. Caldwell, P.I. Capece, and D.P. Batzer. 2015. Longitudinal variation in macroinvertebrate assemblages below a large-scale hydroelectric dam. *Hydrobiologia* 755: 13-26.

Mendelsohn, I.A., D.P. Batzer, **C.R. Holt**, and S.A. Graham. 2014. Abiotic constraints for wetland plants and animals. *In*: Ecology of Freshwater and Estuarine Wetlands. 2<sup>nd</sup> ed. Eds. D.P. Batzer and R.R. Sharitz. Berkeley: University of California Press.

**Holt, C.R.**, G.W. Folkerts, and D.R. Folkerts. 2011. A floristic study of a steephead stream in northwestern Florida. *Southeastern Naturalist* 10: 289-302.

**Holt, C.R.** 2008. Insects of Alabama. Encyclopedia of Alabama. URL: <http://www.encyclopediaofalabama.org/face/Article.jsp?id=h-1809>

## **PUBLICATIONS (NON-REFEREED)**

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**Holt, C.R.** 2010. The Georgia Adopt-A-Stream program: Citizens, streams and science. *Garden Gateways* 80:22.

**Holt, C.R.** 2009. The American chestnut: Then and now. *Garden Gateways*. 79:24-25.

## **PROFESSIONAL PRESENTATIONS**

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**Holt, C.R.** and D.P. Batzer. 2015. Impacts of flow regulation on *Neoporus* sp. (Coleoptera: Dytiscidae). Society of Wetland Scientists South Atlantic Chapter Meeting, Athens, GA. Oral Presentation (15 min).

**Holt, C.R.** and D.P. Batzer. 2015. Impacts of flow regulation on distribution and physiology of *Neoporus* sp. (Coleoptera: Dytiscidae), a common inhabitant of southeastern floodplains. Society for Freshwater Science Annual Meeting, Milwaukee, WI. Oral Presentation (15 min).

**Holt, C.R.**, D. Pfitzer, C. Scalley, B.A. Caldwell, P.I. Capece, and D.P. Batzer. 2015. Macroinvertebrate trends over 11 years in the Chattahoochee River below Buford Dam. Georgia Water Resources Conference, Athens, GA. Oral Presentation (15 min).

**Holt, C.R.** and K.R. Miller. 2015. Transitioning face-to-face (F2F) inquiry biology laboratory modules to fully online platforms. UGA Institute on Teaching and Learning Annual Meeting, Athens, GA. Oral Presentation (30 min).

**Holt, C.R.** and D.P. Batzer. 2014. Effects of river management on population dynamics of *Neoporus* sp. (Coleoptera: Dytiscidae), a potential bioindicator. Joint Aquatic Sciences Meeting, Portland, OR. Oral presentation (15 min).

**Holt, C.R.** and D.P. Batzer. 2014. Effects of river management on population dynamics of *Neoporus* sp. (Coleoptera: Dytiscidae), a potential bioindicator. Department of Entomology, University of Georgia, Athens, GA. Oral presentation (10 min).

**Holt, C.R.,** D. Pfitzer, C. Scalley, B.A. Caldwell, and D.P. Batzer. 2014. Macroinvertebrate community responses to annual flow variation from river regulation: an 11-year study. Georgia Entomological Society Annual Conference, Valdosta, GA, USA. Oral presentation (8 min).

Batzer, D., H. Wu, **C. Holt**, E. Reese, E. Bright, L. Lee, J. Garnett, M. Galatowitsch, R. Sharitz, C.R. Jackson, and A. Wrona-Meadows. 2013. The floodplain continuum: a template for understanding how floodplain ecology changes from headwaters to deltas. International Workshop on Processes and Services of Wetland Ecosystems, Changchun, China.

**Holt, C.R.** and G.W. Folkerts. 2007. Steepheads as refugia for rare wetland plants. Auburn University Graduate Student Forum. Oral presentation (12 min).

**Holt, C.R.** and G.W. Folkerts. 2006. Steepheads: biotic and abiotic characteristics. Auburn University Department of Biological Sciences Seminar. Oral presentation (45 min).

**Holt, C.R.** and A.E. Lubbers. 2003. The status of wild American ginseng in Kentucky. Kentucky Academy of Sciences Annual Conference. Oral presentation (12 min.)

## **INVITED PRESENTATIONS**

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**Holt, C.R.,** D. Pfitzer, C. Scalley, B.A. Caldwell, and D.P. Batzer. 2013. Impacts of annual flow variation on the aquatic macroinvertebrate community of the Chattahoochee River (2001-2011). Chattahoochee River National Recreation Area, National Park Service Headquarters, Sandy Springs, GA, USA. Oral presentation (45 min).

**Holt, C.R.** 2010. Conservation programs at Callaway Gardens. Columbus State Tri-Beta Biological Honor Society. Oral presentation (45 min).

**Holt, C.R.** 2010. Conservation programs at Callaway Gardens. Auburn University Society for Conservation Biology. Oral presentation (45 min).

## **HONORS AND AWARDS**

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<b>1<sup>st</sup> place in the Oral Paper Competition</b>	<b>2015</b>
Society of Wetland Scientists South Atlantic Chapter Meeting, Athens, GA	
<b>Outstanding Teaching Assistant Award, University of Georgia</b>	<b>2015</b>
<b>C.M. Beckham Award – 1<sup>st</sup> place in the Ph.D. Oral Paper Competition</b>	<b>2014</b>
Georgia Entomological Society Annual Meeting, Valdosta, GA	

**2<sup>nd</sup> place in the Oral Paper Competition** 2014  
H.O. Lund Week, UGA Dept. of Entomology, Athens, GA

**Ag & Art Competition – Honorable Mention (Photography)** 2013  
UGA College of Agriculture and Environmental Sciences

***The Chancellor’s List*** 2005 – 2006

**Outstanding Greek Emerging Leader** 2003  
Centre College

### **PROFESSIONAL ACTIVITIES**

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**Society of Wetland Scientists – South Atlantic Chapter Meeting** 2015  
Meeting Committee  
Session Moderator

**Center for the Integration of Research, Teaching, and Learning – UGA** 2014  
CIRTL Associate

**H.O. Lund Entomology Club** 2012 – present  
President 2014 – 2015  
Vice-president 2013 – 2014

**Georgia Entomological Society, 2016 Meeting Committee** 2015

**Georgia Science and Engineering Fair**  
Junior Section Judge 2013, 2015  
Special Awards Judge 2015

**The American Chestnut Foundation, Board Member** 2010 – 2012

**Beta Beta Beta Biological Honor Society, Historian** 2004 – 2005

**Centre College Biology Department, Student Representative** 2003 – 2005

### **PROFESSIONAL MEMBERSHIPS**

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Society of Freshwater Science

Society of Wetland Scientists

Golden Key International Honour Society

Omicron Delta Kappa Leadership Honor Society

Order of Omega Greek Leadership Society

## **VOLUNTEER & OUTREACH**

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<b>Rivers Alive River Monitoring, Athens, GA</b>	2015
<b>University of Georgia Entomology Outreach Events, Athens, GA</b>	
Extra Special People	2012
Insect Zoo	2013
Terrapin Mardi Gras Celebration – Entomology Table	2013
Experience UGA	2014
Insectival, Georgia State Botanical Gardens	2013, 2014
Athens Academy Pre-K Program	2015
<b>Safe Space (LGBTQ community) Training &amp; Outreach, Auburn, AL</b>	2010
<b>Reforestation of Clarks Run, Danville, KY</b>	2004
<b>ESL Tutor, Junction City Elementary School, Junction City, KY</b>	2003
<b>Boyle County Humane Society volunteer, Danville, KY</b>	2002 – 2005