**Courtney McDaniel** (née Holt)

Assistant Professor

Department of Environmental Science and Ecology

The College at Brockport, State University of New York

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**Education**

**Ph.D. Entomology**,University of Georgia **May 2016**

Dissertation: 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: A floristic study of Weaver Creek wetland, Santa Rosa County, Florida

**B.S. Biology**, Centre College **May 2005**

Minor: Environmental Studies

**Teaching Experience**

**Instructor of Record**

Aquatic Invertebrate Ecology, SUNY Brockport Spring 2019

Freshman Academic Planning Seminar, SUNY Brockport Fall 2018

Global Environmental Issues, SUNY Brockport Spring 2018, Spring 2019

Stream Ecology, SUNY Brockport Spring 2018

Ecology, SUNY Brockport Fall 2017, Fall 2018

**Laboratory Teaching Assistant**

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

Aquatic Entomology Lab, University of Georgia Spring 2014

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

Anatomy and Physiology II Lab, Auburn University Spring 2008

Principles of Ecology Lab, Auburn University Spring 2007, Fall 2007

Principles of Biology I Lab, Auburn University Fall 2005 – Fall 2007

**Publications (Refereed)**

**McDaniel, C.H.,** J.V. McHugh, and D.P. Batzer. 2019. Colonization of drying temporary wetlands by *Coptotomus loticus* (Coleoptera: Dytiscidae): a unique strategy for an aquatic wetland insect. Wetlands Ecology and Management 27: 627-634.

**McDaniel, C.H.** and D.P. Batzer. 2019. Effects of river regulation beyond the channel: multifaceted changes within a group of invertebrate floodplain specialists. Wetlands 39: 87-98.

Ruhi, A., X. Dong, **C.H. McDaniel**, D.P. Batzer, J.L. Sabo. 2018. Detrimental effects of a novel flow regime on the functional trajectory of an aquatic invertebrate metacommunity. Global Change Biology 24: 3749-3765.

**McDaniel, C.H.**, J.V. McHugh, D.P. Batzer. 2017. Congeneric predaceous diving beetle species fail to segregate in a floodplain system: a case of amplified sympatry. Environmental Entomology 46: 494-501.

**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.

Mendelssohn, 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. 2nd 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 & Technical Reports)**

Stevens, L.E., **C.H.** **McDaniel**, J.H. Holway, and C. Ellsworth. 2017. Colorado River benthic foodbase studies in Glen and Grand Canyon: Year 1 final report. Western Area Power Administration, Salt Lake City, UT.

**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.

**Publications In Prep/Review (\*denotes undergraduate student)**

**McDaniel, C.H.**, J.H. Holway\*, C. Ellsworth, and L.E. Stevens. In review. Distribution and potential impacts of benthic hyporheic anoxia in the Colorado River at Glen Canyon Dam. *In review at Environmental Monitoring and Assessment*.

Miller, K.R, and **C.H. McDaniel**. In prep. Teaching science as a process of inquiry in an online biology laboratory environment. *To be submitted to: Internet and Higher Education.*

\*Beers, D., M. Chislock, and **C.H. McDaniel**. In prep. Land-use impacts on water quality and aquatic macroinvertebrate communities in the Genesee River, New York.

**Student Mentoring**

**Graduate students:**

Emelia Yost (Major Advisor) 2019 – present

Christopher Mitchell (Thesis Committee Member) 2019 – present

Madelynn Edwards (Major Advisor) 2018 – present

Emily Anderson (Education Master’s Student) 2018

Paige Bucholz (Thesis Committee Member) 2018 – present

Jeremy Brady (Thesis Committee Member) 2017 – 2018

**Undergraduate students**:

Ryan Fitzpatrick 2019 – present

James Cusimano 2019 – present

Kati Gierlinger 2019 – present

Dan Beers 2018

Jordan Brown 2018 – 2019

Josh Marchner 2018

Joe Knight 2017 – 2018

McKenzie Wybron 2017

**Funding**

**Great Lakes Research Consortium Small Grants Program ($24,994) 2020**

Preventative and restorative measures to mitigate the impacts of emerald ash borer (*Agrilus planipennis*) and hemlock woolly adelgid (*Adelges tsugae*) invasion in Bergen Swamp, NY

**St. Lawrence River Research and Education Fund (submitted; $34,697) 2019**

Macroinvertebrate community structure in constructed wetlands of Wilson Hill WMA

**United University Professionals Individual Development Grant ($1064) 2019**

Impacts of two invasive forest pests on Bergen Swamp plant communities

**New York State Water Resources Institute Research Grant (not funded; $10,000) 2018**

Use of filamentous bacterial growth on stream macroinvertebrates as an indicator of nutrient enrichment.

**Joseph Makarewicz Faculty Research Development Fund, SUNY Brockport ($2000) 2018**

Macroinvertebrate communities of St. Lawrence River constructed wetlands.

**Erie Canal Interdisciplinary Lab Grant ($570) 2018**

Community service on the Erie Canal: an interdisciplinary module for Global Environmental Issues.

**American Association of University Women American Dissertation Fellowship 2015 – 2016**

**($20,000)**

**The Wetland Foundation Student Travel Grant ($1200) 2015**

**UGA Graduate School Travel Funding ($500) 2014**

**Society of Wetland Scientists, South Atlantic Chapter Student Travel Grant ($500)**  **2014**

**Society of Wetland Scientists Student Research Grant ($1000) 2013**

Impacts of flow regulation on floodplains of the Savannah River: response of *Neoporus*

(Coleoptera:Dytiscidae), a potential bioindicator organism.

**Society of Wetland Scientists South Atlantic Chapter Research Grant ($730) 2013**

Impacts of flow regulation on floodplains of the Savannah River: response of *Neoporus*

(Coleoptera:Dytiscidae), a potential bioindicator organism.

**National Park Service Research Grant ($20,000 awarded to Dr. Darold Batzer)**  **2013**

Impacts of flow variation from 2001-2011 on aquatic invertebrate communities

downstream of the Buford Dam on the Chattahoochee River.

**UGA Interdisciplinary Life Sciences Fellowship ($24,000) 2012**

**Presentations (\*denotes undergraduate student)**

**McDaniel, C.H**., L.E. Stevens, J.H. Holway\*, and C. Ellsworth. 2019. River regulation consequences and surprises: benthic and hyporheic anoxia in the Colorado River, Glen Canyon National Recreation Area. Glen Canyon Dam Adaptive Management Workgroup Meeting, Tempe, AZ.

Beers, D.\*, M. Chislock, and **C.H. McDaniel**. 2018. Effects of agricultural land use on water quality and macroinvertebrate communities in the Genesee River, NY. Rochester Academy of Sciences Annual Meeting, Geneseo, NY.

Beers, D.\*, M. Chislock, and **C.H. McDaniel**. 2018. Effects of agricultural land use on water quality and macroinvertebrate communities in the Genesee River, NY. Undergraduate Research Conference, SUNY Brockport, Brockport, NY.

Marchner, J.\* and **C.H. McDaniel**. 2018. Macroinvertebrate community dynamics in Lake Ontario coastal wetlands. New York State Wetlands Forum, Watkins Glen, NY.

Stevens. L.E., **C.H. McDaniel,** J. Holway\*, C. Ellsworth. 2017. Hyporheic anoxia in the Glen Canyon Dam tailwaters and its impacts on river ecosystem ecology. Grand Canyon Guide Training Seminar, Marble Canyon, AZ.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

Batzer, D., H. Wu, **C.R. 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.

**Holt, C.R**. and G.W. Folkerts. 2006. Steepheads: biotic and abiotic characteristics. Auburn University Department of Biological Sciences Seminar.

**Holt, C.R.** and A.E. Lubbers. 2003. The status of wild American ginseng in Kentucky. Kentucky Academy of Sciences Annual Conference.

**Invited Presentations**

**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.

**Holt, C.R**. 2010. Conservation programs at Callaway Gardens. Columbus State Tri-Beta Biological Honor Society.

**Holt, C.R.** 2010. Conservation programs at Callaway Gardens. Auburn University Society for Conservation Biology.

**Research Experience**

**Postdoctoral Scholar, Springs Stewardship Institute, Flagstaff, AZ January 2016 – April 2017**

* Developed and assisted with freshwater ecology research projects
* Performed statistical analyses of large datasets (including multivariate statistical analyses)
* Assisted with grant writing program & 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**

**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

**Honors and Awards**

**Discretionary Salary Award, Division of Academic Affairs 2018**

SUNY Brockport

**Presidential Award for Excellence in Teaching, Nominee** **2018, 2019**

SUNY Brockport

**1st place in the Oral Paper Competition 2015**

Society of Wetland Scientists South Atlantic Chapter Meeting, Athens, GA

**Outstanding Teaching Assistant Award, University of Georgia 2015**

**C.M. Beckham Award – 1st place in the Ph.D. Oral Paper Competition 2014**

Georgia Entomological Society Annual Meeting, Valdosta, GA

**2nd 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**

**Professional & Service Activities**

**Internship Coordinator, Dept. of Environmental Science & Ecology 2019 – present**

**Summer Undergraduate Research Program 2018, 2019**

Poster judge

Research mentor

**Teaching and Learning Day, Center for Excellence in Learning and Teaching, 2019**

**SUNY Brockport**

Participant

**International Association of Great Lakes Research Annual Meeting 2018 – 2019**

Planning Committee

**General Education Program Assessment Committee**, SUNY Brockport **2018 – 2019**

Assessment Committee Leader for Oral Communication component

**Water Education Collaborative,** Monroe County, NY  **2018 – present**

**Departmental Seminar Coordinator**, SUNY Brockport **2017 – present**

**Academic Advisor,** SUNY Brockport **2017 - present**

**Search committee member,** SUNY Brockport **2017, 2018**

Associate Professor of Wetland Science

Assistant Professor of Fisheries Ecology

**Peer reviewer 2016 – present**

Hydrobiologia

Science of the Total Environment

Journal of Hydrology

Journal of Fish and Wildlife Management

**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 – 2015**

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**

American Association of University Women

Society of Freshwater Science

Society of Wetland Scientists

International Association for Great Lakes Research

**Volunteer & Outreach**

**Erie Canal Clean Sweep Event Coordinator, Brockport, NY** 2019

**Wild Wings Supply Drive Event Coordinator, Honeoye Falls, NY** 2018

**Rivers Alive River Monitoring, Athens, GA** 2015

**University of Georgia Entomology Outreach Events, Athens, GA**

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

**Safe Space Training & Outreach, Auburn, AL** 2010

**Reforestation of Clarks Run, Danville, KY** 2004

**ESL Tutor, Junction City Elementary School, Junction City, KY** 2003

**Boyle County Humane Society volunteer, Danville, KY** 2002 – 2005