**Rachel M. Laker**

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**Education**

**Miami University**

Double Major: ­Bachelors of Science in Geology (GPA 3.74)

Bachelors of Music in French Horn Performance (GPA 3.99)

**Awards And Honors**

Donna Clare Sheley Scholarship (2015-2016)

­Pamela Eileen Poccia Award (2015-2016)

­David Morrow Field Geology Award (2015)

­Winter Term Grant (2013-2016)

­Redhawk Excellence Scholarship (2012-2016)

­Undergraduate Summer Scholar Award (2014-2015)

­Radabaugh Geology Scholarship (2013-2014)

­Steuk Music Award (2013-2014)

­Carl E. Limper Scholarship for Outstanding Geology Academic Performance (2012-2013)

­Julie B Coleman Scholarship (2012-2013)

­President’s List, one semester

­Dean’s List, five semesters

**Geology Course Work**

Physical Geology

­Mineralogy

Paleontology/Historical Geology

Sedimentology/Stratigraphy

Igneous/Metamorphic Petrology

Structural Geology

Field Geology

Contaminant Hydrogeological Modeling

Geohazards

Geochemistry

Historical Geology of Argentina

Paleoclimatology

Geomorphology

Ice Age Earth

**Research Experience**

**Ichnology of the Jurassic Stump and Curtis Formations, Utah; 2015**

Described trace fossil assemblages at several localities to interpret paleoenvironmental setting and sequence stratigraphic context. Awarded $4,000 through Undergraduate Summer Scholars program to support research. Presented findings at 2015 GSA National Meeting in Baltimore, Maryland.

**Museum Exhibit Design; 2015**

­Designed interactive and educational exhibits in the new geology museum. Created interesting designs that were appealing to the public while learning how to engage a diverse audience.

**Applying Alexander Technique to Horn Performance; 2015**

­Enhanced the understanding and applications of the Alexander technique through body mapping and practice. Improved understanding of body and performance mentality.

**Organology and Construction of Ethnic Instruments; 2015**

­Explored global systems of tuning, construction, and classification of instruments. Built varying types of ukuleles to apply research knowledge.

**Insect Herbivory Analysis of PETM Plant Fossils; 2013-2014**

­Analyzed fossil leaf specimens to quantify percent surface area damaged to analyze changes in pCO2 following the Paleocene/Eocene Thermal Maximum. Presented a poster at the Miami Undergraduate Research Forum and am a co-author with Ellen Currano on a manuscript currently in review with Global Change Biology.

**Hydrocarbon Exploration of the Appalachian Basin; 2013-2014**

­Digitized well logs to map the Marcellus Shale formation. Worked along with 12 other students in collaboration with Wrightstone Energy Consulting.

**Meeting Abstracts/Presentations**

Laker, R.A., and Currie, B.S., 2015, Ichnology of the Upper Jurassic Curtis and Stump formations, central and northeastern Utah: Relationships between paleoenvironmental setting and sequence stratigraphic position, Geological Society of America Annual Meeting Abstracts with Programs, v. 45, no. 7.

Stradtman, H.E., and Laker, R.A., 2014, Consequences of elevated temperature and pCO2 on insect folivory at the ecosystem level: Perspectives from the fossil record. Miami University Undergraduate Research Forum, C18, p 26.

Adams, E.N., Thrailkill, A.M., Vogt, S.G., Kelly, S.R., Morris, C.M., Skaggs, J.D., Grope, C.L., Lee, M.K., **+**Colliver, L.A., Pratschler, M.E., Laker, R.M., Lee, D.A., Scott, D.H., and Currie, B.S., 2014, Hydrocarbon Potential of Devonian Shales in the Northern Appalachian Basin of Pennsylvania, West Virginia, and Ohio. Miami University Undergraduate Research Forum, C04, p 25.

Thrailkill, A.M., Adams, E., Vogt, S.G., Morris, C.M., Kelly, S.R., Skaggs, J.D., Colliver, L.A., Lee, M.K., Laker, R.M., Pratschler, M.E., Lee, D.A., Scott, D.H., and Currie, B.S., 2014, Stratigraphic architecture of the Upper Devonian Burket Shale in the northern Appalachian Basin of Pennsylvania, West Virginia, and Ohio. Miami University Undergraduate Research Forum, C03, p. 25.

Vogt, S.G., Thrailkill, A., Morris, C.M., Kelly, S.R., Skaggs, J.D., Lee, M.K., Colliver, L.A., Pratschler, M.E., Lak­er, R.M., Lee, D.A., Scott, D.H., and Currie, B.S., 2014, Subsurface correlations and stratigraphic architecture of the Middle Devonian Marcellus Shale, northern Appalachian Basin, Miami University Undergraduate Research Forum, B82, p. 23.

**Study Abroad/Study Away Experience**

**Trinidad (**Winter 2016) - Competed with the Silver Stars Steel Orchestra in the International Panorama Competition.

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­**Summer Geology Field Camp** (Summer 2015) - Created geologic maps across Idaho, Wyoming, and Montana as part of the geology capstone requirement.

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­**Argentina** (Winter 2015) - Lived with Argentine families and traveled across central Argentina. Undergraduate Teaching Assistant for GLG 111.

**Student/Professional Activities**

**CSO concert: Nova Intern; 2015-2016**

Studied directly under Cincinnati Symphony brass members to design interactive performances to educate the community. Enhanced chamber music and teamwork skills, performed alongside CSO members.

**Miami University Geological Society; 2013-2016**

Served as Secretary (2014-2015) and Vice President (2015-2016).

**Miami University Brass Guild; 2014-2016**

Served as Vice President (2015-2016).

**Miami University Wind Ensemble; 2012-2016**

**Miami University Steel Drum Band; 2012-2016**

**Zero Waste Ambassador; 2014-2016**

Employed by Miami University. Promoted energy-efficient habits and educated the public about recycling during hockey games.

**Undergraduate Teaching Assistant; 2015**

Provided assistance for the professor of undergraduate Sedimentology and Stratigraphy (GLG 301) in both lab and lecture. Also assisted in teaching introductory physical geology (GLG 111 Dynamic Earth) study-abroad course in Argentina during 2015 winter term.

**Government Relations Network Lobbyist and Researcher; 2014**

Lobbied legislators in Columbus, OH and Washington, DC. for STEM research funding in higher education. Efforts secured state funding for $26 million renovation of Miami University Department of Geology/EES offices laboratories, and classrooms (Shideler Hall).

**College of Arts and Science Student Ambassador; 2013-2016**

Selected to represent Miami University to speak with prospective students and parents.