

# Athena M. Owen Nagel

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## Curriculum Vitae

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### Formal Education

- PhD, Earth and Atmospheric Sciences. Mississippi State University, Aug, 2014
  - Dissertation: “Investigation of macro and micro scale void spaces: Preservation, modeling and biofilm interactions”
  - Advisor: Dr. John Mylroie
- Masters of Science, Geosciences emphasis on geology, Mississippi State University, Aug. 2007.
  - Thesis: “Tafoni Cave in Quaternary Carbonate Eolianites: Examples from the Bahamas”.
  - Advisor: Dr. John Mylroie
- Bachelor of Science in Geology with biology minor, University Central Missouri, July, 2004.

### Certifications

- 2018 Quality Matters Online Teaching Certification
- 2015 Maroon Institute for Writing Excellence, Mississippi State University
- 2010 Distance Learning, Mississippi State University
- 2007 GIS Certification, Mississippi State University,

### Employment History

- ❖ August 2016 to Present- Assistant Clinical Professor  
Mississippi State University
- ❖ Oct 2007 to May 2009 - Environmental Scientist/GIS Specialist on an EPA START Contract  
URS Operating Services
- ❖ Aug 2005 - Dec 2007 - Teaching Assistant/Lecturer  
Mississippi State University
- ❖ Aug 2004 - Aug 2005 - High School Science Teacher  
Carroll Academy

### Professional Organizations

- Geological Society of America, Member, 2003 to Present.
  - Karst Division Member
  - Geoscience Education Division Member
- National Speleological Society Member, 2006 to Present.
- Association of Women Geoscientist 2007 to Present.
- Gamma Theta Upsilon 2011 to Present
- Sigma Gamma Epsilon 2014 to Present
- Southeastern Division of the Association of American Geographers 2017 to Present

### Courses Taught

- ❖ Virtual Field Methods Summer 2020
- ❖ Karst Processes and Landforms Fall 2019, 2020
- ❖ TIG Field Methods Course: Local Field Methods, Summers 2015, -2019
- ❖ Geology II: Earth and Time, Distance Learning, Fall 2014
- ❖ Survey of Geospatial Techniques, on campus Fall 2013
- ❖ Planetary Geology, Distance Learning Fall semesters 2013-2017
- ❖ Principles of GIS, Distance Learning, Fall semesters 2009-2020
- ❖ Geology Processes and Products Distance Learning Spring 2013-2018
- ❖ Natural Hazards, Distance Learning Sum 2012, Spring 2014-2021

- ❖ Geospatial Technologys, Distance Learning, Fall 2009, and Sum 2011
- ❖ Geospatial Methods, Fall of 2009 -2010
- ❖ Introduction to Geodatabases, on campus Spring 2010,
- ❖ Introduction to Geodatabases Distance Learning Spring 2010- 2012
- ❖ Remote Sensing, Distance Learning, Spring 2010 -2011
- ❖ Advanced GIS, Distance Learning, Sum. 2010, and Spring 2011-2012
- ❖ Survey of Earth Science I, On Campus Fall 2011, Fall 2012, Spring 2013.
- ❖ Survey of Earth Science I, Distance Learning. Fall 2007, Sum 2010, 2011, 2013-17, and 2019-20
- ❖ Earth Science Lab Distance Learning Fall 2007, Sum 2010 thur Sum 2011, Sum 2013-2016
- ❖ Landforms, Distance Learning, Spring 2011, 2012, Summer 2014, 2018, 2020
- ❖ TIG Field Methods Course: The Great Plains Storm Chase, Sum semesters 2007, thur 2013
- ❖ TIG Field Methods Course: Lake Superior, Sum semesters 2007, 2009, 2010, 2012
- ❖ TIG Field Methods Course: Outer Banks Trip, Summer 2007
- ❖ Earth Science 1 Lab, on campus, Fall 2005 to Spring 2007
- ❖ Earth Science 11 Lab on campus Spring 2006 to Spring 2007
- ❖ Paleontology Lab on campus Fall of 2006
- ❖ Taught Anatomy and Physiology, Chemistry, and General Science courses to grades 10-12.

### **Research Experience**

- ❖ Online teaching and active learning effectiveness.
- ❖ Uses of Google Earth in online classrooms.
- ❖ Models for teaching geospatial classes via distance learning.
- ❖ Designing and executing detailed sample collection plans, often times for difficult to sample and/or perverse materials
- ❖ Transmission Electron Microscopy sample prep and analysis.
- ❖ Scanning Electron Microscopy sample prep and analysis
- ❖ Cave modeling, volume estimates, with 3D shapefile creation.
- ❖ Karst Survey and analysis on Barbados, and Curacao
- ❖ Coastal Karst surveying and GIS Modeling from Mallorca, Spain
- ❖ Effectiveness surveys for GIS Distance Learning surveying and questionarys.
- ❖ Research on Bahamian karst and psudeokarst features, including work done for the Bahamian government, Bahamas National Trust.
- ❖ Undergraduate research on asphid trilobite fossils collected in and near Deming, New Mexico.
- ❖ Cave and surface surveying and mapping.
- ❖ Thin section, and Gas Chromatogram Mass Spectrometer experiance.
- ❖ GIS mapping of current and historical data along with database development and maintenance.
- ❖ Detailed GIS analysis of potential hazardous waste sites.
- ❖ Project management including budgeting and staffing.
- ❖ Hazardous material sampling and decontamination.

### **Honors and Awards**

- 2020 UPCEA South Region Professional, Continuing and Online Educator Award
- 2020 Online Teaching Award, Center for Distance Education, Mississippi State University.
- Ronald E. McNair Scholar
- Lambda Sigma Society

### **Computer Skills**

- ESRI Arc GIS, Erdas Imagine, Scribe, Microsoft Office Suite including Access and Publisher, Corel Word Perfect, Pathfinder, Compass, Xara X , Blackboard Learn, Canvas.

### **Publications**

**Nagel, A. O.**, Clary, R. M., (2020). Google Earth in Online Geoscience Classrooms. In J. J. Mintzes and E.M. Walter, Eds. Active Learning in College Science: The case for evidence-based practice. Berlin: Springer Nature.

Myroie, J. E., Kambesis, P. N., **Owen-Nagel, A. M.**, Sumrall, J. B., Larson, E. B., Myroie, J. R., and Lace, M. J., (2015), Flank margin cave development at Cala Pi and Cala Figuera, Mallorca Island, Spain. *In* Glumac, B. and Savarese, M., eds., Proceedings of the 16<sup>th</sup> Symposium on the geology of the Bahamas and other carbonate regions.

Kambesis, P. N., Myroie, J. R., Myroie, J. E., Larson, E. B., **Owen-Nagel, A. M.**, and Sumrall, J. B., (2015), Influence of karst denudation on the northwest coast of Curaçao. *In* Glumac, B. and Savarese, M., eds., Proceedings of the 16<sup>th</sup> Symposium on the geology of the Bahamas and other carbonate regions.

**Nagel, A.M.O**, 2014, Investigation of macro and micro scale void spaces: Preservation, modeling and biofilm interactions. Dissertation, Mississippi State University. <http://sun.library.msstate.edu/ETD-db/theses/available/etd-06302014-165532/>

**Owen, Athena, M.** (2013) Tafoni Development in the Bahamas, In Lace M. J., and Myroie, J. E., Eds. Coastal Karst Landforms. Springer Publisher New York, pg.177-205.

Myroie, J.E. Kambesis, P. N. **Owen, A.M.**, Sumrall, J. B. Larson, E. B., Myroie, J.R. (2013) Flank Margin Cave Development at Cala Pi and Cala Giguera, Mallorca Island Spain. In Press in Proceedings of the 15th Symposium on the geology of the Bahamas and other carbonate regions,

**Owen, A. M.**, 2013, Tafoni Development in the Bahamas, In Coastal Karst Landforms, Lace, M. J., and Myroie, J. E., eds., 2013, Coastal Karst Landforms. Coastal Research Library 5, Springer, Dordrecht, 111-126.

Myroie, J. R., Myroie, J. E., Infnate, L. R., **Owen, A., M.**, 2012, Flank margin caves as high resolution sea-level indicators: Studia Universitatis Babeş-Bolyai, Geology, Special Issue 2012, 39-41.

Myroie, J. E., **Owen, A. M.**, Sumrall, J. B., Kambesis, P. K., Lace, M. J., Larson, E. B., and Myroie, J. R., 2012, Quantitative description and coastal mapping of flank margin caves on Mallorca Island, Spain: Studia Universitatis Babeş-Bolyai, Geology, Special Issue 2012, 42-44.

Rodgers III, J. C., **Owen-Nagel, A.**, and Ambinakudige, S. A (2012) Geospatial Online Instruction Model, Review of International Geographical Education Online.

**Owen, A. M.**, Kirkland, B. L., Myroie, J. E., and Fratesi, SD. E., 2010, Serendipitous observations of organic matter in meteoric calcite cement in Holocene eolian calcarenites, San Salvador Island, Bahamas. In Martin, J. B., and Siewers, F., D., eds., Proceedings of the 14th Symposium on the geology of the Bahamas and other carbonate regions, p. 200-208.

Waterstrat, W. J., Myroie, J. E., **Owen, A. M.**, and Myroie, J. R., 2010, Coastal caves in Bahamian eolian calcarenites: Differentiating between sea caves and flank margin caves using quantitative morphology: Journal of Cave and Karst Studies, v. 72, p. 61-74.

**Owen, A.M.**, 2007 Tafoni Caves in Quaternary Carbonate Eoliantes: Examples from the Bahamas, Master's Thesis, Mississippi State University p. 207.

<http://libraty.msstate.edu/etd/show.asp?etd=etd-05142007-143443>.

Mylroie, J. E., Mylroie, J. R., **Owen, A. M.**, and Waterstrat, M. J., 2008, Cave and karst inventory of the Primeval Forest, New Providence Island, Bahamas: Unexpected discoveries. *In* Freile, D., and Park, L., eds., Proceedings of the 13<sup>th</sup> Symposium on the geology of the Bahamas and Other carbonate regions, p. 107-118.

Mylroie, J. E., Mylroie, J. R., **Owen, A. M.**, and Waterstrat, W. J., 2006 (abstract), Abstracts and Program of the 13<sup>th</sup> Symposium on the Geology of the Bahamas and Other Carbonate Regions, Gerace Research Center, San Salvador Island, Bahamas, p. 18-19.

**Owen, A. M.**, and Loch, J.D. 2002 “The Depositional Time Frame of the “José” Formation through the Analysis of the Trilobite Species *Aulacoparia huysenae*”, (abstract) McNair Journal, CMSU.

### **Presentations:**

Clary, R.M., **Owen Nagel, A.**, & Shows, E. (2020). Geology around me: Leveraging local environments in online introductory geology courses. *Geological Society of America Abstracts with Programs*, 52 (6). doi: 10.1130/abs/2020AM-358064

Clary, R.M., **Nagel, A. O.**, Shows, E. Our State has a (geological) history: Leveraging Mississippi’s Geology in an Online Historical Geology Course. Mississippi Academy of Sciences. February 2020.

**Nagel, A. O.**, Clary, R. M. and Shows, E. 2019 Challenges and successes in Design and Construction of Place-Based Online Introductory Geology Courses. Geologic Society of America Abstracts with Programs. 51(5) ISSN 0016-7592 doi: 10.1130/abs/2019AM-337540. Session 199.

Leesburg, J. Clary R. M., **Owen, A. M.** 2019 Virtual Field Excursions: A Viable Alternative for Educating and Engaging Local Communities while Protecting Sensitive Sites. Geologic Society of America Abstracts with Programs. 51(5) ISSN 0016-7592 doi: 10.1130/abs /2019AM-341046.

Mylroie, J. E., Kambesis, P. N., Lace, M. J., Larson, E. B., Mylroie, J. R., **Owen-Nagel, A. M.**, and Sumrall, J. B., 2019, Geologic Interpretation of the karst features of northern Curacao. In Shrewsbury, W., ed., 2019 NSS Convention Program, p. 84.

Clary, R. M., **Nagel, A. O.** and Shows, E. Geology for All Mississippians: MSVCC Online Courses Extend Geology Course Opportunities Throughout the State., Mississippi Academy of Sciences. 83 Annual Meeting. Presentation February 2019.

Clary, R. M., **Nagel, A.O.**, Teaching Earth: How Place-Based, Engaging Online Geoscience Courses Can Reach All Learners. Society for College Science Teachers, National Science Teachers Association. Accepted. Presentation April 2019.

Lalk, S.R., Sherman- Morris, K., **Nagel, A. O.**, Rodgers, J.C., Individual Awareness of Regional Geosciences Resources and the Potential Influence of Community Size. American Association of Geographers. Accepted. Presentation April 2019.

**Owen, A. M** and Clary, R.M., 2018 Active Learning Strategies in Introductory Geosciences Courses: Successes and Challenges with Online Course Development. Geologic Society of

America National Meeting Program. Session 210.  
<https://gsa.confex.com/gsa/2018AM/webprogram?Paper318709.html>.

Radencic Lalk, S. Sherman-Morris, K, **Nagel, A. O.** and Rodgers, J. C. Can Community Size Influence Individual Awareness of Regional Geosciences Resources?, Southeastern Division of the Association of American Geographers. 72nd Annual Meeting. 11/19-20/ 2017

Lace, M. J., Albury, N. A., **Owen, A. M.**, Mylroie, J. E., and Mylroie, J. R., 2016 (abstract), Bahamian Update: Field Work on Cat Island, Exuma, Long Island, New Providence, and Rum Cay, 2014-2016.

2016 National Speleological Society Convention Program, p. 91-92.

**Owen, A. M.**, Mylroie, J.E., Sumrall, J.B., Kambesis, P.N., Lace, M. J., Larson, E., Mylroie, J.R. 2014 Protected Vs. Exposed Flank Margin Cave Distribution on Mallorca Island, Spain. Friends of Karst Meeting, Jasper, Arkansas September 17-21.

Mylroie, J. E., Kambesis, P. N., **Owen-Nagel, A. M.**, Sumrall, J. B., Larson, E. B., Mylroie, J. R., and Lace, M. J., 2012 (abstract), Preservation of flank margin caves at Cala Pi and Cala Figuera, Mallorca Island, Spain. Convention Program, National Speleological Society, p.78-79.

Kambesis, P. N., Mylroie, J. R., Mylroie, J. E., Larson, E. B., **Owen-Nagel, A. M.**, Sumrall, J. B., and Lace, M. J., 2012 (abstract), Karst denudation on the northwest coast of Curacao. Convention Program, National Speleological Society, p.78.

Kambesis, P. N., Mylroie, J. R., Mylroie, J. E., Larson, E. B., **Owen-Nagel, A. M.**, Sumrall, J. B., and Lace, M. J., 2012 (abstract), Influence of karst denudation on the northwest coast of Curacao. 16<sup>th</sup> Symposium on the geology of the Bahamas and other carbonate regions program, Gerace Research Centre, p.34.

Mylroie, J. E., Kambesis, P. N., **Owen-Nagel, A. M.**, Sumrall, J. B., Larson, E. B., Mylroie, J. R., and Lace, M. J., 2012 (abstract), Flank margin cave development at Cala Pi and Cala Figuera, Mallorca Island, Spain. 16<sup>th</sup> Symposium on the geology of the Bahamas and other carbonate regions program, Gerace Research Centre, p.37.

S. Ambinakudige, **A. Owen**, & J. Rodgers. 2011, teaching geospatial technologies on distance learning: challenges and experiences. AAG meeting at Seattle April 12-15, 2011.

**Owen, A. M.**, Kirkland, B. L., Mylroie, J. E., and Fratesi, S. B., 2008 (abstract), Serendipitous observations of organic matter in meteoric calcite cement in Holocene eolian calcarenites, San Salvador Island, Bahamas. Abstracts and Program, 14<sup>th</sup> Symposium on the Geology of the Bahamas and Other Carbonate Regions. Gerace Research Centre, p. 17-18.

Mylroie, J. R., Mylroie, J. E., **Owen, A. M.**, and Waterstrat, W. J., 2008 (abstract), Coastal caves in Bahamian eolianites: Origin as flank margin caves, sea caves, and tafoni caves. Program, National Speleological Society Annual Convention, p. 104-105.

Kirkland, B.L., Lynch, F.L., Folk, R.L., **Owen, A.M.**, Mylroie, J.E., Culpepper, J.D., and Funderburk, W.K. 2008 (Abstract) Role of Organic Matter in Precipitation of Cement: Examples from Three Different Environments: Proceedings of the National AAPG 2008 Convention.

Myloie, J. R., Myloie, J.E., **Owen, A.M.**, Waterstrat, W.J., 2007 (Abstract) Differentiation of flank margin caves, sea caves, and tafoni caves in Bahamian Quaternary eolian calcarenites: Geologic Society of America, Abstracts with programs, Vol. 39, No. 6, p. 78

Myloie, J. E., Myloie, J. L., Lascu, I., **Owen, A. M.**, Roth, M. J., Stafford, K. W., and Waterstrat, W. J., 2007 (abstract), Use of morphometric analysis to characterize flank margin caves: Coastal cave development in Puerto Rico: International Conference on Karst Hydrology and Ecosystems Abstracts and Program, p. 24.

Myloie, J. R., Myloie, J. E., **Owen, A. M.**, and Waterstrat, W. J., 2007 (abstract), Differentiation of flank margin caves, sea caves, and tafoni caves in Bahamian Quaternary eolian calcarenites, Geological Society of America.

Myloie, J. E., Myloie, J. R., **Owen, A. M.**, and Waterstrat, W. J., 2006 (abstract), Cave and karst inventory of the Primeval Forest, New Providence Island, Bahamas: Unexpected discoveries: Abstracts and Program of the 13<sup>th</sup> Symposium on the Geology of the Bahamas and Other Carbonate Regions, Gerace Research Center, San Salvador Island, Bahamas, p. 18-19.

**Owen, A. M.**, Waterstrat, W. J., Myloie, J. E. and Myloie J. R., 2006 (abstract), A morphological comparison of tafoni and flank margin caves, San Salvador Island, Bahamas: Geological Society of America, Abstracts with Programs, v. 38, no. 7, p. 62.

Waterstrat, W. J., **Owen, A. M.**, Myloie, J. E. and Myloie J. R., 2006 (abstract), Coastal caves in Quaternary eolian calcarenites of the Bahamas: Sea caves or breached flank margin caves?: Geological Society of America, Abstracts with Programs, v. 38, no. 7, p. 60.

**Owen, A. M.**, and Loch, J. D., 2003 “Determining Species of Effaced Trilobites using Statistical Analysis” North Central Section, Geological Society of America, Abstracts with Programs,

**Owen, A. M.** and Loch J. D., 2003. “The Depositional Time Frame of the “José” Formation through the Analysis of the Trilobite Species *Aulacoparia huygena*” Heartland Research Conference.

### **Grants and Fellowships**

#### *Funded:*

2019-2020 PI Mississippi State University Otiliee Shillig Special Teaching Project Program Investigations with Virtual Geologic Specimens, 2990.00.

2019-2020 CoPI Geosciences: Recruitment and Supplemental Funding. Mississippi State University Office of the Graduate School, \$10,000.

2018-2019 CoPI, Geosciences: Recruitment and Supplemental Funding. Mississippi State University Office of the Graduate School, \$25,000.

2018-2021 CoPI, NSF IUSE: GP-IMPACT: Geosciences Streamlined Pipeline and Research for Community Colleges (Geo-SPARCC), \$325,626.00 (Award ID 1801306)

2017-2018 CoPI, Geosciences: Recruitment and Supplemental Funding. Mississippi State University Office of the Graduate School, \$30,000.

### **Current Master’s Students**

Jessica Leesburg (Co Mentor with Renee Clary)

Alexa Newton

### **Committee Member**

J. Moffitt MS in Geosciences awarded August 2020, Mississippi State University

