

Riley J. Balikian

Illinois State Geological Survey | Prairie Research Institute
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EDUCATION

University of Illinois Urbana-Champaign, Illinois
Ph.D. Geology (In Progress)

University of Wisconsin-Madison Madison, Wisconsin
M.S. Environment and Resources | M.S. Urban and Regional Planning

- Au Sable Graduate Fellow for Environmental Studies

Wheaton College Wheaton, Illinois
B.S. Physics: Geophysics | Spanish Minor | Human Needs and Global Resources Certificate

- Setter/Defensive Specialist, Men's Volleyball Club Team, 2008-2010. Floor captain 2009-2010
- Guest Writer: *The Wheaton Record*

ABSTRACTS AND PRESENTATIONS (PEER-REVIEWED)

Balikian, R. 2019. *Creeping Hazards: A Forgotten Framework for Transformability and Resilience*. Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems, Portland, OR.

Balikian, R., Larson, T.H., Thomason, J. 2019. *Electrical Tomography and 3D Geophysical Models Towards Informed Land-Use Planning in Glacial Fluvial Outwash Plain*. Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems, Portland, OR.

Grimley, D., Szocinski, P., Larson, T.H., **Balikian, R.** 2018. *Surficial Geology of Pleasant Mount Quadrangle: Bond and Fayette Counties*, Illinois State Geological Survey, Illinois County Geologic Map. Bond-Fayette County, 1:24,000.

Balikian, R., & Larson, T. H. 2018. *Pseudo Three-Dimensional Imaging of Creep Failure in a Highway Embankment Using Two-Dimensional Electric Earth Resistivity*. Oral presentation accepted at the Symposium on the Application of Geophysics to Engineering and Environmental Problems, Nashville, TN.

Larson, T. H., & **Balikian, R.** 2018. *In-Situ Cassava Root Size Measurement Using Ground Penetrating Radar (GPR)*. Oral presentation accepted at the Symposium on the Application of Geophysics to Engineering and Environmental Problems, Nashville, TN.

Ruiz-Vera, U., Larson, T.H., Mwakanyamale, K., Grennan, A., Souza, A., Ort, D., **Balikian, R.** 2017. *Non-invasive monitoring of below ground cassava storage root bulking by ground penetrating radar technology*. Poster at the 2017 American Geophysical Union Fall Meeting, New Orleans, LA.

Van Engen, K., Mutebi, J., Daring, K., & **Balikian, R.** 2015. *Depoliticizing Climate Change Through Film, Story, and Conversation*. Panel at the Christian Community Development Association National Conference, Memphis, TN.

King, R. S., & **Balikian, R.** 2015. *Food Insecurity: Local Solutions to a National Need*. Oral presentation at the Christian Community Development Association National Conference, Memphis, TN.

Law, C., & **Balikian, R.** 2015. *Business Improvement Districts in the Maintenance of Downtown Infrastructure*. Oral presentation at the 20th Conference on the Small City and Regional Community, Wausau, WI.

Fofanah, M., **Balikian, R.**, Engen, N., Asfaw, F., Busse, H., & Jogo, W. 2015. *Nutrition Sensitive Value Chains: Analysis of Local Production and Marketing Systems of Sweet potatoes in Ethiopia*. Poster presented at the 2nd International Conference on Global Food Security, Ithaca, NY.

TECHNICAL REPORTS

Balikian, Riley, Larson, Timothy H., and Ruiz-Vera, Ursula. 2019. *Report on an In Situ Study of Cassava Roots Using Ground Penetrating Radar*. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H. and **Balikian, Riley**. 2019. *An Electrical Earth Resistivity Survey along Illinois Route 127 in Alto Pass, IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H. and **Balikian, Riley**. 2018. *Preliminary Report of an Electrical Earth Resistivity Survey near Tinley Park, IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H. and **Balikian, Riley**. 2018. *Preliminary Report of an Electrical Earth Resistivity Survey near Greenville, IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H. and **Balikian, Riley**. 2018. *Shear-Wave Measurements Using Multi-Channel Analysis of Surface Wave (MASW) Method at Carle Foundation Hospital, Urbana, IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H., **Balikian, Riley**, and Deng, Siqi. 2017. *Preliminary Report of an Electrical Earth Resistivity Survey near Joliet, IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H., **Balikian, Riley**, and Deng, Siqi. 2017. *Preliminary Report of an Electrical Earth Resistivity Survey near St. Francisville, IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H., **Balikian, Riley**, and Deng, Siqi. 2017. *An Electrical Earth Resistivity Survey along Northbound Illinois Route 251 in Peru, IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

Larson, Timothy H., **Balikian, Riley**, and Thomason, Jason. 2017. *Electrical Earth Resistivity Surveys in McHenry Co., IL*. Technical Report. Champaign, IL: Illinois State Geological Survey.

DATA PROCESSING AND ANALYTIC COMPUTER CODES

All codes available online at: github.com/RJbalikian

Visual Basic and VBA

Code: VBA for processing and visualizing GPR data [[Link](#)]

Description: For use in Scripiter app (Golden Software), calling Voxler app (3D Modelling Software)

MATLAB

Code: MATLAB to clip and pre-process GPR data for volumetric analysis [[Link](#)]

Description: Preprocessing of GPR data to map and trim data to eliminate

Code: Add Topo 2 ERT DAT File, including packaged app [Link forthcoming]

Description: Quickly adds high-resolution topography to ERT data exported in General Array format

Code: XYZ Output for ERT, including packaged app [Link forthcoming]

Description: Combines ERT model data output from Res2DInv with XY data to geolocate ERT data in 3D

Code: Cassava Data Analysis App [Link forthcoming]

Description: MATLAB app to perform various analyses of GPR data for measuring Cassava Roots

Python

Code: Jupyter notebook: Statewide Well Data Manipulation [Link forthcoming]

Description: Convert statewide well data in points to interpolated coarse/fine layers

*Developed with student Ketong Xie

AWARDS AND HONORS

- 2015** Wisconsin Without Borders: Excellence in Community-Based Research (from the Morgridge Center)
- 2015** Student Project Award (Awarded by the Wisconsin Chapter of the American Planning Association)
- 2013** Student speaker (Selected by Wheaton College administration to speak at undergraduate baccalaureate)
- 2013** 1st Place: P.J. Hill Essay Contest (Awarded by the Wheaton College Department of Economics)
- 2013** 1st Place: Wheaton Reflects Senior Essay Contest (Sponsored by the Wheaton College Union)
- 2011** Recipient: Hendrickson Human Needs and Global Resources Scholarship (Wheaton College)

WORK AND RESEARCH EXPERIENCE

- 2017 – Present** **Illinois State Geological Survey** Champaign-Urbana, Illinois
2018 – Present: Visiting Senior Scientific Specialist: Geophysicist & Hydrogeologist
2017 – 2018: Geophysics Field Scientist
- 2014 – 2016** **University of Wisconsin Ethiopia Twinning Partnership** Madison, Wisconsin
2015-2016: Associate Outreach Specialist
2014-2015: Research Assistant
- 2014 – 2015** **University of Wisconsin-Extension, Local Government Center** Madison, Wisconsin
Business Improvement District Research Assistant
- 2014** **University of Wisconsin-Madison Urban & Regional Planning Department** Madison, Wisconsin
Project Manager, Oneida Community Integrated Food System Project
- 2013 – 2014** **University of Wisconsin-Madison Urban & Regional Planning Department** Madison, Wisconsin
Graduate Research Assistant
- 2013 – 2014** **Wisconsin Department of Natural Resources** Madison, Wisconsin
Water Permit Intake Specialist
- 2013 – 2015** **University of Wisconsin-Madison Facilities, Planning & Management** Madison, Wisconsin
Parking Booth Attendant
- 2013** **Wheaton College Freshman Passage Program** Chicago, Illinois
Freshman Passage Leader: Urban Track

2013 **Divvy Bikeshare** Chicago, Illinois
Bike Checker

FORMAL COURSE INSTRUCTION AND FACILITATION

2018 **GEOL 593: Methods in Applied Geophysics** University of Illinois
Field Facilitator: Coordinated field data collection and provided technical material for lectures

2016 **PL PATH 375: Social-Ecological Systems and Development** University of Wisconsin
Instructor: Prepared course materials, facilitated class sessions, and led and organized field trips

2013 **GEOL 437: Hydrogeology** Wheaton College, IL
Lab Assistant: Assisted students in lab and during field trip

2012 – 2013 **HNGR 117: Third World Issues** Wheaton College, IL
Teacher's Assistant: Facilitated sessions, coordinated guest lectures, prepared class materials

SERVICE AND VOLUNTEERING

2014 – 2019 **Young Evangelicals for Climate Action (YECA)** United States (Nationwide)
2016 – Present: Secretary
2015 – 2016: Treasurer
2014 – Present: Steering Committee Member

2013 – 2015 **Nehemiah Center for Urban Leadership Development** Madison, Wisconsin
LIGHT Program Site Coordinator - Madison East High School

2014 **Community Groundworks at Troy Community Farm** Madison, Wisconsin
Intern

2012 – 2013 **A Rocha Conservation Organization, Wheaton College Chapter** Wheaton, Illinois
Student member

2012 **Wheaton College Deye Mon Haiti (Formerly Haiti-Wheaton Partnership)** Wheaton, Illinois
Student member

2010 – 2011 **World Relief** West Chicago, Illinois
English as Second Language (ESL) Tutor

2009 – 2011 **Honduras Project** Wheaton, Illinois and Tegucigalpa, Honduras
2010 – 2011: Cabinet Member (Team Educator)
2009 – 2010: Student Team Member

2010 **World Relief** Wheaton, Illinois
After School Tutor, Lowell Elementary School

2006 – 2008 **Salvation Army Downtown Shelter** San Diego, California
Volunteer and Youth Organizer

NON-ACADEMIC WRITING & OUTREACH

Balikian, R.. (2018). *The Value of Volunteering*. GeoGradGuide.com. [[Link](#)]

Balikian, R.. (2018). Writing in Rock Blog.

Some Great Falls and a Very Rivery River [[Link](#)]

In the Middle: Kansas, Cowboys, Crossroads, & an American Mediterranean Sea [[Link](#)]
The Precambrian: 20,000 Feet Under the Trees (Part III) [[Link](#)]
The Precambrian: Mystery and Myth (Part II) [[Link](#)]
Groundwar: Geologists in the Trenches [[Link](#)]
The Precambrian: An Origin Story (Part I) [[Link](#)]
The Quiet of the Aging (A Sonnet of Illinois Geology) [[Link](#)]
The Earth is Electric: Resistivity Geophysics [[Link](#)]
Southern Proceedings: The Three Tennessees [[Link](#)]
A Wrinkle in Time (Lapse) [[Link](#)]
From Time Immemorial: The Prevalance of Unremembered Eons [[Link](#)]
The Lakes and the Law of the Sea [[Link](#)]
Geology of Illinois (No, it's not an Oxymoron) [[Link](#)]
How to Build a Moraine (Part II) [[Link](#)]
How to Build a Moraine (Part I) [[Link](#)]
Writing in Rock: An Introduction (Parts I & II) [[Link 1](#)] [[Link 2](#)]

Balikian, R. (2015). "The Awe, the Longing, and All Those Questions." The Covenant Companion.

Balikian, R. (2013). "Reflections on Curiosity and Wisdom." Wheaton College- Senior Reflections on Liberal Arts.

Zhang, S., Phillips, N., **Balikian, R.**, Venkataramanan, G., & Morales, A. (2014). Many Hands Together Make a Home: The Co-Production of Tiny Homes. *Progressive Planning*, (198), 36–39.

Hailu, Z.G., Sanders, R., **Balikian, R.** (2013). *Water & Irrigation for Small-Scale Farmers*. Panel Presentation at the Human Needs and Global Resources Symposium. Wheaton, IL.

PRESS & ACKNOWLEDGEMENTS

Balikian, R., Subramanian, M., Hernandez, D., 2018. *Young Evangelical Christians and Climate Change*. The 21st Radio Show with Niala Boodhoo. Interview Audio [[Link](#)]. Audio for full episode [[Link](#)]

Kroeker, A. (2017). "Nurturing a Holy Curiosity," by Faith Magazine, 23-Aug-2017.

University of Wisconsin Global Health Institute. (2015). "GHI Programs Associate Among Those Honored for Engagement Beyond Campus Borders."
<https://ghi.wisc.edu/ghi-programs-associate-among-those-honored-for-engagement-beyond-campus-borders/>.

[Acknowledgement] J. Dawson and A. Morales, Eds., "Chicago Marketplaces: Advancing Access to Healthy Food," in *Cities of Farmers: Urban Agricultural Practices and Processes*, University of Iowa Press, 2016, pp. 191–210.

[Acknowledgement] A. Morales, "Food Systems for Healthy Places," Built Environment and Public Health Clearinghouse, 14-Dec-2015. [Online]. Available:
<https://gtbephc.wordpress.com/2015/12/14/food-systems-for-healthy-places/>.

[Acknowledgement] C. Law, "Directory of Contacts for Wisconsin Business Improvement Districts (BIDs)," University of Wisconsin-Extension, Madison, WI, Sep. 2015.

Erickson, D. (2015). "As Young Evangelical, He Finds God's Call in Focus on Climate 'Crisis,'" Wisconsin State Journal. Madison, Wisconsin.

Collins, M.B. (2014). "A Partnership: Oneida and the Commons," University of Wisconsin School of Human Ecology.

Schneider, P. (2014). "Madison's tiny houses for homeless an example of 'housing co-production,' says planning journal," The Cap Times. Madison, Wisconsin.

SKILLS AND TRAINING:

- FEMA Training: National Incident Management (NIMS) Introduction (IS-700 – Completed)
- FEMA Training: Introduction to Incident Command System (ICS-100 – Completed)
- Proficient in ESRI Arc suite and QGIS
- Proficient: MATLAB, C++, Javascript; experience with SQL, Visual Basic, Arduino (esp. Uno)
- Proficient in Microsoft Office Suite (Excel, Access, Publisher, Word, Powerpoint)
- Proficient in various geophysical software, including Res2dInv, GPR-Slice, GeoScene3D and others
- Conversational in Spanish and Amharic (Ethiopia); Competent in Koine Greek
- Experience with various community facilitation methods