

# **Sarah Radencic Lalk, Ph.D. – Curriculum Vitae**

Assistant Teaching Professor - Mississippi State University - Department of Geosciences  
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## **RESEARCH INTERESTS**

Community Engagement; Informal learning environments; Science communication in movie media; Citizen Science; Geosciences in K12 education; Benefits of outdoor field explorations to increase interest and understanding of geosciences

## **EDUCATION**

### **Doctor of Philosophy in Earth and Atmospheric Science (Dec. 2016)**

Mississippi State University - Dissertation Title:

*Utilization of Outdoor Resources to Enhance Understanding of Geosciences*

### **Master of Science in Geosciences (Aug. 2009)**

Mississippi State University: *Teachers in Geosciences Program (non-thesis)*

### **Science Education Specialist (Aug. 2007)**

Texas A&M University, College Station: Center for Teaching & Learning

### **Bachelor of Science in Education – Interdisciplinary Studies (Dec. 2000)**

Texas A&M University, College Station: **Minor:** Geography

## **PROFESSIONAL APPOINTMENTS**

- Assistant Teaching Professor – Mississippi State University: 2019 - current
- Geosciences Instructor - Mississippi State University: 2016-2018
- NSF G-K12 Project Coordinator - Mississippi State University: 2010-2016
- 6<sup>th</sup>-7<sup>th</sup> Grade Science Teacher – Bryan, TX: 2002-2010
- 6<sup>th</sup> Grade Geography & Science Teacher – Bastrop, TX: 2001-2002

## **AWARDS & DISTINCTIONS**

- **Rod Nave Award** - Southeastern Association of Science Teacher Education: supporting connections between science and science education communities (fall 2022)
- Nominated - College of Arts & Sciences Teaching Award – (spring 2021)
- Center for Community-Engaged Learning Fellowship (2020-2021)

## **TEACHING EXPERIENCE** - Mississippi State University, Fall 2015 – Present

### **New Courses Developed**

- GR 8410 Field Methods Course - Appalachia – online videos (2021) - in person after 2021
- GG4543/6543 Community Engagement in Geosciences - spring 2020 – 2024
  - o Created course for both Starkville campus and distance learning (DL)
  - o Starkville campus course certified **CEL** spring 2021

### **Co-Developed Courses**

- GR 8423 Virtual Field Methods Capstone – summer/fall 2020, summer 2021 - DL
- GG 4523/65423 Coastal Environments – DL - summers 2018 – 2024

### **New Curriculum Developed**

- GR 4223/6223 Geography of Europe – fall 2021
- GR 4243/6243 Geography of Russia - spring 2019 – 2021- 2024
- GR 4253/6253 Geography of Africa - spring 2018 – 2020 -2023
- GG 4503/6503 Geomorphology - fall 2017-2024 (CEL 2020 – 2024)
- GR 1123 HNRS Intro to World Geography - fall 2017-2024 (CEL 2021-2024)
- GG 4333 Professional Geowriting – fall/spring 2016-2024
- GR 2013 Cultural Geography - spring 2016
- GR 1123 Intro to World Geography - 2015-2024 - campus + DL
  - o Developed Common Departmental Curriculum – all formats – 2019
  - o Update supplemental activities and DL videos every two years

### **Primary Instructor** – updated activities/rubrics

- GR 8410 Field Methods Capstone -Western WA– summer 2022 - 2024
- GG 8203 Ocean Science - summers 2017 – 2022 - DL
- GR 8573 Research in Applied Meteorology – Capstone - summer 2017-2019

### **Co-Instructor**

- GR 8410 Field Methods Capstone Western Washington – summer 2016-2019

## **ACADEMIC ADVISING**

### Primary Research Advisor – THESIS / DISSERTATION

- James D Cox – Masters – Geosciences - “Use of Consumer Grade Small Unmanned Aerial Systems (sUAS) for Mapping Storm Damage in Forested Environments” – May 2022 graduate
- Kyle McDill – Geography PhD - fall 2022 start (co-advising)
- Dixie Cartwright – Geography PhD – spring 2023 start (co-advising)

### Committees for Thesis and Dissertation

- Craig Croskery – PhD – Earth & Atmospheric Science – “Protecting the Vulnerable: Tornado Sheltering and Communication of Public Shelters with a Case Study from the COVID-19 Pandemic” – May 2023 graduate
- Jonathan Rich – Masters – Geosciences – “Defining the limits of tectonic reactivation on Mars using Earth analogue analysis and numerical modeling” – May 2023 graduate
- Taylor Patterson – Masters – Geosciences – “Where’s the Food? Food Insecurity and Black Food Geographies in the Mississippi Delta” – May 2024 graduate
- Ben Gunter – Masters - Landscape Architecture – “Assessing the usefulness of the LivingRoom learning gardens at Galloway Elementary School, Partnership Middle School, and Leland Park Middle School for teaching” - August 2022 graduate

- Geosciences PhD Committees: Stephen Wooten, Shaina Wilburn, Karly Lyons
- **NON-thesis Graduate Advising for Distance Learning Graduate ENGS Masters:** advising via WebEx between 10 – 12 online graduate students each year who are enrolled in our online graduate ENGS Master’s program.

## **PROFESSIONAL DEVELOPMENT**

### Developed

- **Starkville Oktibbeha School District** – Excellence Summit – (July 2022): Weather Forecasting for K-12 Classrooms Workshop – activities and resources
- **Great Smoky Mountains Institute at Tremont** – Teacher Escape Weekend (2016): Modeling Lesson: Natural Hazards – Denudation of Slope Environments
- **NSF Hazard TEAMS:** teacher summer professional development (2014, 2015). Developed and led an outdoor geosciences lab activity with the participating K12 teachers modeling erosional processes and possible hazards related to slope failure that can result from erosion
- **NSF GK-12 INSPIRE:** co-organized two-week summer professional development workshops (2010-2015) of local teachers and graduate students partnered to develop classroom activities linked to STEM research.

### Participant

- Writing Learning Outcomes (spring 2023)
- AI in the Classroom (fall 2023)
- Teaching Portfolio Workshop: 4-week summer asynchronous DL course (Summer 2022)
- NAGT (National Association of Geoscience Teachers) Department Workshop (Fall 2021)
- MSU Alan Alda Science Communication Summit (Fall 2020)
- NAGT-SERC-NSF Early Career Workshop (Summer 2020)
- Community-Engaged Learning Fellowship Workshop (Summer 2020)
- Strategies for Larger Classroom Lectures (Spring 2020)
- Creating Effective Community Partnerships (Fall 2019)
- Helping Students Regulate their Learning (Fall 2019)
- CTL 101: Best Practices in Online Instruction (Summer 2016)

## **SERVICE & OUTREACH**

### Geosciences Department

- Center for Community-Engaged Learning (CCEL) - invited panelist (2021 – 2024)
- MSU Library / OER Task Force – invited panelist for use of OER in my courses (2023)
- Department Curriculum Committee Chair – (2023)

- Science Night at the Museum - handheld microscopes with geology samples: (2018 – 2023)
- Graduate Student Recruitment
  - o GEM GRAD Lab Research Poster – recruitment of STEM underrepresented (2022)
  - o CAST - Conference for Advancement of Science Teachers (2016 – 2022)
  - o NSTA - National Science Teachers Association (2017-2018)
- Other Department Committees: Distance Learning Oversight; Alumni; Diversity

### College of Arts & Sciences

- Physics Summer Camp - High School students diagnosed with Autism spectrum disorder (ASD) - organized a day of geosciences activities with colleagues that volunteered (2024)
- Mentor for New Faculty – College of Arts & Sciences (2023 – 2024)
- A&S College Curriculum Committee member (2022 – present)
- Eclipse Committee – organization team for outreach event (2023)

### Mississippi State University

- Center for Distance Education - Online Tools & Showcase – presentation of examples of “humanizing” my online courses to create an online learning community - in person and videoed for others (2024)
- Best of Fair Judge: High School Regional Science Fair hosted at MSU (2014 – 2023)
- Scientific Review Committee Member\* - MSU Science & Engineering Fair (2020 – 2023)
- “Gen Ed” Curriculum Teams – invited by Dr. Dana Franz (2022)
  - o 1) Course Scaffolding for Large Introductory Courses
  - o 2) Geography Representative – “International Passport” Certification – Humanities
- Blue Cross Blue Shield GrOW Curriculum: invited by Dr. Devon Brenner to participate in the development of curriculum scope/sequence with related activity resources for “Gardening and Overall Wellness” GrOW classes for local 6<sup>th</sup>/7<sup>th</sup> grade students (2020)

### Local Community

- Intersession Activities - local school district hosts enrichment camps once each semester, including summer.
  - o Organized week of geoscience related activities - recruited colleagues and included activities from all the fields in our geosciences department: meteorology, geography, geology, and GIS (2023)
  - o Organized a half-day of activities related to natural disasters with a colleague (2024)
- Starkville Library – weather and cloud activity co-developed with Dr. Haney for lower elementary/preschool aged children. (2022)
- Interactive Weather Station –built for Partnership School on MSU campus 2021 – 2022
  - o <https://www.partnership.msstate.edu/impact/msu-department-geosciences-brings-interactive-weather-station-partnership>
- Teacher Professional Development for Weather Station – created workshop for local school district summer training event – 2022

- “Weather Club” – organized meteorology student volunteers to meet with Partnership 6<sup>th</sup> – 7<sup>th</sup> grade students for “weather club” to practice weather predictions and conduct citizen science activities. The club met once a month in spring 2023 and twice a month fall 2023 - spring 2024

#### Other Service & Outreach

- CDC Mobile GIS Training - External Evaluator – CDC Preparedness & Response Center Grant - funded through Geosystems Research Institute at MSU (2019)
- Open Education Resources (OER) Panel – invited panelist for session focused on use of OER in courses hosted by the MSU library (2023)

## **RESEARCH**

### **Publications**

Benjamin L. Gunter, Hans C. Herrmann, Abbey Franovich (Wallace), Warren C. Gallo, **Sarah R. Lalk**; “The LivingRoom, A Low-Cost Prototype Outdoor Classroom and Learning Garden”. Architectural Research Centers Consortium (ARCC) 2023 International Conference. Dallas. (April 12-15) - paper, *submitted & accepted*

### **Conferences - Oral Presentations**

- *Invited*

**Lalk, Sarah.** 2024. Media in the classroom: using “mass media” to teach Geosciences. SAIL/CYMUS annual joint conference. Ocean Springs, MS. May 22 – 24.

- *Submitted & Accepted*

**Lalk, Sarah.** 2024. Experiential Learning: Citizen Science & Community Engagement. Mississippi Academy of Sciences. Hattiesburg, MS. February 28 – March 1.

**Lalk, S. & Gutter, B.** 2022. Citizen Science & Community Engagement: Weather Station Partnership with Local Middle School. Southeastern Association of Science Teacher Education. Gulf Shores, AL. October 7-8.

Crane, K. & **Lalk, S.** 2022. An Introductory-level Planetary Geology Course as a Recruitment Pathway into the Geology Major: Geological Society of America Abstracts with Programs, v. 54, no. 5, <https://doi.org/10.1130/abs/2022AM-379326> (Crane invited)

J. Hendrix, **S. Lalk**, D. Brenner, A. Tullos. 2021 Creating Access to Partnerships Resources to Promote Community Wellness. Mississippi Academy of Science. Biloxi, MS. August 5.

**Radencic-Lalk, S.** Sherman-Morris, K, Nagel, A.O., Rodgers, J.C., 2019. Individual Awareness of Regional Geosciences Resources and the Potential Influence of Community Science. American Association of Geographers. Washington, D.C., April 3-7.

**Radencic-Lalk, S.,** Sherman-Morris, K., Walker, R.M., Schmitz, D.W., Rodgers, J.C., Smith, G.D., McNeal, K.S., 2018. Evaluation of K-12 Activity Modeling Erosional Processes. American Association of Geographers. New Orleans, LA. April 10-14.

**Radencic-Lalk, S.** & Walker, R.W. 2017. Outdoor Inquiry Impacting Classroom Pedagogy: Transferability of Environmental Education Informal Learning and Teaching Strategies. Association of Science Teacher Education. Des Moines, IA. January 12-14.

**Radencic, S.P.**, Walker, R.M., Schmitz, D.W., Pierce, D.M., McNeal, K.S., Bruce, L.M. 2015. Mississippi Science Teachers Utilizing the Cooperative Teaching Model to Increase Perceptions of Effective Communication Methods among STEM Graduate Students. Mississippi Academy of Sciences. Hattiesburg, MS. February 26-27.

**Radencic, S.P.**, Walker, R.M. 2014. A Week in the Wilderness of the Great Smoky Mountains Institute at Tremont: An Outdoor Science Education Course for Graduate and Undergraduate Students. American Geophysical Union Fall Meeting, Section ED14A-05, San Francisco, CA. December 15-19.

**Radencic, S.P.**, Pounders, D., DuFour, J. 2013. Incorporating STEM Research with Technology Inquiry in Low Socioeconomic Classrooms. National Science Teachers Association Annual Conference, San Antonio, TX. April 11-14.

### **Conferences - Poster Presentations**

**Radencic-Lalk, S.** 2020. Community Engagement in Environmental Geosciences. American Association of Geographers. Denver, CO April – *COVID postponed*

**Radencic-Lalk, S.** Sherman-Morris, K., Nagel, A.O., Rodgers, J.C., Schmitz, D.W. 2017. Can Community Size Influence Individual Awareness of Regional Geosciences Resources? Southeastern Division of the American Association of Geographers. Starkville, MS. November 19- 20.

**Radencic, S.P.**, Dawkins, K.S., Jackson, B., Walker, R.W., Schmitz, D.W., Pierce, D.M., Funderburk, W., & McNeal, K.S. 2014. INSPIRE: STEM Graduate Students Bring Current Research into 7<sup>th</sup>-12<sup>th</sup> Grade Science Classrooms. American Geophysical Union Fall Meeting, San Francisco, CA. December 15-19.

### **GRANTS**

#### Funded

- NASA DDAP - Discovery Data Analysis Project - \$105,571 – “Investigating regional tectonics with Mercury’s oldest faults” - Lalk (Co-I) and Crane (I) – FUNDED Spring 2023
- MSU Schillig Grant – “2023 Schillig Project Summary and Review: Digital Microscopy Applications in the Geosciences” – Lak & Haney - \$1190 FUNDED Spring 2023
- Community-Engaged Learning Mini-Grant - \$500 – FUNDED Fall 2022: Proposal for expanding citizen science weather to two local schools and local park with spring 2022 CEL course focusing on citizen science opportunities for the Starkville community.

#### Submitted

Spring 2022 – NSF CTGC – Cultural Transformation in the Geoscience Community - \$294,296.00  
Proposal Title: Geosciences Learning Ecosystems Alliance of Mississippi (GLEAMS): A Community Engaged Pathway to Broadening Geosciences Diversity in Mississippi. Lalk: External Evaluator (PI - Haney)

Spring 2022 – MSU Schilling Grant – Outdoor Geosciences Classroom - \$2303.53 -Equipment proposal for outdoor learning space in the back area of Hilbun (PI - Haney)

### **PROFESSIONAL AFFILIATIONS**

Mississippi Academy of Science (co-chair of science education)	2023 - Present
Southeastern Association of Science Teacher Education	2022 - Present
American Association of Geographers	2017 - Present
Association of Science Teacher Education	2016 - Present
Gamma Theta Upsilon ( <b>faculty sponsor 2022</b> )	2014 - Present
Sigma Gamma Epsilon	2014 - Present
National Science Teachers Association	2012 - Present
National Association of Geoscience Teachers	2009 - Present

### **PROFESSIONAL CERTIFICATIONS**

- NSF Advanced Presentation Boot Camp for Scientists (December 2013)
- NSF Presentation Boot Camp for Scientists (March 2012)  
<http://www.cosee.net/about/highlights/professionaldevelopmentscientists/bootcamp/>
- M-SCOPS: Mathematics and Science Classroom Observational Protocol System
  - o Dr. Carol Stuessy, Texas A&M University (2010)
- International Baccalaureate Educator (2008) - <https://ibo.org/professional-development/>
- Project WILD (2008) - <http://www.projectwild.org>
- NASA Aerospace Scholar - Johnson Space Center, Houston, TX (2007)
- Project Learning Tree - PLT (2007) - <https://www.plt.org>
- Kagan Curriculum Structures of Cooperative Learning (2004)