Christopher J. Baish

Curriculum Vitae

Staff Research Scientist, Geomorphology/Soil Science
Desert Research Institute
212G CRVB, 2215 Raggio Pkwy, Reno, NV 89512
Phone: (775) 673-7616
Email: christopher.baish@dri.edu

Updated August 2021

EDUCATION

Michigan State University, East Lansing, MI
Doctor of Philosophy in Geography, In Progress
Rasmussen Graduate Fellow
Degree GPA: 4.00/4.00
Dissertation title (working): "Meso-Topographic Effects on Soil Genesis and Forest Productivity in Southern Michigan: Implications for Terrestrial Carbon Dynamics"
Advisor: Dr. Randall Schaetzl

Michigan State University, East Lansing, MI
Master of Science in Geography, 2020
Degree GPA: 4.00/4.00
Thesis title: "Glossic Horizon Formation in Coarse-loamy Bisequal Soils*"*
Advisor: Dr. Randall Schaetzl

University of Northern Iowa, Cedar Falls, IA
Bachelor of Arts in Environmental Geography (with Departmental Honors), 2017
Degree GPA: 3.98/4.00
Certificate in GIS and Cartography
Advisor: Dr. Dennis Dahms

REFEREED PUBLICATIONS

(07) Schaetzl, R.J., Miller, B.A., and **C. Baish**. Catenas and Soils. In: Shroder, J. (Editor in Chief), Pope, G.A. (Ed.), Treatise on Geomorphology. Academic Press, San Diego, CA, vol. 4, Weathering and Soils Geomorphology. *Accepted August 2021.*

(06) **Baish, C**. and R.J. Schaetzl. New insights into the origin and evolution of glossic features in coarse-textured soils in northern Lower Michigan (USA). *Soil Science Society of America Journal, Accepted August 2021.*

(05) **Baish, C.**, Sion, B., and E. McDonald. A landform-based predictive mapping approach to estimating soil textural properties in Estonia and Lithuania (II): US analogs. 38 pp. Report prepared for the U.S. Army Corps of Engineers, Engineer Research and Development Center Cold Regions Research and Engineering Laboratory.

(04) **Baish, C.**, Sion, B., Adam, K., Sabol, D., and E. McDonald. A landform-based predictive mapping approach to estimating soil textural properties in Estonia and Lithuania. 34 pp. Report prepared for the U.S. Army Corps of Engineers, Engineer Research and Development Center Cold Regions Research and Engineering Laboratory.

(03) Schaetzl, R.J., Kasmerchak, C., Pavel, S., **Baish, C.**, Hadden, M, and D. Rothstein. 2020. Acidification and weathering associated with deep tongues in sandy Spodosols, Michigan, USA. *Geoderma Regional,* 23. doi:10.1016/j.geodrs.2020.e00332

(02) Schaetzl, R.J., **Baish, C.**, Colgan, P.M., Knauff, J., Bilintoh, T., Wanyama, D., Church, M., McKeehan, K., Fulton, A., and A.F. Arbogast. 2019. Variations in Till Texture and Clay Mineralogy of the Saginaw Lobe (Michigan, USA): Evidence for a Sediment-Mixing Process Model of Till Genesis. *Quaternary Research*, 94, 174-194. doi:10.1017/qua.2019.82

(01) Heinzel, C., **Baish C.,** Dursky, T., and D. Patten. 2017. 2016/17 Dry Run Creek Geomorphological Watershed Assessment. *UNI Conservation Corps Projects*. 1. https://scholarworks.uni.edu/conservationcorps_documents/1.

PRESENTATIONS

(14) Sion, B., **Baish, C.**, and E. McDonald. Soils on a relict geomorphic surface in southern New Mexico (USA) indicate episodic regional scale surface instability. ASA-CSSA-SSSA International Annual Meeting. Salt Lake City, UT. November 7-10, 2021. *Poster.*

(13) **C. Baish.** Predictive mapping of landforms and soils in glaciated landscapes: theory and methods. CRTC-YPG-CRREL-DRI Joint Capabilities Meeting 2021. U.S. Army Cold Regions Test Center (CRTC), Fort Greely, AK. August 5, 2021.

(12) Sion, B., and **C. Baish.** Overview of terrain analysis and mapping methods. YPG-DRI Project Kickoff Meeting 2021. Desert Research Institute, Reno, NV. June 2, 2021.

(11) Schaetzl, R.J., Colgan, P.M., and **C. Baish.** The Interlobate zone between the Saginaw and Lake Michigan lobes of the southern Laurentide Ice Sheet (Michigan, U.S.A.). Geological Society of America, Annual North-Central Section Meeting. Duluth, MN. May 18-19, 2020. *Conference canceled.*

(10) Hadden, M., Schaetzl, R.J., **Baish, C.**, Kasmerchak, C, and P. Samonil. Effects of Preferential Water Flow on Acidification and Weathering in Sandy Soils, Northern Michigan (USA). University Undergraduate Research and Arts Forum. Michigan State University, East Lansing, MI. March 27, 2020. *Conference canceled.*

(09) **Baish, C.**, and R.J. Schaetzl. Modelling the subsurface topography of the Houghton Lake Basin: A smoking gun for Glacial Lake Roscommon. Michigan Academy of Science, Arts, and Letters Annual Meeting. Southfield, MI. March 13, 2020. *Conference postponed to September 26, 2020.*

(08) **Baish, C.,** and R.J. Schaetzl. Genesis of glossic horizons in coarse-loamy bisequal soils of northeastern Lower Michigan. ASA-CSSA-SSSA International Annual Meeting. San Antonio, TX. November 10-13, 2019.

(07) Schaetzl, R.J., **Baish, C.,** Knauff, J., Bilintoh, T., Wanyama, D., McKeehan, K., and M. Church. Spatial Variation in Till Texture and Clay Mineralogy Across the Saginaw Lobe Terrain, Great Lakes Region, USA. INQUA, Annual Meeting. Dublin, Ireland. July 25-31, 2019.

(06) Schaetzl, R.J., Running, G.L., Larson, P.H., Rittenour, T., Faulkner, D., Knauff, J., **Baish, C.**, and S. Kaplan. Loess Deposition and Remobilization in an Ice-Marginal Landscape. INQUA, Annual Meeting. Dublin, Ireland. July 25-31, 2019.

(05) Schaetzl, R.J., **Baish, C.**, and J. Knauff**.** Glacial History of the Houghton Lake Basin as Revealed by Till Textures. Michigan Academy of Science, Arts, and Letters, Annual Meeting. Alma College, Alma, MI. March 3, 2019.

(04) **Baish, C.,** Knauff, J., and R.J. Schaetzl. Spatio-Textural Distribution and Clay Mineralogy of Saginaw Lobe Tills, Central Lower Michigan. Michigan Academy of Science, Arts, and Letters. Annual Meeting. Alma College, Alma, MI. March 3, 2019.

(03) Heinzel, C., **Baish C.,** Dursky, T., and D. Patten. Geomorphic Analysis of the Dry Run Creek Watershed, Black Hawk County (Iowa). Geological Society of America, Annual North-Central Section Meeting. Iowa State University, Ames, IA. April 16-17, 2018. *Poster*.

(02) **Baish, C.**, Heinzel, C., Dursky, T., and D. Patten. Geomorphic Analysis of Dry Run Creek, Cedar Falls, IA. Iowa Academy of Science, Annual Meeting. University of Northern Iowa, Cedar Falls, IA. April 21-22, 2017.

(01) **Baish, C.**, Heinzel, C., Dursky, T., and D. Patten. Geomorphic Analysis of Dry Run Creek, Cedar Falls, IA. Iowa Academy of Science, Annual Meeting. University of Northern Iowa, Cedar Falls, IA. April 21-22, 2017. *Poster*.

GRANTS AND AWARDS

2020   Rasmussen Graduate Fellowship, Michigan State University ($5,000)
        Graduate Office Fellowship, Michigan State University, Department of Geography, Environment, and Spatial Sciences ($528)

2019   Graduate Travel Fellowship, Michigan State University, Department of Geography, Environment, and Spatial Sciences ($950)
        Graduate Office Fellowship, Michigan State University, Department of Geography, Environment, and Spatial Sciences ($1,000)

RESEARCH EXPERIENCE

Staff Research Scientist (Geomorphology and Soils), January 20201 – present
Integrated Terrain Analysis Program (ITAP)
Desert Research Institute, Division of Earth and Ecosystem Sciences
• Provide technical assistance on the development of a landform-based mapping model for estimating soil conditions as they relate to terrain mobility for military activities
• Provide field and laboratory assistance on a variety geomorphology and soil related projects

Graduate Research Assistant*,* August 2019 – December 2020
Randall J. Schaetzl Geomorphology Research Laboratory
Michigan State University, Department of Geography, Environment, and Spatial Sciences
• Provided field and laboratory assistance on a variety geomorphology and soil related projects
• Collected, prepared, and analyzed sediment and soil samples, and compiled and managed data

Undergraduate Research Assistant, August 2016 – May 2017
University of Northern Iowa, Department of Earth and Environmental Science
• Lead undergraduate scientist on a grant funded project to develop a comprehensive geomorphic analysis of the Dry Run Creek watershed, Cedar Falls, Iowa

• Planned and conducted field and laboratory research and reported findings and recommendations to the Dry Run Creek Advisory Board

TEACHING EXPERIENCE

Graduate Teaching Assistant*, August 2018 – December 2020*
Michigan State University, Department of Geography, Environment, and Spatial Sciences
• Teach laboratory course (as teaching assistant) and develop curriculum in *Physical Geography*
• Teach online courses (as instructor) in *Physical Geography* and *Geography of US and Canada*

Teaching Evaluations for Classroom Instruction at Michigan State University
*On a scale from 1=Strongly Agree to 5=Strongly Disagree, students were asked to evaluate the statement: "Instructor did an overall effective job." Lower numbers are better; 1.00 is a perfect score.
**On a scale from 1=Excellent to 6=Very Poor, supervisors were asked to review the overall performance of the instructor. Low numbers are better; 1 is a perfect score.

Semester	Title	Credits	Format	Enrollment	Evaluation
FA 2020	Physical Geography Lab	1	-	Cancelled	NA
SP 2020	Physical Geography Lab	1	Class	25	
FA 2019	Physical Geography Lab	1	Class	7	1.33*
SU 2019	Geography of US and Canada	3	Web	9	2**
SP 2019	Physical Geography	3	Web	139	2**
FA 2018	Physical Geography	3	Web	133	2**

RELATED PROFESSIONAL EXPERIENCE

Soil Conservation Aide, July 2017 - December 2017
Iowa Department of Agriculture and Land Stewardship
• Provided technical assistance to landowners and operators as it relates to state and federal soil conservation programs
• Worked in field and office settings on the promotion, documentation, contracting, installation, and maintenance of urban and rural soil conservation practices

Stormwater Technician Intern, May 2017 - July 2017
City of Waterloo (Iowa) Engineering Department
• Performed post-construction topsoil inspections using in-field analysis of soil texture, color, and bulk density
• Analyzed commercial engineering site plans and compiled city-wide GIS database of stormwater detention practices

TECHNICAL SKILLS AND TRAINING

Laboratory Proficiencies:
Particle Size Analysis (Laser Diffraction; Pipette & Sieve; Hydrometer)
Geochemical Analysis (X-Ray Fluorescence; Mass Spectrometry)

Clay Mineralogy Analysis (X-Ray Diffraction)
Organic Matter Analysis (Loss on Ignition)
Bulk Density Analysis

Software Proficiencies:
Esri ArcGIS Suite
R
S-PLUS
ERDAS Imagine
Adobe Illustrator
Microsoft Office Suite

Other Trainings:
USFS `LiDAR Processing in SAGA Training`, Cadillac, MI (12/07/2018)
NRCS `Soil Classification Training`, Cedar Rapids, IA (11/08/2017)
NRCS `Soil Health Training`, Garber, IA (07/31/2017)

SCHOLARLY SERVICE

Quaternary Landscapes Research Group (QLRG), Coordinator, Michigan State University, 2019 - 2020
Geography Graduate Group (GGG), Colloquium Coordinator, Michigan State University, 2019 - 2020
Geography Graduate Group (GGG), Colloquium Committee, Michigan State University, 2018 – 2019

SCHOLARLY MEMBERSHIPS

Soil Science Society of America, Member
Geological Society of America, Member
Michigan Academy of Science, Arts, and Letters, Member
Sigma Xi, Member
Gamma Theta Upsilon, Member
Phi Kappa Phi, Member
GLOBE Alumni, Member