

# Hanna Szydlowski

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## Education:

M.S. Hydrogeology, May 2025

University of Kansas, Lawrence, KS

B.S. Geology-Chemistry, April 2022

Grand Valley State University, Allendale, MI  
Frederik Meijer Honors College, GVSU, Allendale, MI

## Certification:

Geographic Information Systems (GIS and Technology) Certificate, April 2021 GVSU, Allendale, MI

Environmental Remote Sensing Certificate, April 2022 GVSU, Allendale, MI

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## Work Experience:

**Research Project Coordinator** - June 2024 – Present, Kansas Geological Survey

**Graduate Teaching Assistant** - August 2022 – May 2024, KU, Geology Department

Courses for GTA:

GEOL 751 – Physical Hydrogeology

GEOL 552 – Introduction to Hydrogeology

GEOL 512 – Igneous and Metamorphic Petrology (field trip TA)

GEOL 315 – Gemstones

GEOL 103 – Introductory Geology Lab

**Undergraduate Lab Assistant** - December 2021 – April 2022, GVSU, Geography and Sustainable Planning Department

Courses for LA:

GPY 307 – Introduction to Geographic Information Systems

**Undergraduate Teaching Assistant** - August 2021 – December 2021, GVSU, Geology Department

Courses for UTA:

GEO 320 – Geomorphology

GEO 220 – Earth Surface Materials and Systems

GEO 214 – Solid Earth Material and Systems (field trip TA)

**Geology Department Student Worker** - January 2020 – April 2022, GVSU, Geology Department

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## **Research Experience:**

### **Projects**

**Integrating on-farm solar arrays to enhance recharge, produce energy, and diversify farm income** (funded by the Foundation for Food and Agriculture Research)

June 2024 – Present, Kansas Geological Survey

**Characterizing Groundwater Discharge from a Cobble Armored Streambed, Alder Creek, Ontario, Canada**

October 2023 – 2025, KU (in collaboration with the University of Waterloo, ON, CA)

**Using stable isotopes to test alternative hypotheses of the size and complexity of a shallow sandy aquifer, Ottawa County, Michigan**

November 2019 – 2022, GVSU

**Major ion chemistry of groundwater and spring-fed streams at Hemlock Crossing County Park, Ottawa County, Michigan**

August 2021 – April 2022, GVSU

### **Research Programs**

**GVSU Student Summer Scholars (S3) student research participant**

May 2020 – April 2021, GVSU Office of Undergraduate Research

12-week research program conducted over the summer semesters that combined academics, field work, and reflection components of research. The research reflected preliminary conclusions on stable isotope data gathered. Results were presented at GVSU's 2020 Student Summer Scholars Day and GVSU's 2021 Student Scholars Day with a written report component.

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## **Projects and Publications:**

### **Peer Reviewed Publications**

Colgan, P.M., Larson, E.A., Riemersma, P.E., **Szydlowski, H.V.**, and Baker, T., 2024, Spring erosional processes and small sapping valleys in southwestern lower Michigan, USA: *Earth Surface Processes and Landforms*, v. 49, no. 9, p. 2789-2808, doi: 10.1002/esp.5858.

**Szydlowski, H.V.**, Winkelstern, I., Riemersma, P., Kneeshaw, T., and Colgan, P.M., in prep, Testing alternative hypotheses of the size and complexity of a shallow sandy aquifer using hydrologic monitoring, major ion chemistry, and stable isotopes ratios of O and H, Ottawa County, Michigan, USA: Groundwater.

### **Open-File Reports**

Stid, J.T., Zipper, S., **Szydlowski, H.V.**, Bingaman, J., Antcil, A., and Kendall, A.D., 2025, Current knowledge on low-impact ground-mounted solar siting, construction, and installation practices:

Kansas Geological Survey Open-File Report 2025-20, 17 p.,  
<https://www.kgs.ku.edu/Publications/OFR/2025/OFR2025-20.pdf>

### **Abstracts**

**Szydlowski, H.V.**, Winkelstern, I.Z., and Colgan, P.M., 2021, Using stable isotopes to test alternative hypotheses of the size and complexity of a shallow sandy aquifer, Ottawa County, Michigan, USA: Geological Society of America Abstract with Programs, v. 53, no. 6, paper no. 59-2, doi: 10.1130/abs/2021AM-366513.

**Szydlowski, H. V.**, Winkelstern, I.Z., and Colgan, P.M. 2020, Preliminary stable isotope and piezometer data suggest a rapid response of spring discharge to seasonal recharge in a shallow sandy aquifer, Ottawa County, Michigan: Geological Society of America Abstract with Programs, v. 52, no. 6, paper no. 254-2, doi: 10.1130/abs/2020AM-354433.

### **Presentations**

Zipper, S. and **Szydlowski, H.**, 2024, On-farm solar arrays to enhance recharge, produce energy, and diversify farm income. Kansas Governor's Water Conference on the Future of Water, (November 2024).

**Szydlowski, H.**, Devlin, J.F., and Rudolph, D., 2024, Characterizing groundwater discharge to a stream in support of nutrient loading assessment: comparison of methods. Morwick G360 Groundwater Research Institute University Consortium, (May 2024).

### **Poster Sessions**

**Szydlowski, H.** and Zipper, S., 2025, On-farm solar arrays to enhance recharge, produce energy, and diversify farm income. Kansas Geological Survey Kansas Field Conference, (June 2025).

**Szydlowski, H.**, Devlin, J.F., and Rudolph, D., 2023, Survey of flow and nitrate flux discharging to an Ontario River. The National Groundwater Association (NGWA) Groundwater Week, (December 2023).

*\*Recipient of the Farvolden Scholarship Award*

**Szydlowski, H.**, Devlin, J.F., and Rudolph, D., 2023, Use of bioremediation for in situ denitrification of agricultural impacted groundwater. Morwick G360 Groundwater Research Institute University Consortium, (May 2023).

**Szydlowski, H.** and Devlin, J.F., 2022, *In situ* denitrification of agricultural nitrate in groundwater. The National Groundwater Association (NGWA) Groundwater Week, (December 2022).

**Szydlowski, H.** and Devlin, J.F., 2022, Use of bioremediation for in situ denitrification of nitrate in groundwater. Governor's Conference on the Future of Water in Kansas, (November 2022).

**Szydlowski, H.V.**, Winkelstern, I.Z., and Colgan, P.M., 2021, Using stable isotopes to test alternative hypotheses of the size and complexity of a shallow sandy aquifer, Ottawa County, Michigan, USA. The Geological Society of America (GSA) 2021 Connects, (October 2021).

*\*Received 3<sup>rd</sup> place in the GSA Undergraduate Research in Hydrogeology poster contest*

**Szydlowski, H.V.**, Winkelstern, I.Z., and Colgan, P.M. 2020, Preliminary stable isotope and piezometer data suggest a rapid response of spring discharge to seasonal recharge in a shallow sandy aquifer, Ottawa County, Michigan. The Geological Society of America (GSA) 2020 Online Connects, (October 2020).

*\*Received 1<sup>st</sup> place in the GSA Undergraduate Research in Hydrogeology poster contest*

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## Grant and Scholarship Awards:

### Research Grants

Gibson Summer Field Scholarship, GVSU Department of Geology (\$800). Received Spring 2021.  
Proposal title: *Major ion chemistry of groundwater and spring-fed streams at Hemlock Crossing County Park, Ottawa County, Michigan.* **Szydlowski, H.**, Winkelstern, I., and Colgan, P.

Student Summer Scholars (S3) Program, GVSU Office of Undergraduate Research (\$750). Received Spring 2020. Proposal title: *Determining travel time of shallow groundwater-fed springs using oxygen-isotopes, water chemistry, and groundwater levels in Western Ottawa County, Michigan.* **Szydlowski, H.**, Winkelstern, I., and Colgan, P.

Gibson Summer Field Scholarship, GVSU Department of Geology (\$1,245). Received Spring 2020.  
Proposal title: *Determining travel time of shallow groundwater-fed springs using oxygen-isotopes, water chemistry, and groundwater levels in Western Ottawa County, Michigan.* **Szydlowski, H.**, Winkelstern, I., and Colgan, P.

### Educational Scholarships

Frederick T. Holden Scholarship—KU Geology Department, received Spring 2023.  
Selected based on academic record, interest in the geosciences, and progress towards degree objectives.

American Federation of Mineralogical Societies (AFMS) Scholarship—Tulip City Gem and Mineral Club, received Spring 2023.  
Selected based on professional merit and promise while pursuing a graduate degree.

Tremba Scholarship—GVSU Geology Department, received Spring 2021.  
Selected based on professional promise as an upper-level geology major.

Indian Mounds Scholarship—Indian Mounds Rock and Mineral Club, received Spring 2020.  
Selected based on academic and scholarly promise and achievements within the geosciences.

Geology Department Scholarship—GVSU Geology Department, received Spring 2020.  
Selected based on promise and success within lower-level geology courses.

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## Honors and Awards:

Leo M. & Robert M. Orth Water Resources Award—University of Kansas Department of Geology, received Spring 2025.

Farvolden Scholarship Award—National Groundwater Association, received Fall 2023.

GVSU Excellence-in-a-Discipline Award for Geology-Chemistry—GVSU, received Spring 2021.

The Excellence-in-a-Discipline Award honors one student from each undergraduate and graduate discipline. Faculty from each department select the recipient based upon an earned minimum number of credit hours at an exceptional grade point average.

Geoscience Division Award for Excellence in Student Research—Council on Undergraduate Research (CUR), received Spring 2021.

The Geo-CUR Award for Excellence in Undergraduate Research in Geosciences is an annual award presented to full-time undergraduate research students who are currently enrolled in a two-year or four-year educational institution and are engaged in research in the geosciences (e.g. geology, oceanography, atmospheric sciences, etc.).

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## Relevant Coursework:

### University of Kansas

Contaminant Transport  
Physical Hydrogeology  
Chemical and Microbial Hydrogeology  
Contaminants in Groundwater  
Methods in Computer Programming  
Numerical Methods in Earth Science  
Soil Gas Sampling (audited)

### Grand Valley State University

Geomorphology  
Introduction to Geochemistry  
Geohydrology  
Survey of Analytical Chemistry  
GIS in Geology  
Advanced GIS  
Digital Image Processing

### Study Abroad

Iceland: Geology in the Land of Fire & Ice, GVSU faculty lead. Participated Summer 2019.

Two-week course involving field observation work and exploration of local geology, hydrothermal power, and cultural/geological history of Iceland.

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## Professional Activities:

### Professional Societies

Sigma Gamma Epsilon National Earth Sciences Honor Society (2023-present)  
Gamma Theta Upsilon International Geography Honor Society (2022-present)  
Omicron Delta Kappa National Leadership Honor Society (2020-present)

International Association of Hydrogeologists (2024-present)  
Association for Women Geoscientists (AWG) Osage Chapter (2022-present)  
The National Groundwater Association (2021-present)  
The Geological Society of America (2019-2025)

**Student Organizations**

KU Geology Grad Student Organization Treasurer (Fall 2023-Spring 2024)

KU AWG Osage Chapter Treasurer (Fall 2023-Spring 2024)

KU Geology Grad Student Organization Social Committee (Fall 2022-Summer 2025)

GVSU Honors College freshmen mentor (Fall 2019-Spring 2022)

GVSU Honors College Student Council Public Relations Committee (Spring 2019-Fall 2021)