UNIVERSITY of WISCONSIN Superior

Using Academic Service-Learning to Solidify Content in STEM Courses

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Liberal Arts High Impact Practices

- Academic Service-Learning
- First Year Experience/Seminar
- Global Awareness
- Senior Year Experience
- Writing Across the Curriculum
- Undergrad Research, Scholarly & Creative Activity

UW-Superior's Public Liberal Arts Mission, Vision & Values

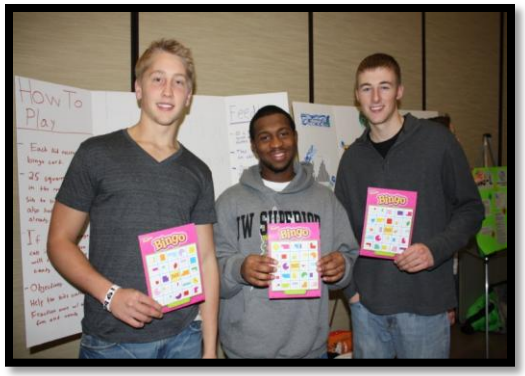
- The University of Wisconsin-Superior fosters intellectual growth and career preparation with a liberal arts tradition that emphasizes individual attention, embodies respect for diverse cultures and multiple voices, and **engages the community and region.**

- The University of Wisconsin-Superior will be known as an institution that transforms learners, **engages the community,** and **enhances the vitality of its region.**

Academic Excellence · Student-focused Learning
Intellectual and Personal Development · Continuous Improvement Inclusivity
· **Community Partnerships** · Global Awareness

Academic Service-Learning at the University of Wisconsin-Superior

- Is a teaching method
- Students provide a service and meet a genuine need in the community
- Designed to achieve course and/or program learning outcomes
- Structured opportunities for reflection
- A form of experiential learning
- Utilize the National Service-Learning Standards for all AS-L course development



Four Models of Academic Service-Learning

Placement: Students serve at an agency each week throughout the semester

Presentation: Students take material from class and create needed presentations for community audiences

Product: Students produce a tangible product for their agency or agencies

Project: Students collaborate with community members to devise and implement a project

The Center for Academic Service-Learning

- Instructional Support
- Knowing the Community
- Engaged Department Grants
- On-Going Trainings
- Promotion of Collaborations
- On-going, student support
- Data Collection

Academic Service-Learning in Action

- **Psychology 402: Applied Behavior Analysis**
  Dr. Eleni Pinnow, Assistant Professor of Psychology
  - Service-learners teach manners to dogs, helping their chances of being adopted
  - Example of Placement Based AS-L

animal allies
HUMANE SOCIETY

Academic Service-Learning in Action

- **GEOL 170: Earth Science for Teachers**

  Dr. Kristin Riker-Coleman, Assistant Professor of Geology

  Dr. Randy Gabrys-Alexson, Professor of Geography

- Develop "teach-ins" about an environmental need in their community.
- Example of Presentation Based AS-L
- This course is only taught online.
- Required course for pre-service elementary teachers

Academic Service-Learning in Action

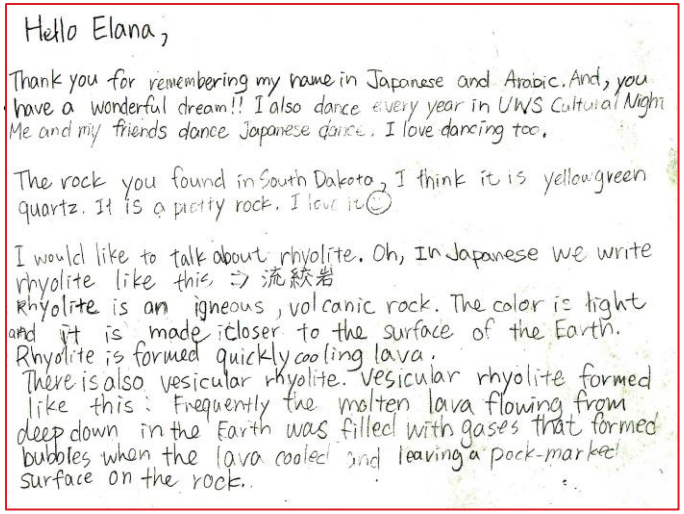
- **BIO 111: Plants and People**
  Dr. Nick Danz, Associate Professor of Plant Sciences, Ecology
- Eradicate invasive species at Wisconsin Point for City of Superior
- Example of Project Based AS-L
- General Education course
- **Other HIP in Action:** Undergraduate Research

Academic Service-Learning in Action

- **GEOL 110: Dynamic Earth**

  Dr. Andrew Breckenridge, Associate Professor of Geology

- Rock "pen pals" with elementary students.
- Example of Hybrid AS-L
- Students collect rocks, identify them. Write letter to kids, exchange with kids.

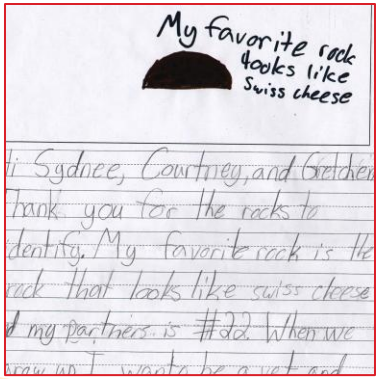


Hello Elana,

Thank you for remembering my name in Japanese and Arabic. And, you have a wonderful dream!! I also dance every year in UWS Cultural Night. Me and my friends dance Japanese dance. I love dancing too.

The rock you found in South Dakoto, I think it is yellowgreen quartz. It is a pretty rock. I love it.

I would like to talk about rhyolite. Oh, In Japanese we write rhyolite like this ⇒ 流紋岩
Rhyolite is an igneous, volcanic rock. The color is light and it is made closer to the surface of the Earth. Rhyolite is formed quickly cooling lava.
There is also vesicular rhyolite. Vesicular rhyolite formed like this: Frequently the molten lava flowing from deep down in the Earth was filled with gases that formed bubbles when the lava cooled and leaving a pock-marked surface on the rock.



My favorite rock looks like Swiss cheese

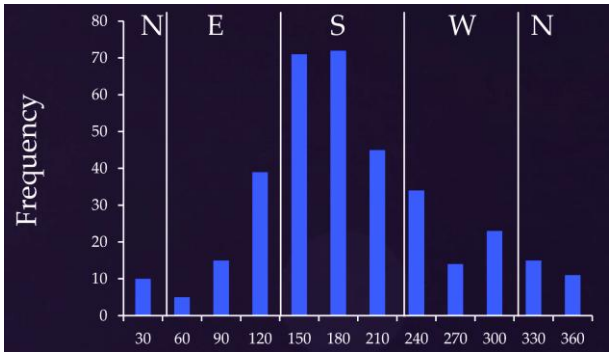
Hi Sydnee, Courtney, and Gretchen
Thank you for the rocks to identify. My favorite rock is the rock that looks like swiss cheese and my partners is #22. When we grow up I want to be a vet and

Academic Service-Learning in Action

Examples from advanced coursework

GEOL 360: Geomorphology

Dr. Andrew Breckenridge, Associate Professor of Geology



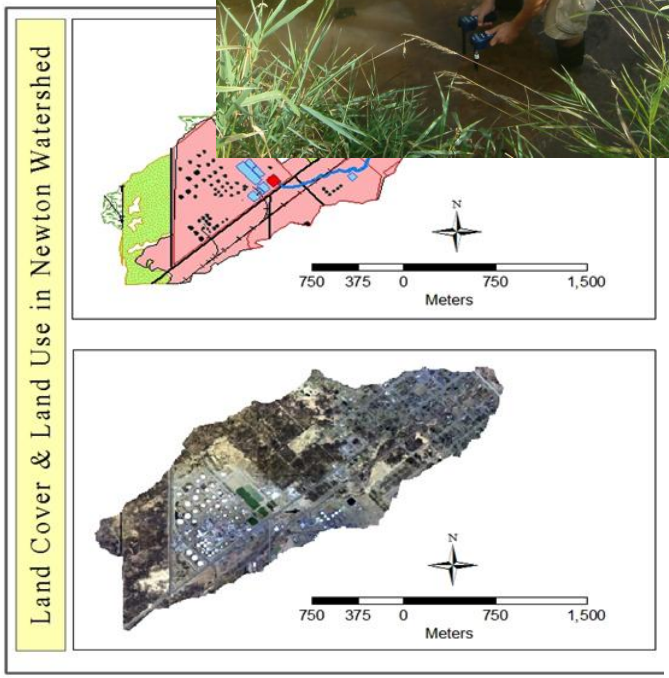
- Mapping landslides/possible landslides
- Example of Product Based AS-L
- **Other HIP in Action:** Undergraduate Research
- Pitfalls: occupied too much classtime, weather

Academic Service-Learning in Action

Examples from advanced coursework

GEOL 400: Watershed Hydrology

Dr. William Bajalli, Professor of Hydrogeology

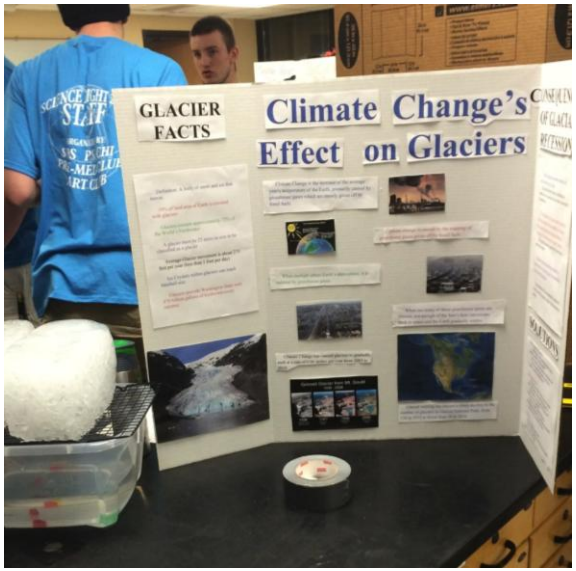


- Analyze water quality in local watershed
- Example of Product Based AS-L
- **Other HIP in Action:** Undergraduate Research

Academic Service-Learning in Action

Similar Projects: Science Night

- Largest student-run event on campus
- Students develop displays, host displays and involve public in demonstrations
- Multiple classes/Faculty represented:
  - Dr. Michelle Arnhold Davies, Assistant Professor, Biology
    - Anatomy and Physiology (require core class in Biology Major)
    - Human Biology (general education course for non majors, required for social work, health and human performance)
  - Dr. Kristin Riker-Coleman
    - Environmental Geology (general education course)



Challenges, Opportunities, and Lessons Learned

- Find the right match and a meaningful project
  - Government agencies and schools often have identified needs.
  - Choose a project that is meaningful to students, but is small enough to accomplish in the given time period.
  - Allow student choice.
- Embed the assignment in the syllabus
  - Plan for students to miss deadlines.
  - Have a plan in mind for how to handle excused absences.
- Meaningful AS-L projects take time.
- Plan for student reflection.
- Three tries!