

Sustainably Teaching Sustainability in Outreach

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University faculty members have well-developed research and course offerings but limited time for developing outreach content. This project leverages Discovery Outreach resources to translate undergraduate course materials into outreach modules ... without overburdening faculty members!

Environmental Studies 126: A college course on sustainability (energy, food, and trash)

- A university campus is rich with content, expertise, and creative means to inspire and engage the public.
- This course empowers students to use their campus as a living-learning laboratory for sustainability.
- A partnership with Discovery Outreach leverages an existing course to efficiently create content for outreach.
- Instructors retain control over the content. Time investments are small yet produce large broader impacts.

Essential Players in Making Things Happen

- Discovery Building safety & facilities staff strive to say "yes" to special requests from outreach.
- Campus waste & recycling staff delivered 300 lb of safe trash to a teaching lab for auditing.
- Student coordinators at the Office of Sustainability helped to make connections among participants and facilitated logistics.
- Cooperation among campus facilities staff, building managers, and dedicated student volunteers enables unique adult and K-12 outreach activities.

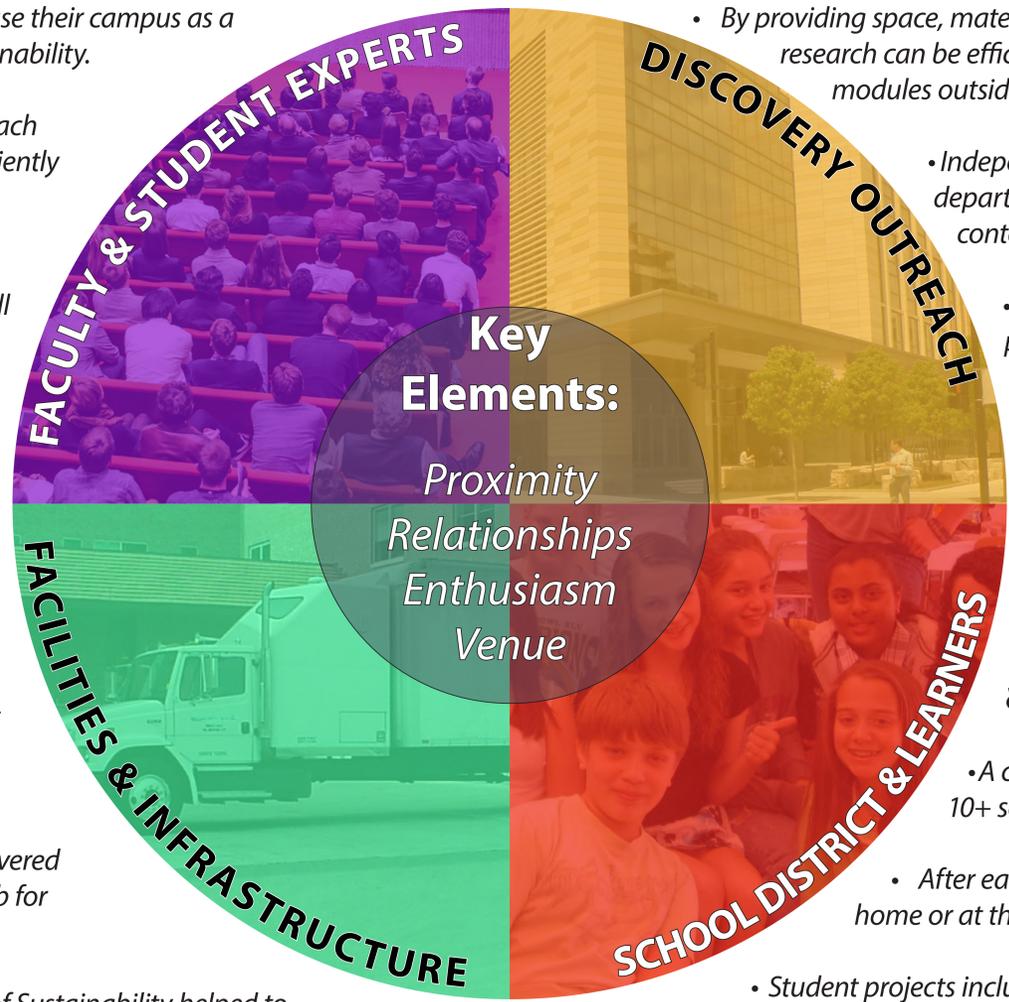
Discovery Outreach Connects the Public with Campus Science

- Our mandate is to cooperate across campus in order to facilitate science communication to the public, particularly K-12 audiences.
- By providing space, materials funding, and personnel, campus research can be efficiently purposed for outreach modules outside traditional venues.
- Independence from a college or department enables wide-ranging, fresh content.
- By offering a dynamic set of STEM programming, a consistent following of schools and adults has developed across Wisconsin and surrounding states.

Beyond the Event: Amplifying Outreach to Homes and Schools

- A cohort of 25 students (7th grade) from 10+ schools participated over 3 visits.
- After each visit, students created projects at home or at their school.
- Student projects included audits of family recycling, classroom energy audits, & carbon footprint calculations for meals.

- One student group worked with custodial staff to change waste collection at lunch, resulting in improved recycling.
- Participant activities at home schools amplified Broader Impacts!



Field Trips in Sustainability



Session One: Energy

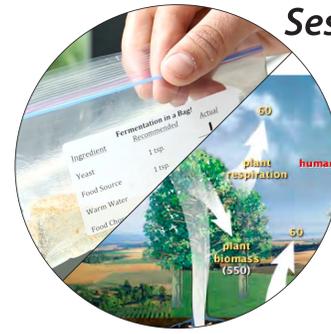
Middle school teams build a geothermal heating system and a windmill to harness energy and calculate efficiencies.

Students return to schools with equipment to perform home/classroom energy audits.

Session Two: Materials

In cooperation with campus facilities, teams audit 300 lb of trash from a campus building.

Students calculate the carbon footprint of a meal from a campus dining facility.



Session Three: Carbon Cycle

Teams set up a fermenter-in-a-bag to learn how yeast creates biofuels from biomass.

Students map carbon flows in the environment.

Evidence of Impact

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| "I think it is weird that we rely [so much] on coal and other countries use very little." | "All of the sessions related to topics in real life, [making] it easier to comprehend." |
| "I learned how to trace energy back to its original source...the sun." | "I would like to focus more on how to improve [the environment]." |
| "I was surprised by how much food is discarded." | "I like that students can answer questions by having to think deeper." |
| "I was surprised by how much fossil fuels it took to create one meal." | "[This class] was more challenging than my regular science class." |

Ask about DIY Science, our field trip program for adults!