Why is service-learning important in Geosciences?

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Service-Learning

• Not simply community service, even when linked rigorously with academic learning objectives
• Often involves face-to-face interaction
• Other “intellectual” forms: technological/scientific consulting, grant writing, assessments, and research
• Object of service via partner? “Community?” Underserved populations? United States? World?
• Engenders civic engagement
generally – issues of communal importance
pointedly – political participation
SL & Civic Engagement

• Potential to teach and apply disciplinary and transdisciplinary concepts in the context of civic life
• Why is it important in the geosciences?
• Among the least overtly-relevant science to the public; among the most important applications for societal and economic problems
Geoscience does a particularly good job with complexity – “wicked problems”

A sustainability lens for all students?

“Business doesn’t need sustainability professionals, but rather professionals that are capable of making sustainable decisions in any role.”

5 Key Messages from Businesses to Business Schools Around Sustainability, PRiMEtime blog, Sept. 7 2015, PRimE, United Nations Global Compact (primetime.unprme.org)
Moving toward “reciprocal integration” of business and the arts and sciences in higher education – four modes of thought for liberal learning:

1. practical reasoning,
2. analytical thinking,
3. multiple framing, and
4. reflective exploration of meaning.

(Colby et al., 2011)
Strengthening the role of geosciences in public decision-making is hard.

Proactive work is the only thing that earns us a seat at the table.

But we also need the voices of non-STEM advocates for the geosciences or we’ll fail.
4,250 undergraduates

Accountancy  Global Studies  Marketing
Actuarial Science  Health Studies  Mathematical Science
Computer Information Systems  History  Media and Culture
Corporate Finance and Accounting  Information Design and Corporate Communications  Philosophy
Creative Industries  Information Systems  Professional Sales
Economics-Finance  Audit and Control  Public Policy
English  Liberal Arts  Spanish Studies
Finance  Management  Sustainability Science

Second Major: Liberal Studies Major with a concentration (e.g. Earth, Environment, & Global Sustainability)
Second Major: Business Studies
NASE 380 Science in Environmental Policy
3-credit course

earth science + social science

Optional “4th-credit” service-learning project
civic engagement + research + business
February 2, 2011

The Honorable Lisa Jackson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Jackson:

We appreciate the efforts of the Environmental Protection Agency (EPA) to help business owners reduce energy consumption and help the environment while improving their bottom line through voluntary programs like Climate Leaders and through cooperative programs like Energy Star between EPA and the Department of Energy. In particular, we commend the EPA for engaging small business owners and recognizing their efforts with the Energy Star Small Business and Congregations Award.

Although small businesses generate over half of the nonfarm private GDP in the United States, the Small Business Administration's Office of Advocacy found that small businesses—particularly those in the commercial and manufacturing sectors—are also disproportionately affected by increases in energy prices. Small businesses face not only bigger price differentials compared to larger companies, but they often lack the resources and man-hours to even seek out ways to become more energy efficient.

In research performed for the Environment and Energy Study Institute (EESI), students at Bentley University in Waltham, Massachusetts recently interviewed a variety of small business owners and operators in the Northeast to gauge their perceptions of energy use and energy efficiency. Their research provides an important perspective on the perspectives of businesses and energy, beyond the statistics on consumption, costs and policy. The students found that many small business owners take a reactive approaches to energy efficiency, reducing consumption only after energy prices increase. Of twenty businesses surveyed, only three had ever had an energy audit, and the immediate cost savings is the primary motivator for increasing energy efficiency.

The most telling finding from the research, however, is that small business owners were difficult to receive relevant and accurate information about energy efficiency without any doubt related to the lack of resources these businesses have to seek out information and assistance. However, 50% of the businesses belong to small business associations, and all said they would trust their associations for energy-related information.

As a prime example of the types of businesses often overlooked when it comes to energy efficiency programs, the students interviewed the owner of a hair salon in Boston.

Sincerely,

John F. Kerry
United States Senator

Jon Tester
United States Senator

Jeanne Shaheen
United States Senator

Joseph I. Lieberman
United States Senator
Geosciences in Policy Making
The All-Inclusive Impact of Geoscience Information on Policy Decisions

Our team of Bentley University students researched and analyzed how policymakers access and use geoscience data when writing policy. We found that the main concern among policymakers was a lack of resources and access to impartial information.

Importance of Geoscience Information
The geoscience community provides the knowledge, experience, and ingenuity to meet society’s demand for natural resources, environmental quality and resilience to hazards. Likewise, there are many critical issues that politicians must address that range from the availability of water to the possible long-term effects of fracking to the efficient management of waste—all of which rely on the practical use of geosciences information.

Economic Impacts: Where Geoscience Can Help

$100 billion in damages to the American economy from climate and weather effects in 2012

Landslides cost between $2.4 billion in damages per year, up from an estimated $1-2 billion in 1985

American Geosciences Institute (AGI) and Member Societies as a Resource
The American Geosciences Institute is a nonprofit federation of 50 geoscientific and professional associations that represents more than 250,000 geologists, geophysicists and other earth scientists. Founded in 1948, AGI provides information services to geoscientists, serves as a voice of shared interests in the profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society’s use of resources, resiliency to natural hazards, and interaction with the environment.

The Critical Issues Research Database is a growing catalog of over 3,400 factsheets, reports, position statements, and case studies, relevant to and indexed for application to legislative and research endeavors.

1. Billion-Dollar Weather and Climate Disasters: Overview (www.ncdc.noaa.gov)
2. USGS FAQs: Natural Disasters (www.usgs.gov)

WHAT YOU CAN DO
Maintain funding levels from the administration’s FY 2016 budget for geosciences (specifically for the NSF and the USGS).

Ensure the use of impartial and reliable geoscience information when making policy decisions.
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