


# 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”

# Sustainability

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](http://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



**BENTLEY**  
UNIVERSITY

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 Audit and Control	Professional Sales
Economics-Finance	Liberal Arts	Public Policy
English	Management	Spanish Studies
Finance	Managerial Economics	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 “4<sup>th</sup>-credit” service-learning project  
civic engagement + research + business

# The (small) Business of Energy Efficiency

Perceptions of Small Businesses in the North  
on Energy and Energy Efficiency

Research by Bentley University Students  
Provided to the Environmental and Energy Study Institute (EESI)

January 5, 2011



## Energy 101: Making America More Energy Literate

Research by Bentley University Students

Alyson Bisceglia  
Aaron Pinet  
Kaila Reed  
Monica Tshanakas  
Ryan Vermette  
Dan Westervelt  
Laura Yates

Provided to the Environmental and  
Energy Study Institute (EESI)

## Consumer Demand for Energy Codes

Students in collaboration with:  
Energy Study Institute (EESI)  
Union (CU)

, 2012



18-402 Service-Learning Students, Bentley University,  
d (dszymanski@bentley.edu)

*Spring 2013*



# United States Senate

WASHINGTON, DC 20510

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.

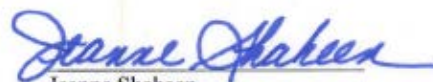
In research performed for the Environment and Energy Study Institute (EESI), students at Bentley University in Waltham, Massachusetts recently interviewed a variety of small business owners and operators in the Northeast to gauge their perceptions about energy use and energy efficiency. Their research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


The most telling finding from the research, however, is that small businesses find it difficult to receive relevant and accurate information about energy efficiency, no doubt related to the lack of resources these businesses have to seek out 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

Sincerely,

  
John F. Kerry  
United States Senator

  
Jeanne Shaheen  
United States Senator

  
Jon Tester  
United States Senator

  
Joseph I. Lieberman  
United States Senator



Critical Issues

Topics

Climate  
Energy  
Hazards  
Mineral Resources  
Water

Tools & Resources

Research Database  
Webinars & Forum Videos  
Frequent Questions  
Maps & Visualizations  
Case Studies  
Basics & Primers  
Ask An Expert  
Suggest A Resource

Policy & Critical Issues

Policy News

Forums

Reports

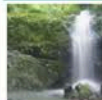
Policy Positions

Get Involved

Resources

## Critical Issues Program

### Latest Updates



Critical Needs: Water  
1 week 6 hours ago



Critical Needs: Energy  
1 week 6 hours ago



Critical Needs: Natural Hazards  
1 week 6 hours ago



#### Climate

Drought

Energy

Floods

Water Availability

Water Quality

Weather Hazards



#### Energy

Coal

Geothermal Energy

Hydraulic Fracturing

Nuclear Energy

Oil and Gas

Renewable Energy

Critical Issues

Topics

Climate

Energy

Hazards

Mineral Resources

Water

Tools & Resources

Research Database

Webinars & Forum Videos

Frequent Questions

Maps & Visualizations

Case Studies

Basics & Primers

Ask An Expert

Suggest A Resource

Policy & Critical Issues

Policy News

Forums

Reports

Policy Positions

Get Involved

Resources

## Critical Issues Research Database

### Search the Research Database

Fill in one or more fields to search the database.

View examples of how to use the search interface.

Questions or feedback? Contact Leila Gonzales at [lmg@agiweb.org](mailto:lmg@agiweb.org)

Displaying 1 - 10 of a total of 3807 documents

Enter your search terms

State or Country

Full or partial name. No abbreviations.

Organization Name

Full or partial name, or acronym

Range of Years: (From)

Range of Years: (To)

Sort by

Relevance

Order

Desc

Results per page

10

Search

Reset Fields

[Geologic Hazards Mapping Project of the Uncompahgre River Valley Area, Montrose County, Colorado](#)

2011, Colorado Geological Survey

Tags: hazards, colorado

[Bighorn Basin: Oil and Gas Geology, Production, and Future Development](#)

2014, Wyoming State Geological Survey

Tags: oil and gas, wyoming

[Denver Basin: Oil and Gas Geology, Production, and Future Development](#)



## CIP Website and Research Database Strategy and User Experience Recommendations

A Report by Students of Bentley University  
NASE 380 Science in Environmental Policy

Spring 2015

David W. Szymanski, Faculty Advisor  
Aaron W. Pinet, Graduate Project Manager

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# 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<sup>1</sup>*

*Landslides cost between \$2-4 Billion in damages per year, up from an estimated \$1-2 Billion in 1985<sup>2</sup>*

### 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](http://www.ncdc.noaa.gov))
2. USGS FAQs: Natural Disasters ([www.usgs.gov/](http://www.usgs.gov/))

## Geosciences

*The study of the composition, structure, and other physical aspects of the Earth, and can include issues like the climate, energy, environmental hazards, and water.*

## Key Topics

Energy	Minerals
Waste	Soil
Climate	Hazards

*Funding geoscience research promotes national health, security and economic benefits.*

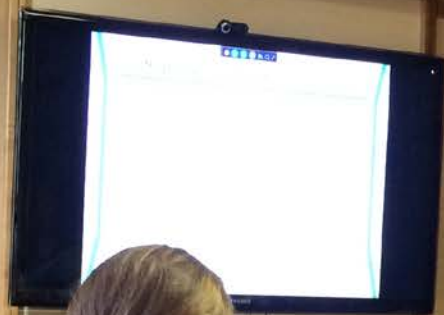
[www.americangeosciences.org](http://www.americangeosciences.org)

## 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.











House of Representatives floor debate  
H.R.1806 - America COMPETES Reauthorization Act of 2015  
May 20, 2015





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