

### **Track 1 - Undergraduate Research through the STEM Curriculum**

Organizers: Dick Sheardy and Cynthia Maguire from Texas Woman's University, Steve Bachofer at St. Mary's College of California

### **Track 2 - Models for Community Engagement focused on STEM**

Organizers: Stephanie Schooley with Campus Compact, Bob Franco from Kapiolani Community College and Ulla Hasager from University Hawaii Manoa

### **Track 3 - Sustainability: Responsibility and Engagement across all disciplines**

Organizers: Amy Shachter from Santa Clara University and Cat Kleier from Regis University

### **Track 4 - Strengthening the Liberal Arts:**

#### **Humanities, Social Sciences and STEM in Partnership**

Organizers: Eliza Reilly from The SENCER National Center and Stephen Carroll from Santa Clara University

# **Track 3 - Sustainability: Responsibility and Engagement across Disciplines**

Organizers: Amy Shachter from Santa Clara  
University and Catherine Kleier from Regis  
University

# Track 3 Outline

- Examples (45 minutes)
- Design Workshop (60 minutes)
- Developing Strategies for Integrating Sustainability Across the Curriculum (45 minutes)

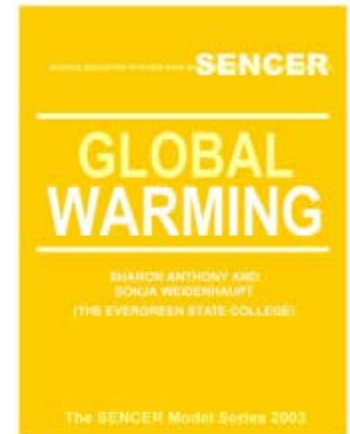
# SENCER Resources: Models

Over 40 models have been selected over the past 10+ years including:



“Sustainability and Human Health:  
A Learning Community”

Donald Stearns and Kim Worthy  
Wagner College



“Global Warming”

Sharon Anthony  
Evergreen State College





**Application-Based Service  
Learning: Combining  
Undergraduate Research, Service  
Learning and Collaborative  
Learning in Upper Level Courses**

**Dr. Nancy J Trun**

**Duquesne University, PA**

**Dr. Gail E. Rowe**

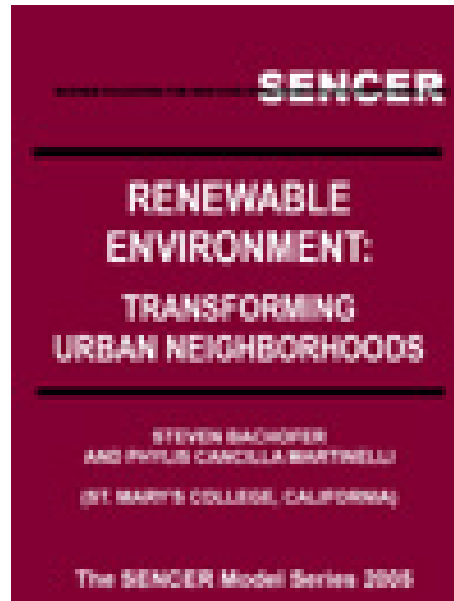
**Professor of Biology**

**La Roche College, PA**

**Ms. Susan M Seibel**

**Instructor of Humanities and  
Social Sciences**

**Butler County Community  
College, PA**



**Emerging Infectious  
Diseases (BIOL 215)  
Dr. Rachel Bergstrom,  
Assistant Professor, and  
Dr. Marion Field Fass,  
Department of Biology,  
Beloit College, Beloit,  
Wisconsin**



# SENCER Resources

## Climate Change Science and Economics

**Denise Eby Konan, Dean of Social Sciences and Professor, Department of Economics (konan@hawaii.edu); Julia M. Morgan, Lecturer, Department of Philosophy (jmmorgan@hawaii.edu), University of Hawai'i at Mānoa**

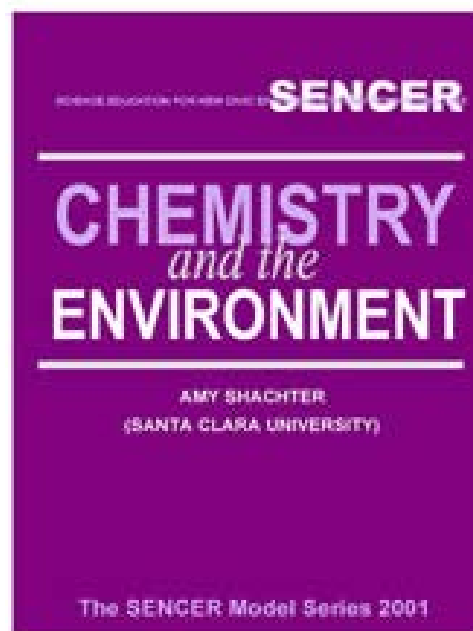
## Pollinators: A Case Study in Systems Thinking and Sustainability

**Susan H. Cusato, Department of Science Education and Environmental Studies; Suzanne Huminski, Department of Science Education and Environmental Studies, Southern Connecticut State University, New Haven, Connecticut**



# A **SENCER** Model

*Chemistry and the Environment* exemplifies the **SENCER** approach through campus- and community-based projects that are *required* of all the students.



# Sustainability and a **SENCER** Model

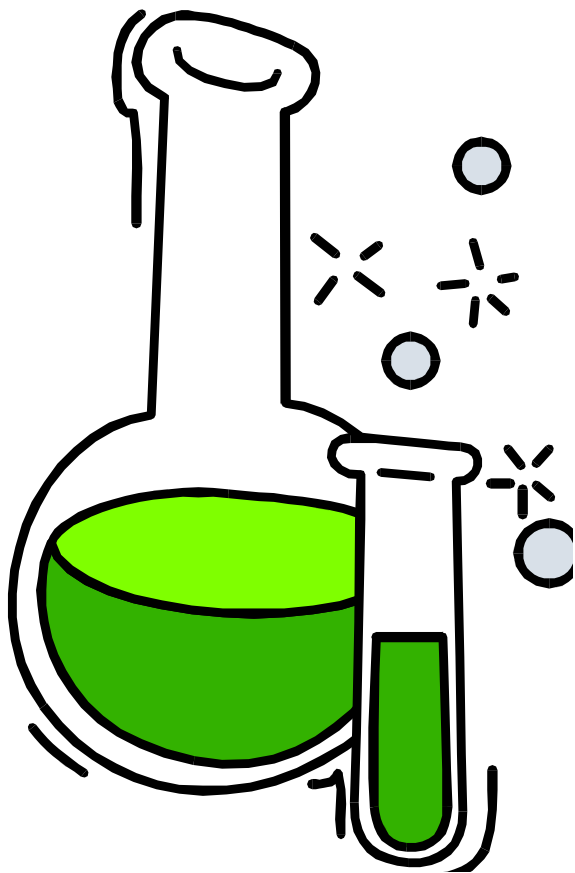
Students actively participated in civic engagement as a means of learning science and understanding more **sustainable** ways of living and working ...

“Local” projects inspired students to view themselves as **community stakeholders** and, consequently, fostered enhanced civic engagement and responsibility ... **and contributed to building a more sustainable future ...**





# *Chemistry and the Environment*



- a non-science majors environmental chemistry course
- 40-50 undergraduates
- research projects:
  - groups of 4-6 students
  - group project proposal
  - progress reports
  - final report
  - poster presentation

# Cath's Course

A Surprise for Friday ...

you must attend to be in the know....

# Track 3 Outline

- Examples (45 minutes)
- **Design Workshop (60 minutes)**
- Developing Strategies for Integrating Sustainability Across the Curriculum (45 minutes)

# 1,2,3,4,5,6,7,8 steps to designing a **SENCER** model in 1 hour or so

Presented by  
Amy and Cath

(originally designed by SENCER  
leaders Karen Oates  
Cathy Middlecamp, and Ellen  
Goldey)

# Step 1 - Overview ...

- ***Brainstorm themes***
- ***Choose a theme***
- ***Establish learning outcomes***
- ***Identify resources***
- ***Envision the process***
- ***Make a poster***
- ***Present it!***



1 min

# Track 3 Outline

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- **Developing Strategies for Integrating Sustainability Across the Curriculum**  
(45 minutes)



## Association for the Advancement of Sustainability in Higher Education Sustainability Across the Curriculum

- The Piedmont Project at Emory University, the longest-running curriculum development program for sustainability in the country.
- Introduced to faculty on more than 150 campuses, the Ponderosa Project at Northern Arizona University is a faculty development initiative aimed at helping faculty across departments integrate issues of environmental sustainability into their courses.





## Santa Clara's Penstemon Project Sustainability Across the Curriculum

- Phase I – “Low Hanging Fruit”
  - 2007 and 2009
  - one workshop each year
  - approx. 20 each for total of 39 faculty,
  - workshops were two days in the summer,
  - volunteer
- Phase II – “Higher on the Tree”
  - 2011
  - Three one-day workshops during the academic year,
  - 20 faculty per workshop (60 total),
  - ipad incentive







# Santa Clara's Penstemon Project Sustainability Across the Curriculum



- Phase III – “Harvesting the Orchard”
  - 2013-date
  - department-based initiative

Let's chat in the next session....