



# Strategies for Integrating Sustainability Across the Curriculum

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## About Santa Clara University

- Santa Clara, CA
- Over 8,000 students
- Avg. class size: 25 students
- Founded in 1851
- 106 acre main campus
- 6 schools (A&S, Business, Engineering, Law, JST, ECP)
- Mission Santa Clara
- NCAA division I
- 300 days of sunshine a year





## 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.





**The Sustainability Tracking, Assessment & Rating System™ (STARS) is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance.**



# Santa Clara's Penstemon Project Sustainability Across the Curriculum



Two categories of courses (AASHE)

Courses that include sustainability

Courses that are primarily focused on a topic other than sustainability, but incorporate a unit or module on sustainability or a sustainability challenge, include one or more sustainability-focused activities, or integrate sustainability issues throughout the term.



# Santa Clara's Penstemon Project Sustainability Across the Curriculum



## Sustainability-focused courses

Courses in which the primary and explicit focus is on sustainability and/or on understanding or solving one or more major sustainability challenge (e.g. the course contributes toward achieving principles outlined in the UN Earth Charter).





# Santa Clara's Penstemon Project Sustainability Across the Curriculum

- The Penstemon Project, founded by John Farnsworth at Santa Clara, is designed for faculty outside of the traditional environmentally-focused disciplines to find ways to incorporate sustainability into their curriculum – either as class content or in the way their class functions.





## 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
  - each department conducts an assessment and sets a goal
  - faculty summer stipends for course transformations
  - leadership identified each school
- **Starts with a review of current courses ....**



# Santa Clara's Penstemon Project Sustainability Across the Curriculum



- Phase III – “Harvesting the Orchard”
  - Starts with a review of current courses ....
  - Department discussion of goal - % courses sustainability-related
  - Department plan for achieving goal including timeline
  - Support provided by Penstemon
    - Individual and department consultation
    - Summer stipends for course revisions



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

**Leaders: John Farnsworth, Faculty Associate for Penstemon, Lindsey Cromwell, Director, Center for Sustainability**

**Targeted Pilots 2013-14 – Civil Engineering, Business Core, Political Science, Economics, and Anthropology**

**Summer 2014 – 25 faculty summer stipends of \$1000 to develop modules or revise courses related to targeted pilots**



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

Summer 2014 – lunch with key science faculty ..... added revisions of general chemistry lab program during summer)

2014-15 – A&S chairs retreat .... Currently working with all departments in A&S, developing leadership in other schools

Summer 2015 – over 12 summer stipends of \$500 to \$1000 to add modules and modify courses

Summer 2016 – 7 faculty summer stipends in Business, 3 in Religious Studies, and 2-3 pending in Communications

**AASHE webinar on Penstemon by John Farnsworth:**

**<http://www.aashe.org/events/webinars/2015/Educating-For-Sustainability-4>**



[www.sencer.net](http://www.sencer.net)

[www.serc.carleton.edu/sencer/index.html](http://www.serc.carleton.edu/sencer/index.html)

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

[www.scu.edu/sustainability](http://www.scu.edu/sustainability)

<http://www.aashe.org/events/webinars/2015/Educating-For-Sustainability-4>



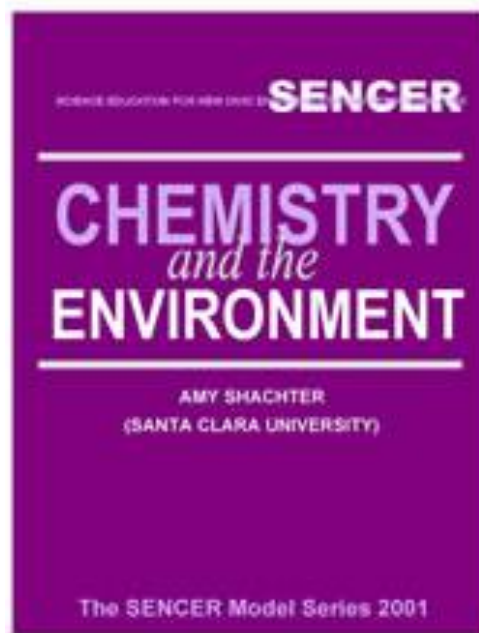


# SANTA CLARA UNIVERSITY



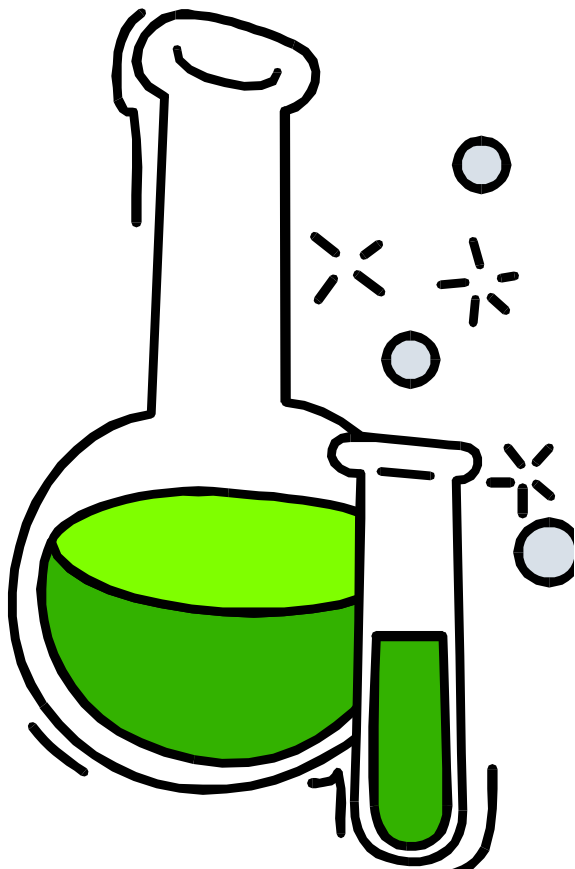
# A **SENCER** Model

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





## ***Chemistry and the Environment***



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



<b>Project Title</b>	<b>Project Focus</b>	<b>Chemistry Connections</b>
<b>Hazardous Materials in the Arts</b>	<b>Appropriate Handling and Disposal of Hazardous Materials</b>	<b>Metals in Paints Organic Molecules (VOCs) Defining Hazardous and MSDSs OSHA and EPA regulations Waste Disposal Indoor Air Pollution</b>
<b>SCU and Reclaimed Water</b>	<b>Campus Uses of Reclaimed Water from the San Jose/Santa Clara Sewage Treatment Facility</b>	<b>Atoms, Molecules and Ions Metals and Metal Ions Water Purification and Treatment</b>



## A Biodiesel Laboratory Project

**Biodiesel research project in lab optimizing biodiesel production feasibility for the campus used veggie oil as fuel**

