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
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.
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.
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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).
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.
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- **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
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- 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 ....
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- **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
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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
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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
www.serc.carleton.edu/sencer/index.html
www.aashe.org
www.scu.edu/sustainability
http://www.aashe.org/events/webinars/2015/Educating-For-Sustainability-4
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
<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Focus</th>
<th>Chemistry Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Materials in the Arts</td>
<td>Appropriate Handling and Disposal of Hazardous Materials</td>
<td>Metals in Paints, Organic Molecules (VOCs), Defining Hazardous and MSDSs, OSHA and EPA regulations, Waste Disposal, Indoor Air Pollution</td>
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<tr>
<td>SCU and Reclaimed Water</td>
<td>Campus Uses of Reclaimed Water from the San Jose/Santa Clara Sewage Treatment Facility</td>
<td>Atoms, Molecules and Ions, Metals and Metal Ions, Water Purification and Treatment</td>
</tr>
</tbody>
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A Biodiesel Laboratory Project

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