

Beyond Doom and Gloom: Engage Students in Solutions to Climate Change



Debra Rowe, MBA, PhD



President – *U.S. Partnership for Education for Sustainable Development*
Co-founder and Director – *Higher Education Associations Sustainability Consortium*
Founder and Director – *Disciplinary Associations Network for Sustainability*
Professor – *Sustainable Energy, Psychology and Business, Corporate and Campus Sustainability*

Education for Sustainable Development

“enables people to develop the knowledge and skills to participate in decisions..., that will improve the quality of life now without damaging the planet for the future.”

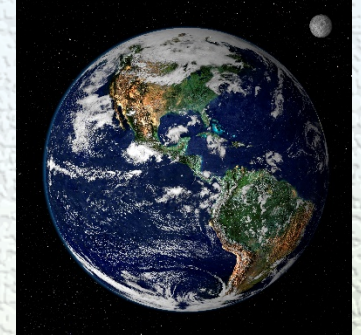
(UN ESD Summit information)



Skills needed for Sustainable Development are the same skills employers value!

Rowe D. and Hiser K. (2016) “Higher Education for Sustainable Development in the Community and through Partnerships” in Routledge Handbook of Higher Education for Sustainable Development, ed. Barth, M., Michelsen, G., Rieckmann, M., & Thomas, I., Routledge, Oxford, UK.

Education for Solutions



- Individual change is not enough,
- Change on campus is not enough,
- Research/academic publishing is not enough,
- Climate change requires regulatory and policy changes to shift societies to less greenhouse gas emissions.
- Students and the public can/need to help.

Education for Solutions

- Student learning outcomes for ESD consistently include:
 - systems thinking and action,
 - change skills,
 - applied problem solving with civic engagement.
- HOW?
Assignments and student life activities to engage students in policy changes to shift societies to a more sustainable future.

Ecosystem

Ecosystem

Sustainable Communities

**Public Choices:
Policies**

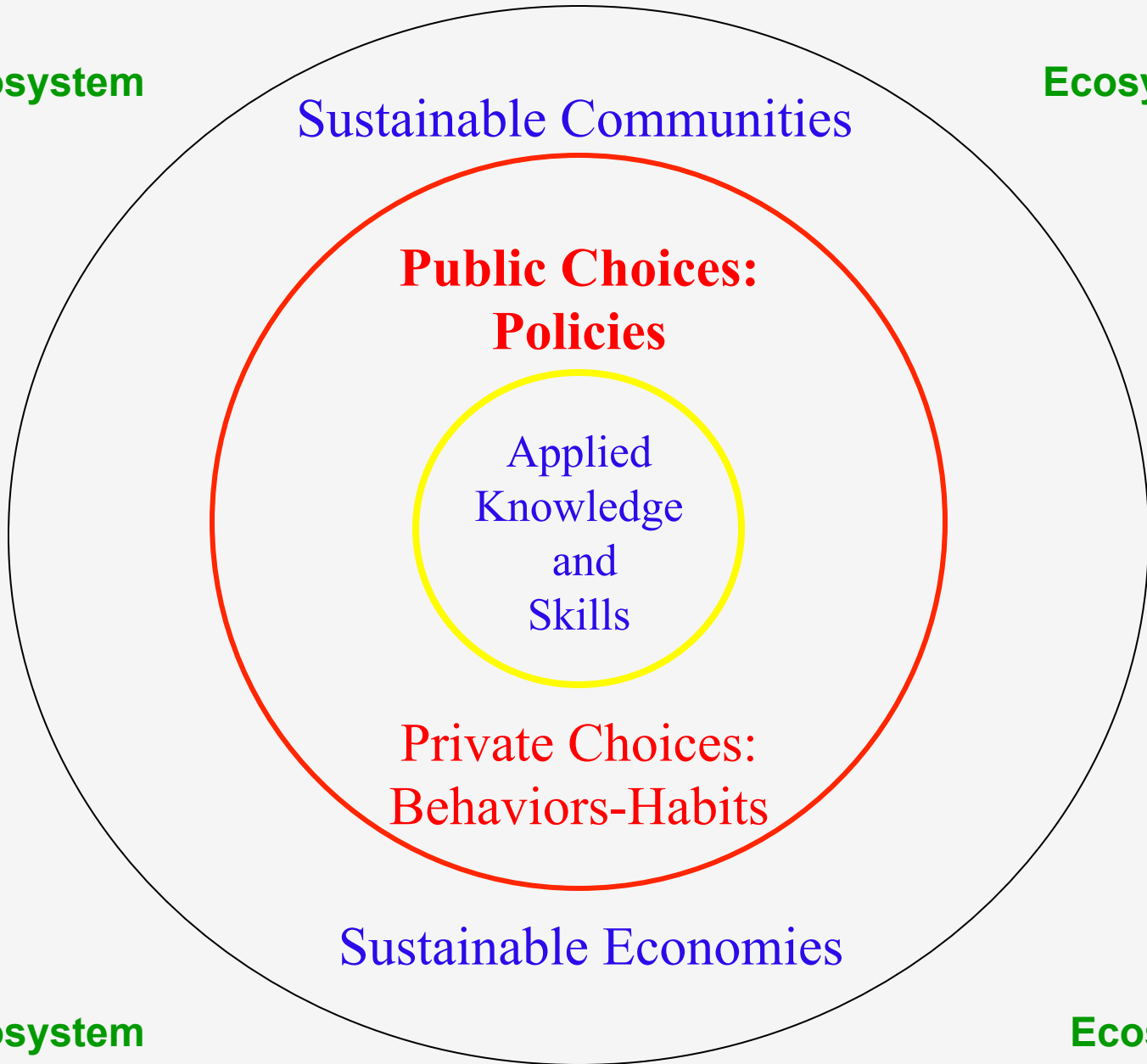
Applied
Knowledge
and
Skills

**Private Choices:
Behaviors-Habits**

Sustainable Economies

Ecosystem

Ecosystem



THE US PARTNERSHIP



FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

Vision: *Sustainable development integrated into education and learning*

- Non-partisan, over 360 registered organizations
- Sector Teams are:
 - Communities
 - Business
 - Faith Based Organizations
 - Youth
 - K-12 and Teacher Education
 - International
 - **Higher Education**

Disciplinary Associations Network
for Sustainability (DANS)

and

Higher Education Associations'
Sustainability Consortium (HEASC)

created this initiative.

**Over sixty national higher
education associations.**



The Disciplinary Associations Network for Sustainability

www.aashe.org/dans

- American Society for Engineering Education
 - Ecological Society of America
 - American Psychological Association
 - Sociology
 - Religion
 - Philosophy
 - Math
 - Broadcasting
 - Architecture
 - Engineering education (civil, mechanical)
 - Business
 - Literature
 - Communications
 - Ecological Economics
 - Chemistry
 - Biology
 - American Association for the Advancement of Science
 - Computer Research
 - Humanities
 - STEM disciplines
 - Political Science
 - Anthropology
- Many more associations!



HIGHER EDUCATION ASSOCIATIONS SUSTAINABILITY CONSORTIUM

www.aashe.org/heasc

1. Presidents
2. Academic Officers
3. Student Affairs
4. Campus Activities
5. Facilities
6. Business Officers
7. Purchasers
8. Others...

“Beyond Doom and Gloom: Engage Students in Solutions to Climate Change”



Why is this initiative needed?

- Educators asked for it
- Practitioners asked for it
- Policymakers asked for it

Students and Climate Change

- **Lots of bad news!** (droughts, floods, more severe weather, sea level rise, disruption of civilization and ecosystems and food chain, species extinction, more disease)
- Students often feel:
 - **frustrated, worried and confused,**
 - **disempowered,**
 - become **early cynics.**
- Often the opportunities they see are **too limited:**
 - **individual choices** (more sustainable living) and
 - **protesting**



Educators asked for it:

- We are **not experts in possible solutions**
- We do **not have energy expertise**
- We do **not fully understand the barriers**
- We would **welcome materials we can use in courses**
- **“Yes, good idea to connect students to solutions for more renewable energies and energy efficiency”**
- **Students responded well to the materials when we piloted them**

Practitioners asked for it:

- Bad energy policies at both state and federal levels **damage** EERE businesses, job growth.
- Policy makers hear from fossil fuel companies & utilities a lot, **not enough support for EERE.**
- **We need student engagement in energy policy!**
We are too busy running businesses/non-profits to do this successfully alone.
- Example – Michigan story



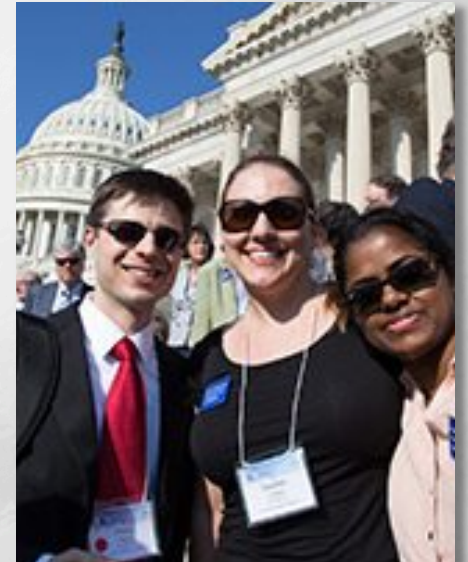
Policymakers asked for it:

- Fossil fuel employees/lobbyists often dominate policy hearings and communications
- Typical comments:

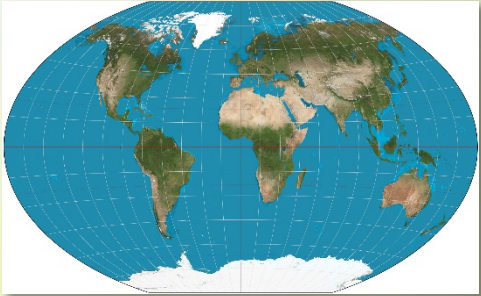
When students are describing how we are impacting their future, our fellow policymakers are more open to supporting renewable energies and energy efficiency policies

New and free initiative for educators

**“Beyond Doom and Gloom:
Including Solutions to
Climate Change.”**



Good news:

- Easy to use
 - Help students
 - High priority for climate change solutions:
**policies needed to transition to a
clean energy future.**
- 
- Note to international attendees (19 countries):
welcome, use these materials, adapt them

Components include:

1. Faculty/staff page,

link in chat box www.aashe.org/ClimateSolutions/Educators

2. Student page,

link in chat box www.aashe.org/ClimateSolutions

3. Short Video and ppt slides

4. Short Assignments

5. Key Facts on Renewable Energies

6. Civic engagement improves learning

FACULTY/STAFF PAGE

[Home](#)[Events](#)[Resources](#)[Connect & Discuss](#)[Join Now](#)[About AASHE](#)[Beyond Doom and Gloom: Including Solutions to Climate Change](#)

Beyond Doom and Gloom: Including Solutions to Climate Change

Introduction

Problem:

Are you or your students worried about the impacts of climate change and not sure what to do to help create significant change? Many faculty and students recognize the importance of climate change yet don't know how to substantially reduce its damage to people and the environment.

Solution:

Include this [short video](#), [powerpoint slides](#) and [optional short assignments](#) in your course to help students understand how they can participate in one of the possible urgent solutions - a transition to a clean energy future. By connecting students to [opportunities to participate in creating solutions](#), frustration and worry about climate change can be shifted to increased knowledge and productive actions.

Why Civic Engagement?

Information on civic engagement and student learning from [Sustainability Improves Student Learning](#):

- Students who participate in civic engagement learn more academic content (Gallini and Moely 2003).
- Civically engaged students learn higher-order skills—including critical thinking, writing, communication, mathematics, and technology—at more advanced levels of aptitude (Cress 2004).
- Civic engagement increases students' emotional intelligence and motivates them toward conscientious community action (Bernacki and Jaeger 2008).

Video

This short, approximately two minute video, will connect climate change to the need for cleaner energy and connect the viewer to ways to get involved in creating better clean energy policies at the state and federal level: <http://tiny.cc/EnergySolutionsVideo>

Assignments/Toolkit

STUDENT PAGE

[Home](#)[Events](#)[Resources](#)[Connect & Discuss](#)[Join Now](#)[About AASHE](#)[Beyond Doom and Gloom: Include Solutions to Climate Change](#)

Beyond Doom and Gloom: Include Solutions to Climate Change

Remove Barriers to Clean Energy Growth!

Click on the links below and sign-up to become more active in clean energy policy:

- [Wind Energy](#) – from the American Wind Energy Industry Association
- [Solar Energy](#) – expanding solar access in states across the nation
- [Beyond Natural Gas](#) – natural gas is not the solution
- [National Policy for Clean Energy](#) – bipartisan efforts
- [The Solutions Project](#) – toward 100% renewable energy

Share the video "[Climate Solutions: Civic Engagement and Energy](#)"

Want to contact your legislators right now?

[Get their emails and phone numbers!](#)

You don't have to be an energy expert. For example, use "I CARE - I Care About Renewable Energies", originally developed at Carleton College. Just call your representatives and say to them:

"Hello, my name is _____ and I am a voter. My address is _____. I care about renewable energies and energy efficiency and want a rapid ramp up of their implementation. Please work on energy policies to make this happen. It will produce jobs, help the economy, increase health, and protect the environment. Please let me know what you do."

[Tips for contacting your legislators:](#)

For Students:

<http://ClimateFixes.org> takes them to
to the webpage for students

www.aashe.org/ClimateSolutions

Links to civic engagement opportunities for:

- Solar Energy
- Wind Power
- Natural Gas is not the solution
- Fixing the economy – a bipartisan price on carbon
- 100% renewables
- Links to who to contact
- Best practices for communicating with policymakers



Energy Civic Engagement Links

Remove Barriers to Clean Energy Growth!
Click on the links below to be part of the solution:

- [Solar Energy](#)
- [Wind Energy](#)
- [Beyond Natural Gas](#)
- [National Policy for Clean Energy](#)
- [Solutions Project: Moving to 100% Renewables](#)



For just this and the next slide, go to:
<http://bit.ly/ClimatePolicySolutions>

Want to contact your legislators?

[Get their emails and phone numbers HERE!](#)

**You might use, “I CARE: I Care About Renewable Energies!”
First used at Carleton College**

(Doesn't even mention climate change.)



“Hello, my name is _____ and I am a voter. My address is _____. I care about renewable energies and energy efficiency and want a rapid ramp up of their implementation. Please work on energy policies to make this happen. This will produce jobs, help the economy, increase health, and protect the environment. Let me know what you do.”

Tips for contacting your legislators:

- Emails and phone calls are best.
- Be brief. Stick to one issue per email/call.
- Introduce yourself/include your contact info
- Be polite! Anger and rudeness will not leave a favorable impression.

[For this slide, go to: http://bit.ly/ClimatePolicySolutions](http://bit.ly/ClimatePolicySolutions)

Don't include civic engagement? It improves learning:

From US Dept. of Education funded “Sustainability Improves Student Learning” at <http://SERC.carleton.edu/SISL>:

- Students who participate in civic engagement learn more academic content (Gallini and Moely 2003).
- Civically engaged students learn higher-order skills—including critical thinking, writing, communication, mathematics, and technology—at more advanced levels of aptitude (Cress 2004).
- Civic engagement increases students' emotional intelligence and motivates them toward conscientious community action (Bernacki and Jaeger 2008).

Components for Faculty:

Short Video to share with students in class or as assignment

link: <http://tiny.cc/EnergySolutionsVideo> (in chat box)

- Motivates the students to help create solutions
- Quickly educates them and links them to opportunities
- Some phrases are designed for inclusion

Components for Faculty:

Short Video to share with students in class or as assignment

link: <http://tiny.cc/EnergySolutionsVideo> (in chat box)

- The video is professional and high quality, watch after webinar via the direct link.

Components for faculty: on faculty page

Short Assignments

Can be used in a wide variety of disciplines.
We can discuss during Q and A.



Assignments Doc

Part I –Video and/or slides

“Climate Solutions: Civic Engagement and Energy ”

Part II - Engagement and Reflection Assignment

A quick but impactful assignment for students

- a) Go to link (at end of video) - <http://climatefixes.org>
- b) Sign up for at least two of these organizations for energy policy info/alerts.
- c) Describe which organizations you signed up for.
- d) Explain why you chose those organizations.
- e) Specify what you hope to accomplish.

Part III - Multiple Choice Questions



Components for faculty:

www.aashe.org/ClimateSolutions/Educators

Key Facts on Renewable Energies

**Extension of the “Call for Energy Literacy”
developed with a DANS Fellow from the
MIT Energy Lab**



[Read More News Stories >](#)

Thirty-One Top Scientific Societies Speak with One Voice on Global Climate Change

28 June 2016 Ginger Pinholster *Updated 28 June 2016 - 11:00am*

 Like 25
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  Tweet
  reddit this!

“Observations throughout the world make it clear that climate change is occurring, and rigorous scientific research concludes that the greenhouse gases emitted by human activities are the primary driver,” the collaborative said in its

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Key Clean Energy Facts

- Right now, we have the technology to supply 80% of the electricity needs of the US with renewables and energy efficiency. (National Renewable Energy Lab Energy Futures Analysis - http://www.nrel.gov/analysis/re_futures/)
- We can ramp up to 80% of our electricity needs from EERE instead of today's 15%. We already have the technologies that **pay for themselves** and provide lower cost.

Clean Energy Policies are Crucial

- Right now policies about our energy future are being made at the state and federal levels.
- Many policymakers don't understand the climate change and energy policy connections. Too many are supporting damaging policies that favor fossil fuels and damage the growth of renewable energies.
- Students can show up and express their desire for policies that support a rapid shift to a clean energy future.
- Students are making a difference when they get involved.
- <http://ClimateFixes.org> – student webpage

Benefits of using these materials

- Easy to use in any course/discipline
- Connect to solutions instead of worry, despair and cynicism
- Teaches the knowledge and skills for: sustainability learning outcomes, critical thinking and skills for democracy
- Energy experts will keep materials updated

Changing what you do in the classroom/on campus
takes effort, but the impacts are
powerful and positive!

Reduces despair and worry,
Moves us to solutions,
Provides skills for life long efforts!



Video Public Launch

tiny.cc/EnergySolutionsVideo

We will email you the following for the launch:

“Please check out this new video that connects students to a solution for climate change: better green energy policies.”

Thank you in advance for distributing when you get the announcement!

Next Steps

1. Assign the video and the student page.
2. Use the assignments on the faculty page.
3. Share this initiative.
4. Announce the video public launch when you get the email.



The Power of What You Do



- *We can choose a sustainable future*
- *Questions/Feedback*
- *Debra Rowe*
- EducatingForASustainableFuture@gmail.com
(in the chat box)



THE END SLIDE – rest of slides are
possibly for Q and A



Components for Faculty:

Short Video to share with students in class or as assignment

link: <http://tiny.cc/EnergySolutionsVideo> (in chat box)

- Caution: Quality of video on the webinar is limited due to webinar platform and might be glitchy.
- Those of you signed into the webinar via cellphone will only hear the video, and might be glitchy due to the large volume of attendees today.
- The video is professional and high quality, so watch after webinar via the direct link.
- Some phrases are designed for inclusive.

Student Learning Outcomes

ACPA President's Sustainability Taskforce, 2006 –
College Student Educators International

1. Each student will be able to **define** sustainability.
2. Each student will be able to explain how sustainability relates to their lives and their values, and **how their actions impact** issues of sustainability.
3. Each student will be able to utilize their knowledge of sustainability to **change their daily habits and consumer mentality**.
4. Each student will be able to explain how systems are interrelated. (systems thinking)

(Also see Learning Outcomes chapter – “Operationalising Competencies in Higher Education for Sustainable Development” *Arnim Wiek, Michael J. Bernstein, Rider Foley, Matthew Cohen, Nigel Forrest, Christopher Kuzdas, Braden Kay and Lauren Withycombe Keeler* in *Routledge Handbook of Higher Education for Sustainable Development*, ed. Barth, M., Michelsen, G., Rieckmann, M., & Thomas, I., Routledge, Oxford, UK.)

Student Learning Outcomes (cont.)

ACPA President's Sustainability Taskforce, 2006

5. Each student will **learn change agent skills**. (<http://heasc.aashe.org/content/heasc-resource-center#ACPA>)
6. Each student will learn how to **apply** concepts of sustainability to their **campus and community** by **engaging in the challenges and solutions of sustainability** on their campus.
7. Each student will learn how to **apply** concepts of sustainability **globally** by engaging in the challenges and the solutions of sustainability in a world context.

These outcomes match international declarations and other countries' learning outcomes ... Svanström,

Lozano-G, Rowe (2008) "Learning outcomes for sustainable development in higher education", [International Journal of Sustainability in Higher Education](#); Volume: 9 [Issue: 3](#); 2008



Energy Civic Engagement Links

Remove Barriers to Clean Energy Growth!
Click on the links below to be part of the solution:

- Solar Energy - <http://www.seia.org/act-now>
- Wind Energy - <http://www.awea.org/gencontentv2.aspx?ItemNumber=800&mainnav=8191&navItemNumber=8209>
- Beyond Natural Gas - <http://content.sierraclub.org/naturalgas/>
- National Policy for Clean Energy - <http://citizensclimatelobby.org/>

<http://bit.ly/ClimatePolicySolutions>

Additional Resources

Assessment and Learning Tool!

www.sulitest.org

- Sustainability Literacy Test! – in over 50 countries and 8 languages!



Professional Development (sample components)

1. Creating learning activities that include sustainability and applied learning/real world problem solving.
2. Creating a theme in your course.
3. Designing what your institution and the surrounding community would look like if sustainability was fully integrated... and creating a stakeholder engagement, task list and timeline to make this happen.

Quality Professional Development produces
effective and enjoyable positive change.

U.S. Department of Education supported initiative

Sustainability Improves Student Learning —

<http://serc.carleton.edu/sisl>

Key Components of quality sustainability assignments

Hundreds of learning activities

Beginner's handbook for educators

More....

Science, Technology, Engineering and Math Society Partners

[American Association of Physics Teachers \(AAPT\)](#)

[American Chemical Society \(ACS\)](#)

[American Institute of Biological Sciences \(AIBS\)](#)

[American Psychological Association \(APA\)](#)

[American Society for Engineering Education \(ASEE\)](#)

[Association for Career and Technical Education \(ACTE\)](#)

[Mathematical Association of America \(MAA\)](#)

[National Association of Biology Teachers \(NABT\)](#)

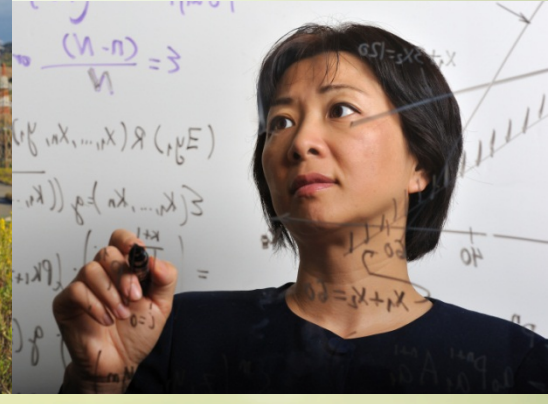
[National Association of Geoscience Teachers \(NAGT\)](#)

[National Numeracy Network \(NNN\)](#)

[Special Interest Group on Computer Science Education \(SIGCSE\)](#)



American Association of Community Colleges' SEED Center: Sustainability Education and Economic Development www.theSeedCenter.org



SEED Project:

Green Genome Initiative

- How to develop/deliver high-quality clean economy job training programs
- How to integrate these efforts with other institutional sustainability efforts (campus greening, sustainability across curriculum...)
- The role of the college in actually building a regional green economy <http://theseedcenter.org/GreenGenome>



Self Assessment

- <http://theseedcenter.org/Special-Pages/Green-Genome/Green-Institutional-Self-Assessment>
- Dimensions:
- Governance
- Program Design and Delivery
- Strategic Partnerships
- Community Engagement






Supporting community colleges in educating for and building a green economy

NEWSLETTER/SIGN-UP

Search



- About SEED
- Membership
- Resources
- Sharing Community
- Colleges in Action
- Support
- News & Events

Connect   

Sign-in/Register

Email


Password

- Quick Links**
- Climate Resiliency Guide
 - SEED Webinar Archive
 - SEED Newsletter Archive

- Resource Center**
- Solar
 - Wind
 - Green Building
 - Energy Efficiency
 - Sust. Ag., Food & Land
 - Transportation & Fuels
 - Green Climate Tech

New Climate Resiliency Guide

Community Colleges as Resiliency Skill Builders



Green Genome Winners

Solar Training Network

SEED Membership

Climate Resiliency Guide

Member Colleges

4	8	1
Kilian Community College		

- Membership**
- Membership Overview
 - SEED Presidents Advisory Cabinet
 - Is Your College A Member?

- Resources**
- Virtual Career Network
 - How Green is Your College?
 - Toolkits & Action Plans
 - SEED Webinars
 - Solar Training Network
 - Better Buildings Guidelines

- Community**
- Green Genome Awards
 - Success Stories
 - Story Snapshots
 - Mentor Connect Program
 - Action Community: Green Job Growth

Resources for You – Great to use in class

- Achieving Sustainability: Visions, Principles and Practices – (MacMillan) encyclopedia with solution orientation, online with free endless downloads after 1 library purchase
- Climate Change Denial – busting myths – www.SkepticalScience.com
- Climate Change Solutions/Energy Literacy key resources - <http://dans.aashe.org/#energy>
- Creating career information for students and employers
(Example from the US - http://www.ncda.org/aws/NCDA/pt/sd/news_article/83053/_PARENT/layout_details_cc/false)

Overcoming resistance to change

Changing what you do in the classroom takes some effort, but the impacts are powerful and positive

ASKS:

1. Share “Stop Doom and Gloom” in January 2017
2. Use bit.ly/ClimatePolicySolutions, Sulitest and other resources now.

KEY OUTCOME

21st century learning outcomes require sustainability perspectives and skills

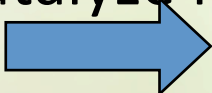
Students, staff and community members know how to and choose to help organizations become more environmentally, socially and economically responsible.

Where? In the personal, career, community and governmental spheres.

*** Change skills list -**

<http://www.myacpa.org/sustaincomm/resources>

Essential instructional approach – real world problem solving for sustainability

1. All of us engaged as **effective change agents*** to create a sustainable future –include as professional/personal development focus - **Change agent skills list** - <http://www.myacpa.org/sustaincomm/resources>
2. Campus and community as a living lab and open to the public – use the media
3. Catalyze movement from apathy/fearful/obedient
 caring, effective involvement (with emotional/interpersonal intelligence)

Applied Learning

- Involves students in working to create a solution to a problem that addresses a genuine need
- “Real World Problem Solving”
- Provides opportunities for students to practice the skills to create positive change
- Helping students make connections between what they learn and how their new knowledge and skills can be used for real world purposes .
- Essential component of education for sustainable development with legacy, multi semester projects

What is happening in the United States

- 2,200 new degrees and certificates in sustainable development
- Using campus and community as a living lab
- Teaching students systems thinking and change implementation skills
- Applied learning as an essential component
- Professional development for educators and staff and community stakeholders: business, government, non-profits
- National networks