Changing culture and behavior to achieve climate neutrality on campus

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YES, VIRGINIA, THERE IS GLOBAL WARMING!
Mason’s Climate Actions To Date

• **2007** – Climate and sustainability initiatives launched:
  - GMU President Merten Signs American College and University Presidents Climate Commitment
  - Sustainability Across the Curriculum Workshop (GMU Faculty)
  - Office of Sustainability created and hired Sustainability Coordinator hired
  - Initial projects – LEED for all new buildings, EnergyStar purchasing policy, public transportation options
  - Climate Communications Survey and Campaign Launched though Student-Faculty Partnership

• **2008** – Concurrent with Performance Contract for energy and water conservation:
  - Pres. Merten leads half-day Climate Action Teach-In
  - Weekly “Mason Forum for Climate Change” stimulates climate-related dialogue within Mason community.
  - GHG Inventory (published Feb 09)

• **2009** – While drafting Mason’s first Climate Action Plan by December:
  - Climate Action Plan (CAP) Core Planning Committee formed
  - 4 weekly “Mason Energy Roundtables” involve 200+ in Mason community’s fuel alternatives
  - CAP charette/seminar
  - CLIMATE CULTURE – 2,000+ (>5% of University)
  - Begin estimating GHG load for in-person vs distance learning
  - Op-Eds
American College & University Presidents’ Climate Commitment

- Acknowledges concern about impending global warming and pervasive impacts.

- Recognizes need to reduce global GHG emissions by 80% by mid-century (latest)

- Acknowledges higher ed. leadership role in global warming via education and community engagement

- Pledges a commitment to climate neutrality through specific actions and timelines (Iteratively refined Greenhouse Gas Inventory [GHGI] & Climate Action Plan [CAP])
Climate Communication Survey (2007)

• 90% of 3500 surveyed would be pleased if Mason reduced GHG emissions
• 400+ self-identified “climate champions” (>1% of GMU)

MASON IS TAKING CLIMATE ACTION

• Investing in energy efficiency
  – Mason is already saving more than $1 million in energy costs every year because of investments in energy efficiency.

• Providing transportation options
  – Mason is working to make public transportation, carpooling, bicycling, and walking better options for the Mason community.
  – See transportation.gmu.edu for shuttle schedules and more.

• Building greener buildings
  – Mason now has policies that all new building will be built to green standards. The Volgenau IT&E building at Fairfax and the new building at Arlington will be the first green buildings.

• Learn more at Green.gmu.edu/climate

You can help with seven simple steps:
1. Turn off lights etc.
2. Shorten your shower.
3. Dress for the season and adjust your thermostat.
4. Reduce-Reuse-Recycle
5. Eat less meat and more local foods.
6. Avoid the drive.
7. Get active, take a class, talk to others.

For T-shirt information, contact Carrie Meyer, cmeyer@gmue.edu
Climate Champions

During Earth Week, 2008, Mason’s Sustainability Coordinator Lenna Storm launched a communication campaign with the help of the Comm 590 class that conducted a Climate Commitment Survey the previous month. Mason’s Climate Champions – several hundred members of the Mason community who, in response to the survey, volunteered to help support President Merten by informing other people at Mason how they can reduce their energy use and greenhouse gas emissions – are a key part of that communication campaign. Word-of-mouth recommendations by Mason’s Climate Champions will play an important role in activating others at Mason to reduce their – and the university’s – carbon footprint.

Mason’s Climate Champions were invited to a training session on April 23rd, 2008 to provide them with some key materials intended to help them make effective word-of-mouth recommendations. The materials provided at training can be downloaded here (below and in the box to the right), and are available for your use.

**Key Messages**
Many members of the Mason Community are not yet aware that Mason has committed to climate neutrality. Achieving 90% awareness level within our community is the primary goal of the campaign. Start up a conversation: “Did you know that Mason has committed to climate neutrality?”

**Mason’s Actions to Reduce Emissions**
Mason has already made great strides to reduce our greenhouse gas emissions that are saving the university more than $1 million every year in energy costs, and additional actions are currently being planned.

**Key Actions People at Mason Can Take**
Reducing Mason’s greenhouse gas emissions is up to all of us. Simple steps like turning out lights when leaving a room can make a real difference.

**Environment, Sustainability, and Climate Change Related Classes**
Taking one of Mason’s many courses related to climate change and sustainability is a great way to meet others and get involved.

**Survey Results**
More than 3500 people responded to the Climate Commitment Survey. An overwhelming 90% said they would feel pleased or very pleased if Mason succeeded in greatly reducing greenhouse gas emissions.
Basketball fans learn of Mason’s actions to improve energy efficiency, provide transportation options, build greener buildings. Fans encouraged to join the effort to green Mason.
Across four Northern Virginia campuses, total emissions equivalent to 100,000 metric tons of CO2, **roughly 4.9 MT per student.**
Welcome to the Web site for the George Mason University Climate Action Plan (CAP) and workspace for its associated Spring 2009 open door charrette-style course.
# Climate Culture - America’s Greenest Campus (2009)

## LEADERBOARD

<table>
<thead>
<tr>
<th>Rank</th>
<th>School</th>
<th>Members</th>
<th>% CO₂ Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University of Maryland - College Park</td>
<td>2257</td>
<td>1.29%</td>
</tr>
<tr>
<td>2</td>
<td>George Mason University</td>
<td>1930</td>
<td>1.44%</td>
</tr>
<tr>
<td>3</td>
<td>University of Massachusetts - Amherst</td>
<td>1018</td>
<td>0.06%</td>
</tr>
<tr>
<td>4</td>
<td>Lone Star College</td>
<td>782</td>
<td>1.53%</td>
</tr>
<tr>
<td>5</td>
<td>University of California - Davis</td>
<td>566</td>
<td>1.12%</td>
</tr>
<tr>
<td>6</td>
<td>Rio Salado College</td>
<td>524</td>
<td>4.40%</td>
</tr>
<tr>
<td>7</td>
<td>University of California - San Diego</td>
<td>507</td>
<td>1.13%</td>
</tr>
<tr>
<td>8</td>
<td>New York University</td>
<td>418</td>
<td>0.60%</td>
</tr>
<tr>
<td>9</td>
<td>American University</td>
<td>305</td>
<td>1.32%</td>
</tr>
<tr>
<td>10</td>
<td>University of Southern California</td>
<td>209</td>
<td>0.34%</td>
</tr>
<tr>
<td>11</td>
<td>Stanford University</td>
<td>190</td>
<td>0.79%</td>
</tr>
<tr>
<td>12</td>
<td>Savannah College of Art and Design</td>
<td>154</td>
<td>1.71%</td>
</tr>
</tbody>
</table>
## Successes

<table>
<thead>
<tr>
<th>Natasha</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washed larger loads of dishes and clothes; used drying rack for more of clothes; switched to manual lawn mower, eco-friendly cleaning products and ~60% recycled trash; combined weekly groceries and errands; turned lights off when not needed.</td>
<td>“Pressure from my family”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kari</th>
<th>Get “my roommates to agree to changes that … affect them” (but saving $ and planet helped convince)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowered thermostat in cool months; limited A/C use; used cold water wash and increased clothes load.</td>
<td>Vivek: “Most of my decisions were based on the economic drive.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Andrew</th>
<th>“Turn these actions into habits”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opened windows and doors to cool apartment in springtime.</td>
<td>“Mom: “What, are you cheap?”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rob</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bought more local goods, got supplies via freecycle and clothes from thrift stores.</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Mom</th>
<th></th>
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<tbody>
<tr>
<td>“What, are you cheap?”</td>
<td></td>
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</tbody>
</table>
Climate Culture Measures and Indicators

**Student Commuting**
- # of shuttle riders
- # of students enrolled in distance education classes
- Percentage of students that do not have a parking permit

**Faculty / Staff Commuting**
- Percentage of population eligible for Commuter Choice that use program
- Percentage of faculty / staff time telecommuting
- Percentage of faculty / staff that do not have a parking permit

**Purchased Electricity**
- Net year to year change in buildings’ energy use
- Office lights and peripherals left on after buildings closed
- Thermostat settings vs compliance w/VA standards

**General Behavior**
- # committing to reduce energy use &/or carbon footprint
- # tracking own carbon footprint.
- # participating in climate-related activities or energy conservation/efficiency actions
Commuting Projects

Technical
• Tools for virtual meetings, distance education and telecommuting
• Car sharing (campus Zipcar access)

Policy
• Preferred parking spaces for car-poolers / hybrid vehicles*
• Annual transportation survey

Behavioral
• Encouraging / facilitating / incentivizing carpooling, public transit
• Biking incentives – shelters, showers; financial incentives for no parking pass*
• Bike share, donation, and repair program
• Bike path / lighting improvement

* Initially Faculty/Staff only
Purchased Electricity Projects

Technical
• Ongoing Energy performance contract with energy manager (Siemens)
  • Industrial upgrades; LED lighting; water conservation; metering enhancements
• Motion sensor light switches, Energy Star washers/dryers, improved insulation
• Visibility of energy use - real-time energy use display (energy monitoring tools)
• PPA contract for solar installation
• Cogeneration

Policy
• Faculty Office “Hotelling”
• Individual department billing for energy consumption
• Master Plan / Building Design Manual updates
• Renewable Energy Credits / Carbon Offsets

Behavioral
• Energy Reduction contests among different populations (e.g., residents, staff) – easy to conceive, hard to implement
Other Climate Related Activities
To conduct unbiased public engagement research - and to help government agencies, non-profit organizations, and companies apply the results of this research - so that collectively, we can stabilize our planet's life sustaining climate.
To provide education, independent analysis and research to simultaneously fight global climate change and reduce world poverty.....keep the interests of the world's poor "at the table" when climate change adaptation and mitigation strategies are developed.

..deliver this mission through balanced analysis including science, technology, economics, ethics, policy and public health.
Curriculum enhancement

✔ Graduate degrees in Climate Dynamics, Earth Science, and Environmental Science and [Public] Policy
✔ Renewable Energy and Sustainability Studies Minors

☐ Environmental and Sustainability Studies Major
Global Warming: Science, Adaptation and Mitigation

Jagadish Shukla
Distinguished University Professor, Department of Atmospheric, Oceanic and Earth Sciences
Monday, September 21, 2009 at 7 p.m.

The planet is getting warmer, the sea level is rising, and the concentration of greenhouse gases in the atmosphere is increasing at an unprecedented rate. Yet, there continues to be skepticism, and in some sections of society outright hostility, towards the concept of global warming and its human origins. Dr. Shukla will show comprehensive evidence that global warming is real, and it is a clear and present danger. He will explain the facts behind the observed and projected trends for these unprecedented changes that implicate human activity—and for which no natural causes can possibly be responsible. Shukla will describe the projected climate changes in the twenty-first century for the world, the mid-Atlantic region, and for Virginia. He will conclude with suggestions for adaptation and mitigation strategies, and possible roles of individuals, institutions and governments in responding to the consequences of projected climate change.
“The goal is for these students to know enough that they can be good, informed citizens and take part meaningfully in the public debate on global warming.”
Commuting energy would cost 100x more for these students…

while DE created 1/10th the GHG emissions.

Source: Peer survey by ecology student E. Tucker; energy cost calculated by Prof. D. Sklarew
Engaging the next generation of climate champions, “Go Green with Gunston” (our mascot) teaches K-3 student benefits of green behaviors, focusing on renewable energy.

= EDU-TAINMENT

http://gogreenwithgunston.gmu.edu/
PowerShift 2009

Virginia Power Shift 2009 Blog

Virginia Power Shift 2009 and the 350.org INTERNATIONAL DAY OF CLIMATE ACTION

Posted by Kat McEachern on Wed, Oct 28, 2009 @ 2:13 pm

100+ Virginia Activists converge on George Mason University to plan the next phase of the climate revolution in the USA... and the world. We held our 350.org day of action at the same time, emphasizing the GLOBAL character of this very real threat of climate change, rising seas, and melting icecaps.

Kat McEachern’s blog   Add new comment   Read more »
Global Warming: The Falsehood Coming to a Campus Near You

OPINION

The Lies and Deceptions You May Have Been Told

Before Columbus Day, brave conservative writer Alan Moore wrote “Global Warming: The Falsehood Coming To A Campus Near You,” and was subsequently mangled a week later by four different letters to the editor where his facts, his journalistic integrity and even his ignorance of the world’s problems due to a “privileged life” were called out. With respect to Mr. Moore, this is exactly the kind of thing that should happen.

It does not take someone majoring in the natural sciences to understand faulty research and it is irresponsible to ignore the growing objection to the reasoning behind theories on man-caused climate change.
We're changing culture on campus – from top to bottom and back and someday we'll find it, the rainbow connection…

Source: http://muppet.wikia.com/wiki/The_Rainbow_Connection