

Undergraduate Association Committee on Sustainability

Dear Class of 2012, We close to MIT! We are very excited to present the 2008 UA Guide to Sustainability.

Within, we highlight twelve fantastic student groups working within the realms of sustainability, energy, and the environment. By no means is this an exhaustive list - we hope to introduce you to the sorts of groups that already exist on campus. MIT is a place where the future is blossoming, where no idea is impossible: we hope to help you seek out the opportunities in which you want to take part.

We are both proud to say that we are involved in the Undergraduate Association, MIT's student government. As the chief liaison between students and the administration, as well as the voice of the undergraduate student body, the UA continuously strives to understand, represent, and address the needs of all of us: the undergraduate population.

Want to get involved? Want to learn more? Go to ua.mit.edu to find more information about the Undergraduate Association and all the things that we do.

Noah Jessop UA President

Vrajesh Modi

Chair, UA Committee on Sustainability



Undergraduate Association

MIT to "Walk the Talk"

o help meet the world's pressing energy and environmental challenges, the Institute-wide MIT Energy Initiative (MITEI) has been undertaken. It is designed to help transform the global energy system to meet the needs of the future and to help build a bridge to that future by improving today's energy systems.

MITei

Building on MIT's long-standing research and educational activities for energy and the environment, the MITEI program includes research, education, campus energy management, and outreach activities that cover all areas of energy supply and demand, security, and environmental impact.

A key component of the Energy Initiative is an innovative campus energy program that will use the MIT campus as a learning laboratory to develop and showcase leading approaches for significantly reducing energy use and greenhouse gas emissions. The Campus Energy Task Force has been established to develop and coordinate an integrated strategy and program of action that enables MIT to "walk the talk" on energy and the environment. The task force includes active participation from all members of the MIT community.

Undergraduate and graduate students have made important contributions to first year's activities. For example, students have carried out a dorm energy conservation con-



test, developed a cooking oil-to-diesel fuel conversion unit, set up a map of energy use across the campus, and surveyed and identified measures to substantially improve the energy efficiency of laboratory buildings. As co-chair of the campus task force, I urge you to get involved and welcome your participation. There are numerous on-going student projects and energy related groups you can join. This booklet is an introduction to many of these activities. In addition, if you have some new ideas related to campus energy, you may qualify for seed funds to help launch a new student project. Your contribution can make a difference.

Leon R. Glicksman

Co-Chair, Campus Energy Task Force Professor, Building Technology Program

"Use the M



Biodiesel@MIT

http://web.mit.edu/biodiesel

2008-2009 Leaders:

Sara Barnowski, sarab@mit.edu Jillian James, jillianj@mit.edu Sam Fox, foxs@mit.edu Teresa Gomez, teremari@mit.edu

Mission:

Biodiesel@MIT wishes to increase the sustainability of practices on campus by using waste from campus dining locations to power the Tech Shuttles.

Description:

Biodiesel@MIT is a student-initiated group that is attempting to get a biodiesel processor installed on campus so that we can process the used vegetable oil from campus dining into fuel for the Tech Shuttles. We hope to reduce the waste produced on campus while reducing emissions from our vehicles.

2007-2008 Activities:

Attended the following fairs: Tech Fair, Energy Night at the Radisson in Cambridge, Energy Night at the MIT Museum, CPW Activities Fair, Eco Expo, Cambridge Science Festival at the MIT Museum.

Planned Activities:

- Get the processor installed on campus
- Determine the logistics of running the processor and transporting the fuel
- Maintain and increase student interest



Biodiesel@MIT

IT campus as a learning laboratory"

Dorm Electricity Competition

http://energymap.mit.edu/dorm

2008-2009 Leader: Tim Grejtak, grejtak@mit.edu

Mission:

The purpose of the Dorm Electricity Competition is to demonstrate the benefits of non-technical solutions to issues regarding energy. We aim to educate the community about behavior change and encourage people to rethink how they use electricity. Our goal is a long-term, sustainable reduction in electricity use in all student groups, on- and off-campus.

Description:

The Dorm Electricity Competition promotes energy efficiency and conservation through sustainable behavior change. Each year, we host the Undergraduate Dorm Electricity Competition which encourages undergraduate students living in on-campus dorms to conserve electricity over a two month span. The dorm that experiences the greatest change in electricity consumption receives \$10,000 toward energy efficient improvements. In addition to event planning, logistics, and data analysis for the competition, the DEC also attends several presentations each year to showcase our results.

2007-2008 Activities:

- 2008 Undergraudate Dorm **Electricity Competition**
- The Dorm Electricity **Competition Kickoff**
- The Dorm Electricity Competition **Closing Ceremony**
- Various Presentations on Campus

Planned Activities:

- 2009 Undergraduate Dorm **Electricity Competition**
- · Expect to use the newly installed real-time electrical metering
- 2009 Graduate Dorm **Electricity Competition**
- · Currently working to expand the Undergrad DEC to graudate students
- 2009 FSILG Electricity Competition
- Planning to expand competition to interested FSILG
- Various Presentations

Contact:

grejtak@mit.edu

Accomplishments:

Last year, the DEC saved 261 MWh of electricity (enough to power 35 homes for a year), translating into over \$34,000 in electricity costs. Some dorms reduced their weekly energy consumption by as much as 33%. Eventwise, the DEC held a very well received showing of Leonardo DiCaprio's critically acclaimed "The 11th Hour" at our kickoff event.



(Enough electricity to power 35 homes for a year)



Electric Vehicle Team

http://web.mit.edu/evt

2008-2009 Leaders:

Irene Berry, iberry@mit.edu Jeff McAulay, jmc3@mit.edu Josh Siegel, j_siegel@mit.edu

Mission:

The mission of EVT is to:

- demonstrate and research electric vehicle technologies,
- provide educational opportunities for MIT students, and
- increase public awareness of electric and other advanced vehicle technologies.

Description:

The MIT Electric Vehicle Team (EVT) is a multidisciplinary group of undergraduate and graduate students that designs, builds, and tests electric vehicles (EVs). EVT is based out the Sloan Automotive and Electrochemical Energy Laboratories at MIT.

2007-2008 Activities:

Public/showcase events:

- MIT Energy Night
- Kick-off and intro to EVs meeting and presentation
- MIT Earth Day Fair
- MIT EcoExpo
- Cambridge Energy Festival
- NAEM Corporate Climate
 Strategies: Implementing Best
 Practices in GHG Management
 and Energy Efficiency Workshop

Planned Activities:

- Continued testing and refinement of Porsche 914 EV
- Design and initial development of advanced EV system for future vehicle using A123 System batteries
- Engage more students and volunteers in team activities through class projects and UROPs

Contact: evt-exec@mit.edu

Accomplishments:

- Successful completion of electric vehicle conversion using 1976 Porsche 914 with 18 Valence Technology Lithium-ion batteries and a 43 kW Azure Dynamics AC induction motor
- Represented the team at numerous energy related poster sessions
- Article about the team published on MITEI website, MIT News office, and in Tech Talk
- UROP and independent study credit for a number of team members based on projects for EVT
- Weekly team meetings to discuss progress on the vehicle and for team members to present to each other about EV topics and technologies

Current Vehicle: Porsche 914 BEV

arging int

EVT is currently finalizing conversion of a 1976 Porsche 914 into a battery electric vehicle (BEV) using 18 Valence Technology lithium-ion (Li-ion) batteries.

The car is small and light, weighing only 2100 lbs before the conversion. We removed the engine, exhaust lines, and fuel tank and installed an electric motor, 18 batteries, a battery charger, and various smaller components. The conversion resulted in a net weight increase of approximately 400 lbs. We estimate the vehicle will accelerate from 0-60 mph in 20 seconds, and the range will be about 100 miles.

The Generator

http://sustainability.mit.edu/Generator

nning in the fall of 2008, The Generator will become a part of Sustainability@MIT. All of its goals and activities will continue under that name. See sustainability.mit.edu for more information.



The MIT Generator exists to unite and catalyze student groups working on local energy, environment, and sustainability projects with a campus focus.

Students walking the talk on energy and the environment

2008-2009 Leaders:

Adam Siegel, asiegs@mit.edu Chris Kempes, ckempes@mit.edu

Mission:

The MIT Generator exists to unite and catalyze student groups working on local energy, environment, and sustainability projects with a campus focus.

Description:

The MIT Generator brings together students interested in sustainability activities and projects. We catalyze student projects then empower the students to act on their sustainability interests.

2007-2008 Activities:

- 2 major events with around 120 attendees
- Weekly events with around 10-20 attendees per session

Planned Activities:

MIT Generator (in the Fall) and MIT Re-Generator (in the Spring): events to bring together students interested in sustainability activities on campus!

nlishments

he Generator and Re-Generator events attracted over 100 students and faculty, and spawned more than 20 studentrun projects. Membership has grown tremendously this year and major projects have taken root. We have been publicized

both internally, on the MIT homepage and MITEI spotlight, and externally, on NPR's Hear and Now with Robin Young. We have attracted the interest of many outside organizations and companies, offering to provide their support, products, and time.



Share a Vital Earth (SAVE) Beginning in the fall of 2008, SAVE will become a part of Sustainability@MIT. All of its goals and activities will continue under that name. See sustainability.mit.edu for more information.

http://web.mit.edu/save/www/index.html

Contact: save-core@mit.edu





2008-2009 Leaders:

Kendra Johnson, kendraj@mit.edu Froylan Sifuentes, froy@mit.edu

Mission:

SAVE stands for Share A Vital Earth. Our primary goal is to promote environmental conservation and awareness at MIT and in the surrounding community. We are composed primarily of undergraduates and we organize small and large events open to the general public, perpetual actions (like promoting recycling), and maintenance of an email list.

Description:

The focus of our activities changes each year depending on the interests of our members. In the past we have worked on issues and campaigns such as reducing our paper consumption on campus, reducing the amount of electricity used, and greening our campus. Currently our entire focus is on climate change which encompasses a wide array of environmental issues, as well as social, economic, and political concerns.

2007-2008 Activities:

- Focus on Climate Change
- Stuff Fest
- Athena Header Page Notebooks
- Paper Conservation
- Reusable Coffee Mugs
- Informal Booths and Event
- Involvement in the Massachusetts Power Shift Campaign of 2008

Accomplishments

- 1. Our main event for the 2007-2008 year was Focus on Climate Change, a three-day campus-wide symposium on climate change with 11 events and speakers from 12 different departments. It was a huge success, drawing crowds to hear professors from departments ranging from Women's Studies to Urban Planning discuss the relationship between their departments and climate change.
- 2. We collaborated with a Generator working group, Closing the Loop, to implement "Print Smarter" signs in all of the rest of the Athena clusters (two trial clusters were implemented in spring 2007). 200 signs have been produced, laminated, and put into clusters. To complement this, we did a publicity blitz of posters printed onto discarded header pages and a sale of reclaimed paper notebooks for \$1.
- 3. We have coordinated with IS&T to arrange for the default Athena printing setting to be changed to doublesided. The change is planned to go into effect for the incoming Class of 2012. We are now working with IS&T along with a new "Paper Saving" group to start including instructions for how to turn off header pages on the header pages themselves.

Other

We turned 10,000 pages of unclaimed wasted print jobs and header pages from Athena clusters into reclaimed notebooks.

Solar Electric Vehicle Team

http://www.mitsolar.com

Contact: gosolar@mit.edu



The SEVT team

Mission:

The MIT Solar Electric Vehicle Team exists for the purpose of designing, financing, and constructing solar and/or electric vehicles in order to promote public awareness and engineering excellence.

Description:

Over the past 20 years, the MIT Solar Electric Vehicle Team has designed and built 10 vehicles and raced them all over the world. The team has promoted alternative energy and transportation through participation in races as well as in local fairs and community events. SEVT provides practical skills impossible to communicate in the classroom environment, turning its members from students into engineers. In addition to hands-on engineering experience, students develop project management and business skills.

2007-2008 Activities:

Team efforts for the 2007-08 academic year focused on the design and construction of a new car.

We did display posters at an MIT Energy Club event in the fall, and our old vehicle at a Cambridge Science Festival venue in the spring.

Planned Activities:

Planned activities include a mechanical redesign of our most recent vehicle.

Present Vehicle: Tesseract

Tesseract is a single-seat high performance solar race car. Because we're trying to attain highway speeds on the same power as a hairdryer, everything on the car has a necessary and specific purpose. If it isn't essential, we leave it out. All together, the car weighs about 375 lbs without driver.

Undergraduate Association Committee on Sustainability

http://ua.mit.edu/sustainability

Contact: ua-sustainability-chairs@mit.edu



2008-2009 Leader:

Vrajesh Modi, vrajesh@mit.edu

Mission:

The MIT Undergraduate Association Committee on Sustainability is charged with galvanizing passion, energy, and interest in sustainability on campus. This committee interfaces with other student advocacy and policy groups, facilitating communication to induce change. This committee also identifies and addresses needs within the undergraduate sustainability community.

Description:

The Committee on Sustainability is responsible for working with MIT student groups and administrators to make MIT a greener campus. It focuses on finding ways for MIT to employ more efficient energy sources, and it aims to raise awareness of pressing environmental issues within the student body.

2007-2008 Activities:

- 2007 Guide to Sustainability at MIT
- Assisted in advertising for The Generator and Re-Generator
- Real-time dorm electricity meters
- FSILG Recycling
- Presidents Climate Commitment Petition

Planned Activities:

- Continue 2007-2008 activities
- "Discover Sustainability at MIT" Orientation Event
- Independent Sustainability Projects
- Recyclemania
- Composting
- Sustainability Coordinator at each dorm

MIT Energy Club

nienen

Contact:

Lara Pierpoint (Ipier@mit.edu), Amy Fazen (mcknightfazen@sloan.mit.edu)

Mission:

Collaboration and education across disciplines and energy interests through factbased analysis.

Description:

The MIT Energy Club seeks to bring together and educate the MIT energy science, technology, policy, and business communities through initiatives focused on understanding the global energy challenge through fact-based analysis and education.

2007-2008 Activities:

- Energy Night
- Lecture Series (bimonthly)
- Discussion Series (bimonthly)
- Salons (one per semester with MITEI)
- Tours
- Mentorship program

Planned Activities:

- Energy Night
- Lecture Series (bimonthly)
- Discussion Series (bimonthly)
- Salons (one per semester with MITEI)
- Tours
- Mentorship program

Accomplishments:

- A stellar Energy Night, bringing in record numbers of people from MIT and from the community (soon-to-be Stellar Conference) that sold out its tickets in record time
- Creating a strong relationship with DOE, owing to visits by Steve Isakowitz (DOE CFO) and Secretary Bodman (pending), with outreach coming our way from Ray Orbach (science undersecretary), and interaction with Clay Sell (former deputy secretary)
- Our most major accomplishments are when we bring students, policymakers, faculty, speakers, and other together, and they have a conversation, start a company, dream big, or have a debate.

Other Information:

The Energy Club has doubled in size since last year, and the number of events put on this year is roughly triple the number last year.

MIT Food Initiative

http://sustainability.mit.edu/MIT_Food_Initiative

Contact: food@mit.edu

2008-2009 Leaders:

Matt McGarvey, mjm76@mit.edu Todd Schenk, schenk@mit.edu Haley Peckett, peckett@mit.edu

Mission:

[Creation of] a campus where sustainable food is the norm.

Description:

Serve as an umbrella organization for efforts relating to organic, local, and healthy food on campus. Our projects use food as a medium to increase environmental and human health and well-being.

2007-2008 Activities:

- Market-based surveys
- Creation of sustainable caterers database
- Study of current food activities at MIT
- Screening of King Corn
- Coordination with GreenSAP (School of Architecture and Planning) for sustainable catering

Planned Activities:

- · Outreach and education about local and organic foods
- · Collaboration with other existing food organizations
- · Mapping of food sources/distributors
- Facilitation of more local and organic foods on campus.



A campus where sustainable food is the norm.

Sloan Energy and Environment Club

www.sloanee.com

Contact: ibschild@sloan.mit.edu



2008-2009 Leaders:

Ted Carstensen, carstensen@sloan.mit.edu Ilissa Schild, ibschild@sloan.mit.edu Dan Cahan, dcahan@sloan.mit.edu

Mission:

The Energy & Environment Club's mission is to bring the Sloan and MIT communities closer to current trends, technologies, and careers in Energy and Environmental Management. Sensitive to the natural interplay between Energy and the Environment, we look to encourage leadership in the energy sector and excellence in both direct and indirect environmental stewardship.

Description:

The Sloan Energy and Environment Club works closely with the MIT Energy Club and other student groups around campus to understand and develop the role of business in energy and environmental challenges.

2007-2008 Activities:

The Sloan E&E Club hosts the following events:

- Regional Energy Treks
- Energy Internship Panel
- Industry speaker and social events
- The Sloan E&E Club works with the MIT Energy Club to host the following events:
- MIT Energy Conference
- MIT Energy Night
- Energy 101 Series

Planned Activities:

- MIT Energy Conference (w/ MIT Energy Club)
- MIT Energy Night (w/ MIT Energy Club)
- Energy 101 Series (w/ MIT Energy Club)
- Regional Energy Treks
- Energy Internship Panel
- Industry speaker and social events



Students for Global Sustainability (SFGS)

http://web.mit.edu/sfgs

Contact: sfgs-exec@mit.edu

2008-2009 Leaders:

Eva Cheung, President, foreva@mit.edu

Description:

Students for Global Sustainability (SfGS) is an undergraduate and graduate student organization committed to sustainable development and conservation projects on both the global and local levels. SfGS is a member organization of the World Student Community for Sustainable Development (WSC-SD), an international partnership seeking to promote sustainable development in research, education, and day-to-day collaborations among tomorrow's scientists, engineers and policy-makers.

2007-2008 Activities:

- Eating Green@MIT
- Leading Green@MIT
- Zero Waste Party
- Participation in Alliance for Global Sustainability Conference
- 2 FreeMeets
- · Focus on Climate Change
- EcoExpo
- Speech by Michael Shellenberger and Ted Nordhaus
- Letter writing Workshop
- Participation in Earthweek
- Showing of King Corn
- Environmental Film Festival during IAP

Accomplishments:

SfGS

GreenLiving series, highlighting personal responsibility and action in sustainability. Events included: EatingGreen, on sustainable food practices, featuring as presenters Marietta Buck, head of residential dining, and Will Gilson, head chef at Garden at the Cellar; and LeadingGreen, on personal leadership and sustainability, featuring as facilitators Laxmi Rao (head of Energy for IS&T), Jason Jay, Elsa Olivetti (organizers for the MIT Generator), Robin Elise (director of Energy Initiative), Heath-Zero Waste Showcase, displaying and celebrating the sustainability efforts on campus and environmentally-friendly living in general.

Spring accomplishments: AGS student conference - students from around the world met at the Alliance for Global Sustainability meeting in January to discuss new ideas and perspectives in sustainability. FreeMeet - an innovative event for people to bring things they no longer wanted and take things that they discovered ("bring your trash and find some treasure"), with leftover items donated to the Cambridge Shelter and the Margaret Fuller house. attend a Clean Energy Revolution - a talk on a new energy economy by Ted Nordhaus and Michael Shellenberger, distinguished authors and environmental advocates reviewed in publications such as the New York Times and Wired Magazine

MIT Student Pugwash

2008-2009 Leaders:

Sam Clark, Samclark@mit.edu

Mission:

to encourage social responsibility in science and technology

Description:

Pugwash is a student group that holds regular meetings and events that encourage students to take an active role in social responsibility in science and technology

2007-2008 Activities:

In the fall we held a weekly New York Times coffee and doughnuts event. This event was every Sunday morning and encouraged students to read and discuss current events while enjoying a light breakfast. We held a dinner and discussion on healthcare and the differing views of the current presidential candidates.

We hosted an event titled Pakistan Eye Of the Storm. Our key speaker for this event was Dr. Adil Najam head of the Fredrick S Pardee Center at Boston University. Dr. Najil spoke on the current situation in Pakistan concerning human rights. This event was co-sponsored by MIT Amnesty International.

Our next event was the Nuclear energy event: From Global Warming to Global Arming.

David Hill Deputy Laboratory Director, Science and Technology, Idaho National

web.mit.edu/pugwash

Laboratory and Richard Clapp Professor, Environmental Health, Boston University School of Public Health were speakers for this event.

After this we hosted a speaker from SEA on current problems in science policy. The goal of this event was to encourage students to become educated about the current problems in science policy and to become involved in the election process. This event was a success and was attended by both undergraduate and graduate students.

The next event was a dinner and discussion about antibiotic resistance and agricultural policy. This event did have some attendance problems but the Pugwash- dinner and

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Our next event was the Nuclear energy event: From Global Warming to Global Arming.

David Hill Deputy Laboratory Director, Science and Technology, Idaho National Laboratory and Richard Clapp Professor, Environmental Health, Boston University School of Public Health were speakers for this event. This event was attended by students from several different universities including Harvard.

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Student Pugwash then sponsored a large group of students two day presentation and display on Stereotype threat, racism, and prejudice as it relates to science, research, technology, and education. This presentation generated a lot of positive responses from both students and faculty.



Contact: pugwash-officer@mit.edu

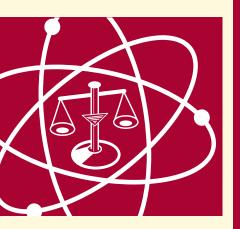
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Planned Activities

- Speakers to talk about
 pharmaceutical development.
- Speaker to talk on nuclear weapons.



Campus Sustainability UROPs

http://lfee.mit.edu/urops (click on the CS UROP link)

You're a consultant; MIT and the planet are your clients. Through the Campus Sustainability UROPs (CS UROPs), students can research, recommend and implement change in technical, financial, and policy systems to make MIT more sustainable.

The CS UROP Program funds undergraduate students to examine MIT's campus infrastructure with the goal of reducing MIT's environmental footprint. Projects may focus on heating, lighting, electricity use, water use, renewable energy, solid and hazardous waste, university planning and many other areas. The program emphasizes not just technical analysis, but also an understanding of the policy and financial implications of technical work. This perspective maximizes the probability that good technical ideas will be implemented over the long-term.

Past and planned CS UROPs include:

- Green dorms assessment across universities and options for green construction at MIT.
- Analysis of laboratory energy efficiency and ventilation options.
- Observational research of recycling systems.
- Planning and lab testing for the new Biodiesel@MIT fuel converter
- Integrated auditing of building

systems and occupant behavior

- Collecting and analyzing data for possible wind power installations
- Researching innovative financing mechanisms for campus improvements

Each CS UROP works with both a faculty advisor and a technical advisor from MIT Facilities or the Environmental Programs Office. At the conclusion of the UROP, students submit their conclusions in writing and through a presentation with key staff from administrative and relevant academic departments.

Here's your chance to change the world without leaving campus.

More Information: http://lfee.mit.edu/urops

(click on the CS UROP link)

Amanda Graham, agraham@mit.edu Director, MIT Energy Initiative Education Office.

Steve Lanou, slanou@mit.edu

Deputy Director, Environmental Sustainability, EHS.

The CS UROP Program is a collaborative project of the Laboratory for Energy and the Environment and the Environmental Programs Office.

This booklet would not have been possible without the incredible support from:

Campus Energy Task Force

MIT Energy Initative

Julie Norman Senior Associate Dean for Undergraduate Education

Student Activities Office

Also, a huge thank you to Beth Conlin, Professor Leon Glicksman, Amanda Graham, Austin Oehlerking, Steve Lanou, Alfredo Angeles, and of course all of our contributors.

In addition to this booklet, there are a number of other amazing resources regarding energy, the environment, and sustainability at MIT. Here is a list of some of them. Just remember that these websites are many layers deep, so enjoy exploring all that they have to offer!

Sustainability@MIT sustainability.mit.edu

MIT Energy Initative homepage web.mit.edu/mitei

The Environment at MIT

web.mit.edu/environment

Laboratory for Energy and the Environment Ifee.mit.edu

MIT Working Group Recycling Committee web.mit.edu/workinggreen

MIT Facilities web.mit.edu/facilities/environmental

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