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Middle East and North Africa ESTH Hub Activities Report published by Caron De Mars and Yara Abu Laban

Thank you for all the posts who submitted nominees for the 2012 Women in Science Hall of Fame.

Highlights of Lebanon Trip, Oct. 3 & 4:

2011 Woman in Science Hall of Fame Honoree Nesreen Ghadeer:



We were privileged to meet this amazing woman, who was the only female engineering student in Kuwait in the early 80s and one of three female mechanical engineering PhD candidates in 1985 at the Massachusetts Institute of Technology. She has four experimental offices at the American University Beirut (AUB) where she and her students are developing monitors that respond to an individual occupant's body heat, and adjust room temperatures accordingly. She has changed perceptions of females in science and leadership at AUB and became its first female chairperson in engineering in 2001. UAB now has four female engineers on its faculty. Dr. Ghaddar received to

the *Outstanding Reviewer Award* for the American Society of Mechanical Engineering (ASME) Journal of Applied Mechanics in 2003 and is a member of the Editorial Board of the International Journal of Thermal Sciences. Additionally, she served on the editorial board of the International Journal of Green Energy. She expressed willingness to work with our embassy in Beirut to mentor youth and speak at outreach events.

The Lebanese Center for Energy Conservation (LCEC) was founded in 2002 as the technical arm of the Ministry of Water and Energy. Lebanon's 2020 renewable energy goals include 12% thermal and 2-6% hydro-power. Although LCEC doesn't have a specified 2020 goal for wind power, it is planning a 1600 mw wind farm, after environmental impact studies to assess how to diminish the impact on birds. LCEC has purchased seven million compact fluorescent light (CFL) bulbs to replace public street lighting. The Center also provides zero-interest loans for solar water heaters.

Lebanon Water and Sanitation: According to the World Bank, 60-70% of the water resources in Lebanon are polluted and only 4% of sewage water is treated. We visited a USAID-funded water treatment plant a few hours outside of Beirut in Ferzol. Currently USAID has funded (built) two small treatment plants and plans to add an additional two. Lamentably, the treated water is piped a couple of miles to a stream that is laden with trash. Ferzol's officials accompanied us to this polluted stream, and said that they were going to post cameras to detect, arrest, and prosecute the polluters. We later met with the

impressive officials of the Zahle municipality. With seed money from the World Bank in 2001, the municipality built a multi-celled sanitary landfill and took over its operations in 2006. Zahle separates the waste, 55% of which is organic. Part of the landfill's operating expenses are recovered through composting 90 tons of organic waste per day, which is sold as fertilizer. The municipality shreds used tires for a composite to line the bottom of the cells to prevent soil and groundwater pollution. Although plastic bottles are shipped to China for recycling, as they are throughout the Middle East, the bottle caps are saved for NGO Arc En Ciel. A ton of bottle caps sells for \$200 and enables the NGO to build one wheel chair with the proceeds. Zahle collects 800 kilos/day of bottle caps for this NGO. <http://www.dailystar.com.lb/News/Local-News/Feb/06/NGO-collects-bottle-caps-to-raise-funds-for-wheelchairs.ashx#axzz1h4VFO67D>

Zahle traps biogas, but unfortunately is prohibited from using this clean energy for its own operations. The Lebanese utility company forces the municipality to flare the gas. I later raised the matter of this wasted resource with the Lebanese Center for Energy Conservation.

U.S. Forest Service and USAID Team Up for Reforestation in Lebanon: We met with a dynamic team of forestry professionals funded by USFS and USAID who are working with nurseries to grow five to six indigenous tree species to reforest nine areas in Lebanon, paying particular attention to how tree biodiversity may decrease the chance of forest fires. A variety of communities were selected for the reforestation program based on diverse terrain, soil types, and elevation. Some land was deforested to build militia bases during the civil war, and trees were felled in other areas during demining operations. The team will hire inhabitants adjacent to the forest to plant and water the trees. Project implementers will train citizens on how to sustainably harvest the forest to make charcoal. A large educational component will demonstrate the economic and environmental value of the forest. The U.S. Forest Service is mapping Lebanon to pinpoint acreage vulnerable to wildfires and additional areas suitable for reforestation. The mapping data will be added to the Lebanon Reforestation Initiative website to allow researchers to access the information.

Highlights of Morocco Trip, Oct. 11 & 12:

Moroccan "TechWomen": It is always exciting to meet with groups who have attended State's International Visitor and Voluntary Visitor programs. They are consistently energized and ready to make a big impact in their home country! This year, we selected women from Algeria, Egypt, Jordan, Lebanon, Morocco, the West Bank, and Gaza to complete a month of mentorships at leading technology companies in Silicon Valley. The Moroccan delegation stated the program was an eye-opening experience for all of them, and even inspired one woman to start a business at home. One participant commented that she immediately admired her mentor, but began to relate to her when her mentor received a call from her daughter's school reporting her child was ill and a parent needed to pick her up. I'm sure these four women also inspired their mentors. One "TechWoman" said that her father always pressed his three daughters to achieve: one is an M.D.; another an architect; and she is a mathematician working in the technology field. When she returned from the program, she started an association for women in engineering and science.

Moroccan Renewable Energy:

Moroccan Agency for Solar Energy- The Moroccan Agency for Solar Energy is pushing forward with an ambitious program to put 2500 megawatts (MW) of solar energy on the grid by 2020. The GoM got a grant from the World Bank to determine the best sites for solar plant placement that will consider not only days of sunshine, but infrastructure access, industrial integration, and electrical grid access and capacity. The government is also considering subsidizing renewable energy, the regulatory framework, and giving special treatment to investors proposing large solar projects. The U.S. Trade Development

Authority gave a grant to provide technical assistance in evaluating concentrated solar power (CSP) projects, which included a visit to Burbank, CA-based eSolar <http://www.eSolar.com/>. The Moroccan government has a tender for a 125-160 MW CSP project and qualified four bidders: the final selection will be in early 2012. The Moroccans have a 20 MW hybrid solar/gas plant on line. We further expanded on the topic of solar energy with **Nabil El Aid El Othmani**, who blogs about renewable energy. <http://genesismorocco.blogspot.com> Nabil has 1,500-2,000 visitors to his blog per month. He posts around 400 articles per month in English. Most visitors are from the United States, followed by India. We discussed using solar energy for desalinization of small quantities of water, and Desertec, the massive renewable energy grid envisioned for North Africa that will distribute energy to Europe <http://www.desertec.org/>. We ended the day with a roundtable discussion with academics on the environment and renewable energy.

Green Team! Heather did a fantastic job of getting a room full of embassy personnel to energize the Embassy Morocco's Green Team. Heather's new Deputy Chief of Mission, who is a Management Officer, was especially engaged at learning how best to support the Secretary's Green Diplomacy Initiative.

Presentations on Vehicle Fuels: I gave Power Point presentations to university students at American University of Beirut and the Ecole Superieure de Technologie de Sale (EST) in Rabat. When I travel out to post, I always welcome public outreach opportunities. I can only present in English: this worked at UAB. Although an English professor interpreted my speech at EST, the students interacted with me in English with great follow-up questions!

Regional GLOBE Activities:

The Global Learning and Observations to Benefit the Environment (GLOBE) is a hands-on school-based science and education program worldwide. GLOBE supports students, teachers, and scientists to collaborate on inquiry-based investigations of the environment in partnership with the State Department, NASA, NOAA, and NSF in study and research about the dynamics of Earth's environment. (photos courtesy of GLOBE)



Ocean for Life Field Study: Students Conduct Research near Santa Barbara Channel Islands during 2011 Twenty-eight high school students from seven countries in the Near East-North Africa GLOBE region participated in the second Ocean for Life field study from July 14 – 26, 2011, aimed at increasing cultural understanding through ocean science. MENA countries represented included Bahrain, Egypt, Kuwait, Lebanon, and Qatar. Other students came from Pakistan, American Samoa, and Canada. Participants also came from of Alabama, Arizona, California, Florida, Hawaii, Illinois, Michigan, Rhode Island, Tennessee, and Washington. The Ocean for Life field study took place in National Oceanic and Atmospheric Administration (NOAA)'s Channel Islands National Marine Sanctuary just

off the California coast. <http://globe.gov/stars/articles/students-conduct-research-near-santa-barbara-channel-islands-during-2011-ocean-for-life-field-study>.

GLOBE regional training: GLOBE conducted a training workshop in Muscat, Oman from October 8 - 12, with GLOBE trainers and teachers from Lebanon, Oman, Bahrain, U.A.E., Saudi Arabia, and the United States. The training included GLOBE protocols (land cover, hydrology, soil, and atmosphere); finalizing the nenaglobe.com site map; and the launching of the Student Climate Research Campaign.

Other News:

Disclaimer: The following news articles do not represent the point of view of the ESTH Hub or any USG representative and are merely a collection of articles gathered from local and online media.

GLOBAL - UN Secretary-General Calls for 'Green Energy Revolution': On October 10, during the Conference on "Energy for All: Financing Access for the Poor", in Oslo, UN Secretary-General Ban Ki-moon called for a 'Green Energy Revolution' and urged support for the Global Sustainable Energy Action Plan. With the global population topping seven billion people by the end of October, one person in five lacking access to modern energy, and three billion people relying on charcoal or wood for cooking and heating; a radical departure from current practices and existing realities is needed. Ban Ki-moon called for bold solutions, including: economically viable projects and programs; human and institutional capacity development; and appropriately funded and managed policies. Following are the remarks from his speech: <http://www.iewy.com/34944-calling-for-%E2%80%98green-energy-revolution%E2%80%99-secretary-general-at-oslo-energy-conference-urges-support-for-global-sustainable-energy-action-plan.html>.

MENA – Arab Women Statement on Rio+20: The UN Conference on Sustainable Development (UNCSD or Rio+20) Arab Regional Preparatory Meeting convened from October 16-17 at the League of Arab States headquarters in Cairo, Egypt. Approximately 100 participants from governments and civil society attended the meeting. Dr. Hala Yousry, Head of Egypt's Rural Sociology Department at the Desert Research Center, made a presentation about support for a green economy and sustainable development. To read her statement, follow this link: <http://www.uncsd2012.org/rio20/?page=view&nr=499&type=230&menu=39>. [Source: United Nations' Website]

ISRAEL – Seven Israeli Companies Win Global Cleantech Awards for 2011: For the second consecutive year, seven Israeli companies are on the 100 list of Cleantech Companies in the Cleantech Group third year running list. According to a 2011 survey, Israeli clean tech innovators comprise five percent of the world's best clean tech companies! To see the full list: <http://www.greenprophet.com/wp-content/uploads/2011/10/cleantech-1001.pdf>. [Source: The Green Prophet Blog]

LEBANON – EU Grant of €755,000 for the Rehabilitation of the Nahr El Bared Canal: The Nahr el Bared canal in Northern Lebanon, the main source of irrigation for farmers in several municipalities, benefiting nearly 35,000 people, has recently been rehabilitated through an EU grant amounting to €755,000. In addition to the important rehabilitation work, awareness raising activities related to water management were held with communities in order to ensure the maintenance of the canal and respect for the environment when implementing agricultural practices. For more info:

<http://mideastenvironment.apps01.yorku.ca/?p=3509>. [Source: Environment and Climate in the Middle East Blog]



The vehicle is specially equipped so that users with disabilities and visual impairments may also avail of its services – Photo courtesy of the Daily Star

LEBANON – Eco-Education Caravan Ready to Hit the Roads!

A new environmental, mobile van will travel around Lebanon to teach young people and small companies about the importance of developing green practices. E-EcoEducation (EEE) project will be implemented by Fondation Sanadar, a Lebanese nongovernmental organization. The program seeks to promote awareness, disseminate skills and knowledge to develop, create and implement a 'green' culture and to transform behaviors into environmentally responsible attitudes. For more:

<http://www.dailystar.com.lb/News/Local-News/2011/Oct-25/152136-eco-education-caravan-ready-to-hit-roads-of-mount-lebanon.ashx#ixzz1bqCIER74>.

[Source: The Daily Star]

EGYPT – Water Challenges Forcing a Rethink on Usage: Leaking water pipes, evaporation and a rapidly growing population may be significant concerns for those trying to manage and plan water supplies in Egypt, but compounding such problems – and forcing Egyptians to rethink how they use water – is the threat posed by downstream countries which also want to take more water from the Nile!

<http://www.irinnews.org/report.aspx?reportid=93997>. [Source: IRIN]

U.A.E. - Blossom: Dubai's First Carbon Neutral School!



Photo courtesy of GoGreen.ae

Blossom children's nursery in Dubai has received a certificate from MYCLIMATE, the international non-profit foundation based in Switzerland, for offsetting their carbon emissions to become the first carbon neutral educational establishment in the UAE. Measures taken by the school to minimize their carbon emissions included recycling, producing their own paper, using a filtration system to dispense water, and stop purchasing water in plastic bottles. Other simple but highly effective measures include lining the windows with colored film to reduce classroom temperatures, refilling and recycling toner cartridges for printers, using potato peelings to make compost for the school gardens, and utilizing special chemicals that require minimal water to clean the floors and

furniture. Children are also educated about the excessive use of toilet paper. To read more: http://www.go-green.ae/greenstory_view.php?storyid=1845.

MOROCCO – Call for Papers for the 2nd International Conference on Thermal

Sciences: The Moroccan Association of Thermal Sciences (MATS) is pleased to announce AMT'2012, its 2nd International Conference on Thermal Sciences, to take place in Casablanca, Morocco on 18-19 April 2012. The Conference main theme is Energy Efficiency in Industry. The event is dedicated to the following topics: heat and mass transfer, energy efficiency and environment, renewable energies, fluid mechanics, and energetic and measurement techniques. The languages of the conference are French and English. Papers will be selected for presentation and publication on the basis of a one-page initial abstract (which will be quickly assessed to ensure relevance) followed by a full peer-review of the papers themselves. Details of the submission process may be found on the conference website. There will be oral and poster presentations of contributed papers and invited keynote lectures, which will be published in a proceeding book. Selected papers will be considered for publication in International Scientific Journals. <http://www.congres-amt.com/>. [Source: AMT's website]

ALGERIA - Country to Invest Twenty Billion USD in Clean Energy: Algeria has announced an investment of more than \$20 billion in renewable electricity over the next 20 years. The move would bring Morocco, Egypt, and Algeria to the forefront of climate actions worldwide. Egypt now leads all the MENA nations in attractiveness for renewable energy investment through the EU's Clean Development Mechanism. Morocco has linked its grid to Europe and is a key Desertec investment point since announcing its plans to provide 42% of its own electricity from solar, which is by far the most ambitious plan in the world. Algeria's electric utility has a very fast-growing customer base of 6.2 million. It grew 3.9% from 2007 to 2008. Currently, most of Algeria's electricity is produced through natural gas, although earlier this year the country launched a hybrid plant that boosts gas-fired production with solar panels. <http://www.greenprophet.com/2011/10/algeria-to-invest-20-billion-in-clean-energy/>. [Source: The Green prophet Blog]

TUNIS - Researchers are Hopeful The New Government Formed After Elections Will Streamline Their Work: Tunisia has launched a program to promote science research and innovation, which will run from 2011 to 2014 with a €12 million fund provided from the European Union (EU). The program, announced on October 12, will focus on research areas that are of strategic importance to Tunisia, such as renewable energy, healthcare, the environment, and water. http://www.nature.com/nmiddleeast/2011/111025/full/nmiddleeast.2011.144.html?WT.mc_id=FBK_NatureMEast. [Source: Nature Middle East]

Green Tip of the month

The "Harvard Green Tip of the Month" is a poster series and email campaign. Each month, the Office for Sustainability (OFS) provides a new green tip that you can implement in your building, classroom, dorm, office, or lab—and even at home! Click on a poster to access the email and download the flyer in PDF format. Take a look, and pass them on! <http://green.harvard.edu/green-tip>