ASU GLOBAL INSTITUTE of SUSTAINABILITY
ARIZONA STATE UNIVERSITY

May 29, 2009

Dear Board Member,

Starting with this letter, each month I will send the Board of Trustees a brief list of sustainability news at ASU and introduce you to an ASU faculty or staff member who is working on global sustainability challenges. This month we feature Professor Devens Gust, who uses artificial photosynthesis to create clean renewable energy.

Highlights on ASU's sustainability activities

- The first graduating class of the School of Sustainability was among the crowd at ASU's spring commencement featuring President Obama. Our 13 students garnered national attention, including coverage in *The New York Times* by environmental reporter Andrew Revkin http://dotearth.blogs.nytimes.com and Grist.org http://www.grist.org/article/2009-05-14-obama-addresses

- At a White House speech, President Obama announced that ASU scientists were awarded a $14 million five-year grant from the Department of Energy to establish an Energy Frontier Research Center (EFRC) for Bio-Inspired Solar Fuel Production.

- ASU's West campus is installing 3.3 MW of solar photovoltaic capacity as part of the second phase of the university-wide solarization initiative. ASU will have up to 10 MW total of solar power upon completion of phase two thus maintaining ASU's leadership among universities for solar power capacity.

- This fall, ASU will join Princeton, Reed College, and others to pilot use of Amazon's Kindle wireless reading device in place of textbooks. Students using Kindle instead of traditional print textbooks will cut costs and substantially reduce paper use.

- ASU is addressing a significant global health challenge through the work of engineering professor Harindra "Joe" Fernando. Using social-networking media such as Facebook, MySpace, and Twitter, Professor Fernando is developing an asthma alert system that warns people when air will reach dangerous levels. When implemented, the new system is expected to reduce hospital visits and save lives.

Please let me know what you think about this new communications format. I want to keep you informed of ASU's work in sustainability in an efficient yet interesting way. Following is the interview with Devens Gust. You can reach me at rob.melnick@asu.edu or 480-965-5233.

Best regards,

Rob

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Executive Dean

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Q&A With Dr. Devens Gust:

Pioneer in Renewable Energy Research

Dr. Devens Gust is Foundation Professor of Chemistry and Biochemistry. His research seeks to mimic the key processes of photosynthesis to create usable fuel from the sun.

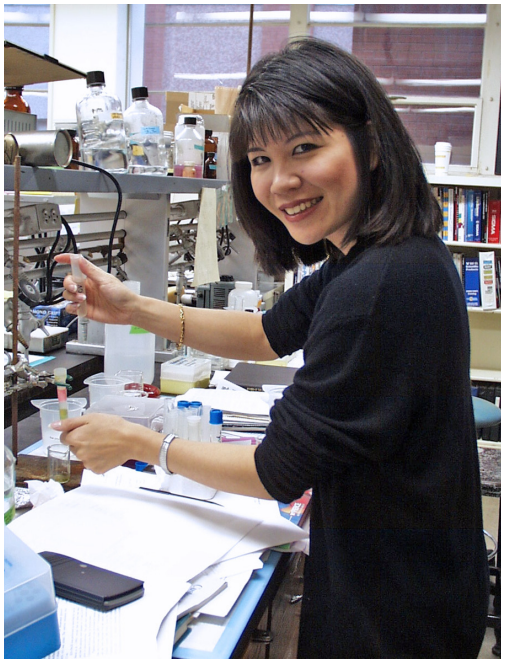
Dr. Devens Gust

At what point did "sustainability" become part of your research vocabulary?

The 1970s oil embargo made it obvious that we had to develop a more sustainable energy policy and I thought I could contribute through my expertise in organic and photochemistry. I have been working in the area ever since.

What is your most important current sustainability-related research project?

I am director of the new ASU Energy Frontier Research Center for Bio-inspired Solar Fuel Production, funded by the Department of Energy. Our goal is to use the basic science underlying natural photosynthesis to find new approaches for producing renewable fuel such as hydrogen, which is a good medium for storing solar energy. The $14 million project involves 11 faculty members from different disciplines and will also employ and train undergraduates, graduate students, and postdoctoral associates in renewable energy science.



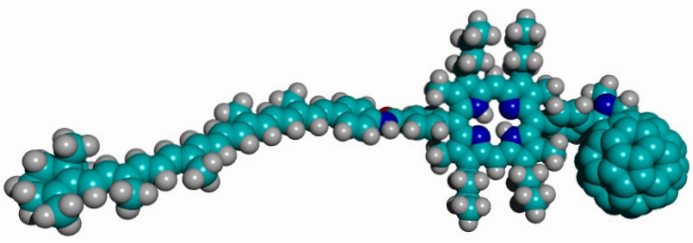
student working in Gust's lab

How do you think your research will affect decisions in the "real world"?

We depend ultimately on the sun for almost all of the energy we use today — even fossil fuels are the product of ancient photosynthetic energy conversion. Producing useful energy from sunlight is technologically feasible, but current approaches are still too expensive to compete. Our research is devoted to developing the science behind new technologies that will be cheap and efficient. If we are successful, new energy industries and government policies will follow.

What is the world sustainability challenge that concerns you the most?

Humanity badly needs a source of energy that is abundant, renewable, inexpensive, clean, and local. The sun is currently the only source that can produce such energy in sufficient quantities, but to make it usable requires not only new technologies, but new fundamental scientific discoveries. We must meet this challenge very soon because our environment, geopolitical situation, and quality of life depend on it.



computer model of an artificial photosynthetic reaction center molecule