

UC SANTA BARBARA

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## **UCSB Announces First-Ever Sustainability Champions**

Food and energy -- two of the world's most important resources -- are what fuel the research and fervor of UC Santa Barbara's first-ever Sustainability Champions.

For David Cleveland, a professor of environmental studies, and Eric Matthys, professor of mechanical engineering, the chance to be UCSB faculty leaders on campus sustainability issues is exciting and brimming with opportunity. Cleveland has been named the champion for 2009-10, while Matthys will assume the role for 2010-11.

"These two worthy individuals are true leaders on the critical issues of our time," said Lorelei Moosbrugger, assistant professor of political science and chair of the Academic Senate's Sustainability Work Group. "The Senate Sustainability Work Group recognizes that leadership with this award. We hope it will allow Cleveland and Matthys to reach a broader audience on campus and in the community, and underscore the significance of sustainability research at UCSB."

The campus's Sustainability Champions are awarded a \$25,000 grant to conduct research and to employ graduate or undergraduate assistants. In addition, champions are asked to teach a freshman seminar in their area of expertise and give a public lecture, Moosbrugger said.

Cleveland's interest in sustainability began when he lived in an African village for 18 months in the early 1970's, working on a doctoral dissertation about how people adjusted their fertility rates based on environmental and agricultural changes. "A family would live on several hectares of land and almost all of their food would come from these hectares," Cleveland said. "It really brings sustainability into very sharp focus when there's that immediate interdependency between human welfare and environment, and between human welfare and the relationship of people to other people in the village -- the social aspect of sustainability."

More than 30 years later, Cleveland is still working on many of the same issues -- environment, food, agriculture, and human population. "How do these interact in ways that either result in what we could call a catastrophe, or in what we would call a success?" he said. Cleveland and his wife, Daniela Soleri, a research scientist in UCSB's Department of Geography, have worked with small-scale farmers around the world. "We've worked extensively with Zuni and Hopi farmers in the southwest U.S., and small-scale farmers in Oaxaca in southern Mexico," Cleveland said. "And we've done research in Syria, Mali, and other countries." Working with Chinese colleagues, they have recently started research with rice farmers in China's Yunnan Province.

Matthys's passion for sustainability began with his early interest in high-efficiency diesel engines while an undergraduate student in Europe. Subsequently, he undertook innovative efforts as a graduate student at CalTech to retool technologies to make industrial energy systems more efficient. He investigated the concept that the turbulence level in fluids can be drastically reduced by introducing minute amounts of special polymeric or surfactant additives into the flow. The result is a large decrease in the amount of energy needed to move fluids through systems such as pipelines or hydronic heating and cooling systems. "You can put a very small amount, as little as 5 parts per million, so little that you can otherwise barely detect it, and you can cut down the friction in the pipes by a factor of 10," Matthys said. "It's remarkable."

That research expanded when he joined UCSB in 1985. Working with the campus Facilities Management staff, he and his research team later tested the proposed technology in the cooling systems of some of the newer campus buildings. "We were able to show that the technology is indeed working as we thought it would, saving large amounts of energy," he said. Recently, Matthys has been looking at ways to develop technologies to reduce the power it takes to propel ships by using innovative biotechnology approaches for hull coatings.

Both Cleveland and Matthys see campus and community outreach as a major part of their roles as Sustainability Champions. During 2009-10, Cleveland said he will be using his funds in part to work with students in analyzing the Santa Barbara County agricultural and food system and encouraging discussion of alternative scenarios for a more sustainable future. "We need to talk about this," Cleveland said. "You can't start measuring sustainability until you know how you've defined it."

In addition, Cleveland said he will be working with Bonnie Crouse, assistant director of Residential Dining Services, with undergraduates, and as adviser for graduate student Megan Carney's The Green Initiative Fund (TGIF) Real Food Challenge grant. That project will seek to encourage community discussion of the UCSB food system, including where campus food comes from and how it is produced and transported.

Matthys said he'd like students to help him in this mission. "I'd like to involve students in spreading the knowledge and message," he said. "I'd like to have a similar position held by a student, that would be doing things from a student's perspective in helping spread the word about saving energy among other students. I see this great level of enthusiasm and care among students, where they realize that they have to do something.

"On the outreach side, let's invite the community over," Matthys said. "Let's talk to the people in the county, in the city, and let's work with them."

According to Moosbrugger, the Sustainability Champion initiative was created by the Academic Senate's Work Group on Sustainability to focus the campus community on faculty leadership in sustainability-related matters.

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