



## Climate Solutions Curriculum Committee

### Compilation of Grant Proposals in Support of the Committee's Efforts

#### Proposal to the National Aeronautics and Space Administration

NASA Program: Global Climate Change Education

*“Creation and Dissemination of an Interdisciplinary Undergraduate General Education Course on Climate Change”*

**Summary:** We are developing a robust curricular package for a general education course on climate change that universities across the country can readily adopt and adapt. The team is led by David Blockstein at National Council for Science and the Environment (NCSE). The basis for this effort will be the course that has been taught at the U of California Davis by Arnold Bloom. We will focus on course components based on NASA resources that encourage students to study the issues independently and propose solutions based on objective information. In Phase I representatives from six Council of Environmental Deans and Directors (CEDD) institutions (Florida A & M U, Unity College, U of California Davis, U of Nevada Las Vegas, U of Richmond, U of Texas at El Paso ) will create curricular components that span a range on climate change. This material and the course from UC Davis will form the basis of an offering of a course at each Phase I school in the first year, 2009-10. In Phase II, 2010-11, fourteen CEDD institutions (Ball State U, George Washington U, Juniata C, Macalester C, North Carolina A & T, Towson U, U Alaska Anchorage, U California San Diego, U Colorado Boulder, U Cincinnati, U Florida, U Illinois Urbana-Champaign, U Nebraska Lincoln and U Toledo) will teach with the materials adapted for their interests and expertise. The lessons will allow the creation of flexible curriculum modules that a wide range of universities should find useful. The content will have the advantage of thorough testing in a variety of settings and carry the imprimatur of a nationally-recognized organization which has been a leader in the field of science education.

**Status:** Selected for full funding in May, 2009. Work will commence in summer, 2009.

#### Proposal to the W. M. Keck Foundation

Keck Program: Undergraduate Education

*“Interdisciplinary Approaches to Teaching Solutions to Climate Change”*

Our goal in this project is to prepare a core of faculty to provide and assess interdisciplinary education regarding climate change science and solutions and contribute to a national effort to create a learning community of climate educators. We will assist a total of 60 faculty working in pairs of natural and social scientists at institutions in three regions: Puget Sound, Texas-Mexico Border and the Great Lakes. Faculty will participate in workshops on leading pedagogical and assessment techniques and apply them in their instruction, sharing their experiences within and across regions. This is the first effort of this scale to apply problem-based learning and interdisciplinary assessment techniques to the teaching of climate change. The results will be highly leveraged by dissemination through NCSE's network of colleges and universities and our proposed web-enabled learning community of educators. The principal investigator is Jean MacGregor of Evergreen State College. The time span is two years commencing in 2010.

**Status:** Phase I application submitted in April, 2009; if it is approved, a Phase II proposal will be submitted in August.

## **Proposal to the National Science Foundation**

NSF Program: Climate Change Education

*“Creating a Learning Community for Solutions to Climate Change”*

NCSE and partner institutions affiliated with CEDD propose to create a learning community that will develop curricular content on solutions to climate change by drawing on the best available climate research and utilizing the most effective pedagogical methods. Our goal is to transform academic education about climate change from the current emphasis on the physical and biological science of climate and climate change to an interdisciplinary enterprise that includes mitigation and adaptation. We want to equip college students to not just diagnose problems, but give them the capacity to address and fix them. We propose to use a community-engagement and community-building process to produce a virtual tool chest of curricular resources, methods, and experiences on how to teach about climate solutions in general education courses, as well as to environmental and science majors. Our project would link scientific and educational experts through a cyber-infrastructure for content management and communication in order to create a virtual community of educators/learners. Additional partner institutions, researchers and educators are welcome. There is a separate document which provides more details on this plan.

**Status:** In preparation for submission in late June, 2009.

## **Proposal to the National Science Foundation**

NSF Program: Professional Science Masters Degree

*“Creation of a Masters Degree in Climate Science and Solutions”*

We plan to facilitate the creation of an inter-institutional degree that would be offered through several participating institutions and/or consortia. There would be a common curriculum for all participating students which would help assure employers of these individuals that graduates would have a fundamental grasp of specific content areas important to climate change and its management. After the completion of coursework, the program would conclude with a summer internship/cooperative experience during which teams of the students, perhaps from different campuses, would work with program partners from state and federal agencies, the private sector, and NGOs, on specific projects. In place of a thesis, students might prepare a report for the sponsoring agency. Alan McIntosh of the University of Vermont is leading this group.

**Parameters:** Not determined at this time. A July 7<sup>th</sup> workshop is scheduled.

**Status:** Planning has commenced. NSF has not yet released the Request for Proposals. The NSF program has been funded with \$15 million in the American Recovery and Reinvestment Act.

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For further info:

Andy Jorgensen, Senior Fellow, NCSE

[ajorgensen@ncseonline.org](mailto:ajorgensen@ncseonline.org)

202-530-5810 x102, fax 202-628-4311