CLIMATE CHANGE CIRIT Newsletter
CLUSTERS OF INTERDISCIPLINARY RESEARCH ON INTERNATIONAL THEMES
THE OHIO STATE UNIVERSITY WINTER 2006

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Climate Change, CIRIT Cluster I is a multi-disciplinary forum for scholarly interactions that has been active since 2001. This cluster is headed by Prof. Rattan Lal, Director of the Carbon Management and Sequestration Center (http://cmasc.osu.edu) at the School of Natural Resources. To date this cluster has brought together faculty from several OSU colleges and has linked with industrial partners and institutions overseas which resulted in several interdisciplinary, international funded network building workshops, establishing the Latin American Soil Carbon Network, LASCANet (see page 2). It has sponsored monthly seminars, conferences and workshops and has led to the development of two undergraduate courses. There have been several publications including the proceedings from the 2003 international workshop (see page 6).

To join this network visit www.osu.edu/cirit or write to:

Prof. Rattan Lal, lal.1@osu.edu

Patricia Drillien, Program Coordinator
drillien.1@osu.edu

SENR

Office of INTERNATIONAL AFFAIRS The Ohio State University

CARBON SEQUESTRATION IN CENTRAL ASIA CONFERENCE

For a full list of conference participants see http://oia.osu.edu/cirit/pdfs/clusterI/nov05/ProgramFin.pdf

The Annual International Climate Change Workshop was held at OSU on November 2 - 5, 2005. The workshop was devoted to the role of agriculture in solving environmental degradation problems in Central Asia. To cover all important new approaches, the workshop brought together the science community of universities, government institutions and multi-national research centers from the countries of the region. Participants included experts in soil science, water, economic aspects of agriculture, natural resource management, social scientists and public policy experts. Also attending were representatives of agencies such as the International Center for Agricultural Research in Dry Areas (ICARDA), the International Maize & Wheat Improvement Center and the U.S. Department of Agriculture. The three-day workshop included lectures, discussions, and a field trip to OSU's Agricultural Experiment Station in Wooster and the East Appalachian Watershed Experiment Station in Coshocton to observe projects designed to alleviate problems similar to those discussed at the workshop.

The sessions opened with presentations on: "Principal biomass of Central Asia (climate, soil and vegetation) by E. De-Pauw; "Ecosystems and carbon sequestration challenges" by M. Suleimenov and R. Thomas; "Economic indicators and climate change" by A. Lines, P. Elmuratov and R. Islam; and "Forestry in Central Asia" by M. Turdieva. Other sessions focused on Soil Management and Carbon Dynamics; Forest Management and Carbon Dynamics; Water Management; Rangeland Management Measurements and Economics; and Conservation Tillage and Economic Evaluation. The University Distinguished Lecture was delivered by Dr. Raj Paroda Head CGIAR Program for CAC, and regional Coordinator ICARDA, in Uzbekistan, who discussed the challenges of agriculture in Central Asia (see picture below).

Several major natural resource management issues in Central Asia were addressed. Among them are:

✦ Loss of agricultural lands (soil degradation) – Large areas of arable land are being lost to production as a consequence of use of inappropriate cropping systems and inappropriate irrigation schemes.

Some of this land is being transformed into semi desert conditions, with a corresponding loss in soil biological diversity, carbon content, and other soil nutrients.

✦ Loss of Aral Sea. Two major rivers feed the Aral Sea. Overuse of the rivers for irrigation is resulting in the Sea's disappearance, reducing available water for humans and animals, and causing dramatic changes in the surrounding ecological region.

✦ Loss of water quality. Inappropriate irrigation practices have led to considerable salinization and water logging of soils. The quality of water available for human and animal consumption has correspondingly worsened.

✦ Reduced Food Security. The degradation of soil and water resources poses a threat to production of food for inhabitants and to food security in the region. This problem can be combated in part by the introduction of new farming systems into the region, and alternative crop rotation patterns that are less damaging to the natural resource base.

The objectives of the workshop were:

1) to identify land use and soil/vegetation management strategies that restore degraded soils and ecosystems, enhance soil quality, improve water use efficiency, and sequester carbon in soil and biomass; 2) to develop strategies to facilitate dialogue between scientists and policy makers so that soil and ecosystem recovery is an integral component of any governmental program to mitigate climate change; 3) to encourage dialogue on scientific and technological exchange; 4) create multi-disciplinary teams to facilitate carbon trading in national and international markets; and 5) to identify social, economic and bio-physical factors and processes that restore degraded soils and ecosystems.

See the full program at http://oia.osu.edu/cirit/pdfs/clusterI/nov05/ProgramFin.pdf

The workshop was jointly organized by OSU, ICARDA, the International Center for Maize and Wheat Research, and the Agricultural Research Service of the U.S. Department of Agriculture. OSU sponsors included the Mershon Center, Office of International Affairs CIRIT, the Center for Slavic and East European Studies, Middle East Studies Center, and the host, the office of International Programs in Agriculture.

This Annual Climate Change Workshop will serve to establish another Soil Carbon Network similar to LASCANet established in 2004 following the workshop in Brazil (see below). The Central Asia Soil Carbon Network will bring together scientists, research institutions, government agencies and policy makers to improve soil quality and reduce the rate of atmospheric concentration of CO^2

Dr. Khusanov(R), Former Minister of Agriculture of Uzbekistan, presenting traditional dress to (L-R) Professor Rattan Lal, Professor Richard Herrmann, and Bobby Moser, Dean of SENR.

LASCANet Latin American Soil Carbon Network

CIRIT Climate Change, led by Rattan Lal has established an International Soil Carbon Networks in Latin America following the international workshop in Brazil. The LASCANet is developing a research, extension, outreach and training program, on soil carbon sequestration to improve soil quality, increase agronomic productivity, decrease non-point source pollution, and reduce the rate of atmospheric concentration of CO^2 LASCANet participants are organized into twelve Soil Ecoregions with a contact in each. Sponsors: U.S. Department of State, Inter-American Institute for Global Change Research, U.S. Agency for International Development, U.S. Department of Agriculture, U.S. Department of Energy, NETL, The Nature Conservancy, Universidade de São Paulo / Centro de Energia Nuclear na Agricultura, and Institut de Recherche pour le Développement.

http://oia.osu.edu/cirit/clusterone/LASCANET/index.html

RECENT AWARDS

Lonnie Thompson Wins Tyler Prize

Lonnie Thompson, Professor of geological sciences at The Ohio State University, is one of two scientists to win the 2005 Tyler Prize, an award regarded by some in the field as equivalent to a Nobel Prize. Tyler Prize officials noted that Thompson was a leading national spokesman on the subject of global climate change, and is considered one of the most respected voices in the world on related policy issues. For the past three decades, Thompson, along with his wife and research partner Ellen Mosley-Thompson, have argued that the first real evidence of an increase in global temperatures will come with the melting of tropical ice caps and glaciers. Thompson received his award, a gold medallion and $100,000 at ceremonies in April at the University of Southern California, stewards of the award program.

SEE more at:

http://www.usc.edu/admin/provost/tylerprize/

Rattan Lal Wins Norman Borlaug Award

Rattan Lal (L) and Norman Borlaug (R)

Rattan Lal, Professor of natural resources at The Ohio State University and internationally recognized soil scientist was one of two recipients of the 2005 Norman Borlaug Award presented on March 16, during the Centenary celebrations of the Indian Agricultural Research Institute (IARI) in New Delhi, India. Dr. Lal was praised for his foresighted and visionary research which has influenced soil practices on three continents. Dr. Lal received his M.S. (soils) degree from the IARI and his Ph.D. from The Ohio State University. In addition to his faculty and administrative duties, he lectures nationally and internationally. A prolific writer, Dr. Lal is the author of more than 1,000 scientific articles and 9 books.

SEE more at:

http://snr.osu.edu/news/more_details/details_Lal_Borlaug.html

FUTURE DEVELOPMENTS: NSF/IGRET

Integrative Graduate Education and Research Traineeship in CLIMATE CHANGE

CIRIT Climate Change was invited to submit a full NSF proposal to IGERT program (Integrative Graduate Education and Research Traineeship) on *Climate Change Science, Impact, Mitigation and Policy*. If awarded it will fund a new Ph D. program with full funding for graduate students over 5 years. The Principal Investigators are Rattan Lal, Richard K. Hermann, C. K. Shum, Lonnie G. Thompson, and Andrea D. Wolfe.

Summary of Program: Abrupt climate change and its economic, societal and environmental impacts is a key issue for the 21st century and the focus of a 10-year strategic plan recently released by the U.S. National Research Council. Climate history reveals that naturally forced ACC has occurred in the past with drastic climate consequences and severe impacts on all civilizations.

Now the potential of anthropogenically forced abrupt CC and its likely socio-economic impacts warrant thorough and timely investigation to facilitate the development of local, regional and global mitigation and adaptation strategies. Those who will ultimately address such future challenges must be more than disciplinary specialists (climate scientists, engineers, etc.), but will require broad cross-discipline training that spans the physical, biological, social and behavioral sciences as well as the engineering sciences. Such cross-disciplinary training also requires domestic, national and international cooperation.

The new program is bridging the Natural Science/Social Science divide and creating an interdisciplinary training program with a focus on climate change. The program objectives include developing a cadre of PhD students who have a broad understanding of the scientific basis of abrupt CC as well as its environmental, economic and societal impacts and the implications for policies and international cooperation, so that they are well suited for leadership roles in the community, academia, industry or government.

OSU will build the IGERT-CC by exploiting existing academic strength: 1)outstanding existing disciplinary and interdisciplinary academic and research programs in geosciences, environmental sciences, biology, and social sciences and policy, 2) an Interdisciplinary specialization in CC Graduate Program that is currently being planned 3) a Cluster of Interdisciplinary Research on International Themes: Climate Change (CIRIT CC) which serves as a forum for multidisciplinary research and educational activities in CC and international policy, and 4) OSU's Mershon Center for International Security Studies which advances interdisciplinary research of national security and the associated social and policy studies programs.

DISTINGUISHED SPEAKER

Dr. Richard J. Sandor

Dr. Richard L. Sandor delivered a University Distinguished Lecture on "Creating a Market for Greenhouse Gas Emissions" to a standing-room-only audience on March 3, 2005.

Dr. Sandor is Chairman and CEO of the Chicago Climate Exchange, Inc., (CCX) a self-regulatory exchange that administers the world's first multi-national and multi-sector marketplace for reducing and trading greenhouse gas emissions. In August 2002, Sandor was chosen by Time Magazine as one of its "Heroes for the Planet" for his work as the founder of the Chicago Climate Exchange. In November 2004, he was the recipient of an honorary degree of Doctor of Science, *honoris causa*, by the Swiss Federal Institute of Technology of Zurich, for his pioneer work in the design and implementation of innovative and flexible market-based mechanisms to address environmental concerns. Noting the diversity of his audience (faculty, staff, students, business leaders and farmers), Sandor tailored his remarks to reflect both the academic and pragmatic aspects of a program that reduces greenhouse gas emissions through carbon trading.

SEE more at http://www.chicagoclimatex.com/

OSU President Karen Holbrook presenting Sandor with a Distinguished Lecture Award.

PAST SEMINARS

November 17, 2005
Climate Change and Drinking Water: Technology for Increasing the Quantity and Quality of Water We Drink, Harold Walker, *Associate Professor, Department of Civil and Environmental Engineering*

October 18, 2005
Advanced Carbon Measurement and Land Management for Terrestrial Sequestration, Michael H. Ebinger, *Los Alamos National Laboratory*

October 6, 2005
Restoring and Creating Wetlands in Coastal Louisiana (Post-Katrina), The Mississippi River Basin, and Mesopotamia - What Needs to be Done, William Mitsch, *Professor, Natural Resources and Environmental Science*

September 26, 2005
Wetland Mitigation in Ohio: Are We Loosing Diversity and Does it Matter, Virginie Bouchard, *Assistant Professor, School of Natural Resources*

August 8, 2005
Student Opportunities with the Earth Environmental Sciences Division at Los Alamos National Laboratory, Christina Behr-Andres, *Los Alamos National Laboratory*

August 8, 2005
A Partial Description of Fossil Fuel Carbon Dioxide Emission in the Context of Global Change Studies, Robert J. Andres, *Associate Professor Space Studies, University of North Dakota*

June 27, 2005
Punjab Agriculture: Past Accomplishments, Future Challenges, Darshan Singh, *Punjab Agricultural University*

June 1, 2005
What Chance for the Rural Poor in Africa?, Dennis Garrity, *Director General, World Agroforestry Centre*

May 9, 2005
Botanical Research in a Biodiversity Hotspot: The Cape Floral Kingdom , Andrea Wolfe, *Associate Professor, Molecular Systematics and Molecular Evolution*

May 6, 2005
Carbon Sequestration in U.S. Soils: A Framework for Integrated Evaluation, Mac Post, *Oak Ridge National Laboratory*

April 11, 2005
Sequestration Rental Policies and the Price of Path of Carbon, Andy Keeler, *Associate Professor, School of Public Policy and Management*

March 3, 2005
Creating a Market Greenhouse Gas Emission Trading, Richard Sandor, *President, Chicago Climate Exchange*

February 14, 2005
The Carbon Sequestration Technology Area at the DOE NETL, John Litynski, *Project Manager, National Energy Technology Laboratory*

FEATURED SEMINARS

Andy Keeler
School of Public Policy and Management
Sequestration Rental Policies and the Price Path of Carbon

Professor Keeler teaches and does research in the field of environmental and natural resources economics and policy. He has served as the Senior Staff Economist for Environment at the President's Council of Economic Advisers (2000 – 2001), as a senior economist at the Environmental Protection Agency's Innovative Strategies and Economics Group (1999-2000) and as an Economist for the Republic of Tanzania's Marketing Development Bureau (1982-1985). Professor Keeler received a Ph.D. in Agricultural and Resource Economics, University of California, Berkeley. He has published in a variety of journals including Environmental and Resource Economics, The Journal of Environmental Economics and Management, The Journal of Public Economics, the Journal of Regulatory Economics, and in Contemporary Economic Policy in which he recently published "Financing Beach Improvements: Comparing Two Approaches on the Georgia Coast," *Coastal Management Journal* 32(4), 2004, pp. 433-447. Jointly with Warren Kriesel and Craig Landry, and "Contract-Based Trading Programs in Environmental Regulation." *Contemporary Economic Policy* 22, 2004, pp. 526-533. Joint with Warren Kriesel and Craig Landry.

SEE more at:
http://ppm.ohio-state.edu/faculty/f_keeler.htm#01

Virginie Bouchard
School of Natural Resources
Wetland Mitigation in Ohio: Are We Losing Diversity and Does It Matter?

Professor Bouchard works at the interface between plant ecology, soil ecology and biogeochemistry, with a general focus on ecosystem driven processes in wetland and stream ecosystems and its application for the restoration and design of these ecosystems. Her current research projects are *Outwelling of organic matter between Great Lakes coastal wetlands and the Great Lakes,* investigates the production and fluxes of organic matter in Great Lakes coastal wetlands, and the interaction between open-water and wetland food webs. Another project *Linking wetland soil maturity, carbon sequestration, and species composition with carbon fluxes,* looks at the production and fluxes of CO2 and CH4 in a newly created wetland constructed at Waterman Farm on The Ohio State University campus. Other related research (conducted in collaboration with Dr. Fennessy, Kenyon College) investigates the carbon cycle in created and natural wetlands located throughout Ohio. Her recent publications include: "Dynamic of Salt Marshes Vegetation: a Long-term Study." *Comptes Rendus du Conservatoire du Littoral. "*European Salt Marshes Diversity and Functioning: the Case Study of the Mont Saint-Michel Bay, France." *Wetlands Ecology and Management* (with Le-euvre, J.C., Feunteun E., Grare S., Laffaille P., Radureau, A).

SEE more at:
http://snr.osu.edu/fac_staff/cv/bouchard.html

FIELD REPORT FROM JUAN JIMENEZ-JAEN

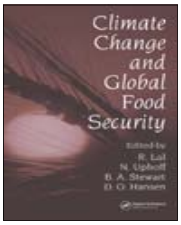
THE ASSESSMENT OF SOIL CARBON STOCKS UNDER DIFFERENT LAND USE SYSTEMS AND SOILS TYPES IN TWO DIFFERENT ECOREGIONS OF COSTA RICA

The amount of carbon (C) stored in the soils of Costa Rica is being assessed as part of a collaborative project between OSU School of Environment and Natural Resources and EARTH (Escuela de Agricultura de la Región del Trópico Húmedo) University in the Atlantic region of Costa Rica. The goal is to quantify the amount of C in the soil of different plantations and land use systems and compare it with the natural ecosystems of the region, the tropical humid forest in the Atlantic region and the tropical dry forest in the Pacific region. The rationale for this study is that C in the soil is central to climate change, since any intervention in the ecosystem may release considerable high quantities of C into the atmosphere. Land practices that maintain, preserve or reduce losses of C from the system must be encouraged.

One important component of this project in a second phase is the role of farmers in selecting a range of land use management options that are socially acceptable, economically viable and environmental friendly. The role of farmers and land users in this process together with the socio-economic aspects on the rates of C sequestration needs to be addressed. Both biophysical and socioeconomic factors need to be considered and related to development of a system for trading C credits nationally and internationally. Farmers can sell C credits with appropriate land management options (e.g., reforestation projects). Since C sequestration is a global environmental service, groups of farmers can work together to gain access to this initiative.

FACULTY ON THE MOVE

In Print: Climate Change and Global Food Security



"Climate Change and Global Food Security," this edited volume by OSU professor Rattan Lal, as well as Bobby Stewart, Norman Uphoff and David Hansen, is based on the papers from the 2003 CIRIT CC workshop http://oia.osu.edu/cirit/pdfs/ProgramCover2_web.psd.pdf. The book explores the most critical food issue facing the world and features a comprehensive history leading up to the crisis; a look at the current effect and further implications of global warming; fully explores carbon sequestration implementation; and includes contributions from more than 70 leading experts. Published by CRC Press, it is available for $139.95 and can be ordered at www.crcpress.com

Satellites Capture First-ever Gravity Map of Tides Under Antarctic Ice

Prof. C.K. Shum

Ohio State University scientists have used minute fluctuations in gravity to produce the best map yet of ocean tides that flow beneath two large Antarctic ice shelves. These findings were presented on Wednesday, Dec. 7, 2005, at the American Geophysical Union meeting in San Francisco.

Ohio State University scientists have used the twin satellites of the Gravity Recovery and Climate Experiment (GRACE), a joint project of NASA and the German Aerospace Center, in order to measure minute fluctuations in gravity and produce the best map yet of ocean tides that flow beneath two large Antarctic ice shelves. Large tides flow along the ocean floor beneath the Larsen and Filchner-Ronne Ice Shelves. Though scientists have long known of these tides, they have not yet been modeled accurately, said C.K. Shum, professor of geological sciences at The Ohio State University. Yet the tides play a major role in scientists' efforts to measure how much the ice sheets are melting or freezing, and how the melting ice will affect global sea levels. The researchers compared their data to two Antarctic tide models created by other groups. The two models – which were based on sparse data collected from tide gauges on the continent – agreed with the GRACE data to within 20 percent. "We have reason to believe that GRACE data is more accurate because the other models are based on substantially less data," Shum said. "So we think that people who incorporate our GRACE data into their own data are going to get better results. We also hope to help glaciologists measure changes in the ice flow much more accurately."

SEE more at http://www.csr.utexas.edu/grace/

Lonnie Thompson Featured in *Rolling Stone* Magazine

Professor Lonnie Thompson

While Professor Lonnie Thompson might be well known in glaciology circles and around OSU's campus, to the average reader of *Rolling Stone*, he probably isn't a household name. That could change with his recent inclusion into the magazine's list of 25 "warriors & heroes in our understanding of global climate issues." The list includes many notable names: Ralph Cicerone Al Gore, Tony Blair, and John McCain, and praises Dr. Thompson's research into the harmful effects of global warming trends. The article explained how Thompson, who grew up in West Virginia, studied geology so he could work in the coal industry. He was side-tracked during graduate school, when he examined the first ice core ever extracted by American scientists. "You could have knocked me over with a feather the day I discovered, firsthand, that glaciers contain a frozen history of the Earth," he recalled.

The full article can be viewed at www.rollingstone.com/politics/story/_/id/8742355

VISITING SCHOLARS

Juan J. Jiménez

Juan J. Jiménez is from Granada, Spain. He holds a Ph. D. in Soil Zoology and Ecology from the *Universidad Complutense* of Madrid, Spain, which he prepared with a scholarship from the European-funded project Macrofauna. He did his Ph.D. fieldwork in the Carimagua research station in the Eastern Plains of Colombia with the support of the International Center for Tropical Agriculture (CIAT). After he earned his Ph.D., he worked as a postdoctoral fellow at the Soil and Plant Nutrition Unit in CIAT for two years and as a consultant in the UN Food and Agriculture Organization (FAO) in Rome, Italy, for another two years until January 2005. He has traveled to most Latin American countries and some African countries during his appointment with FAO. He has published more than 20 papers in peer-reviewed journals, together with numerous contributions to international workshops and congresses, regarding the ecology of soil organisms, mainly earthworms, and their impact on different soil processes and ecosystem function at different spatial and temporal scales in the neotropical savannas. He is co-author of several book chapters and is co-editor of the CIAT book "Nature's Plow: Soil Macroinvertebrate Communities of the Neotropical Savannas of Colombia" for both the English and Spanish versions. This book synthesizes the pioneer studies that were conducted in this ecosystem and its relation with a more sustainable and productive agriculture.

He is currently working under the supervision of Dr. Lal in a project funded by the US Department of Energy on the evaluation of the potential of carbon sequestration under different land uses and soil types in Costa Rica, in collaboration with EARTH University. Dr. Jimenez was awarded a CGIAR Excellence in Science Award in the Outstanding Partnership Category on the Sustainable Land Management for the Acid Soil Savannas, together with other scientists at CIAT.

Sheila F. Christopher

Sheila F. Christopher is from Rochester, NY and received her Ph.D. from the State University of New York, College of Environmental Science and Forestry in Syracuse, NY. Her field-based project explored linkages between soil nutrient cycling and surface water solute concentrations in the Adirondack Park, NY. Her Ph.D. research was funded by a U.S. National Science Foundation grant as well as NYSERDA. After graduation, she was awarded a postdoctoral fellowship from the Japanese Society for the Promotion of Science to carry out proposed research that was first peer-reviewed and approved by the U.S. National Science Foundation. Her Japanese research was conducted on the Hokkaido Island and examined how variability in snow pack depth affects soil freezing and soil nitrogen cycling. Her Ph.D. and post-doctoral research results have been well-received at a number of international conferences. Through her work in Japan, she has promoted international discourse between U.S and Japanese scientists by helping plan a workshop (*Biogeochemistry and Hydrology in forested watersheds associated with LTER, March 2005*). She is currently working under the supervision of Dr. Rattan Lal conducting a field-based project to quantify carbon sequestration in farms across 7 Midwestern states. The project is part of the Midwest Regional Carbon Sequestration Partnership and funded by the US Department of Energy. Her goal is to broaden her background in soil biogeochemistry as she continues to explore the landscape controls on solutes at various scales and ecosystems.

U.S.-Japan Workshop participants at Uryu Experimental Forest, Hokkaido Japan., Photo courtesy of Hideaki Shibata

Anwar Ul Hassan Khan

Anwar Ul Hassan Khan is a visiting scholar at the School of Natural Resources working with Professor Rattan Lal. Dr. Khan received his B.Sc. and M.Sc. in Soil Science from the University of Agriculture, Faisalabad, Punjab, Pakistan. He earned his Ph.D. in Soil Science in 1986 from the University of California, Riverside, working with Dr. William A. Jury.

Dr. Khan has conducted research on various topics related to soil physics and applied soil physics. He has published papers on modeling of solute movement in soil, tillage, and brackish water influences on soil properties and crop growth. Dr. Khan has conducted research on the interactive effect of tillage, farm manure and straw mulch on the soil quality and growth of wheat and corn. He is currently a Professor of Soil Physics at the Institute of Soil and Environmental Sciences at the University of Agriculture, Faisalabad, Punjab, Pakistan. His major interest is in the evaluation of the use of recommended management practices in soil organic carbon sequestration. Dr. Khan's year-long visit to OSU ends in March 2006. Feel free to contact Dr. Khan about his work or to request a reprint of his papers, at khan.187@osu.edu.

School of Natural Resources
2021 Coffey Road
Columbus, OH 43210

www.osu.edu/cirit Phone: 614.292.9049 Fax: 614. 292.7432

To advance the goals of The Ohio State University the *Office of International Affairs* established and provides support for two *Clusters of Interdisciplinary Research on International Themes (CIRIT)*. The CIRIT program is an infrastructure to solve problems and coordinate efforts associated with the fragile nature of cross-disciplinary initiatives.

This program is coordinating two clusters:

Climate Change http://oia.osu.edu/cirit/clusterone/index.html and Identities in a Changing World http://oia.osu.edu/cirit/clustertwo/clust2view.html

The two clusters are not only international topics of major significance that lend themselves to interdisciplinary scholarship, but they also build on existing strengths of expertise within the University. As such, each cluster enables the university to enhance, strengthen and highlight on-going research, for which it has internationally recognized expertise, as well as create the means for the theme to be approached across disciplinary boundaries. The following objectives guide the program:

- Facilitating interdisciplinary communication, dialog and networking of faculty and students on the selected themes;
- Enhancing interdisciplinary and multidisciplinary research on the selected themes; and
- Promoting the products of these endeavors through publications and other visible means

Numerous centers, departments and units at the university sponsor programs relevant to the CIRIT Clusters thematic foci, including research, instruction, and outreach programs. Cumulatively, all these scholarly activities are contributing to CIRIT becoming a major research coordinating afford with the potential for further development and dissemination. In the interests of developing this potential, the CIRIT office documents and posts these activities on the web, providing a tool for mapping out OSU research taking place across the disciplines. It disseminates this information both on and off campus with a view toward enhancing the recognition of faculty accomplishments, and of The Ohio State University as the site of international research and scholarly activities.

Join this network at www.osu.edu/cirit or write to: Dr. Esther E. Gottlieb, gottlieb.26@osu.edu

325 Oxley Hall , 1712 Neil Avenue, Columbus, OH 43210, USA (614) 292-6392 FAX: (614) 292-4273