

To:

Jonathan

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Fax:

(202) 456-2215

Pages: #2, including this cover sheet.

From:

OFFICE OF THE PRESIDENT Jennifer Brogan
COLUMBIA UNIVERSITY

1-212-854-2825, ext. 2826 or 2827

Fax: 1-212-854-6466

Comments:

-Please find the copy
of a letter to Mr. Todd Stern.
The hard copy is
currently being sent Federal
Express.

Thank you!

Please Reply _____

No Reply Necessary _____

T R A N S M I S S I O N

fax

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

PRESIDENT'S ROOM

September 22, 1997

Dear Todd:

Thank you for taking the time from your busy schedule to meet with me, Alan Stone, and Ellen Smith on Wednesday. We hope the materials we left you on our Earth Institute are useful to you in your working the area of Global Climate Change and Global Warming. I understand that you will be meeting with our Vice Provost Michael Crow next Thursday. I trust this will be helpful to you. I know Mike is looking forward to meeting you.

To follow up on our meeting, we have worked successfully with members of Congress who might not initially appear to be those who would support climate change issues, but who have done so as a result of work done by research universities in their state and districts. Examples include Senator Judd Gregg (R-NH), Congressman Benjamin Gilman (R-NY), Congressman Sherry Boehlert (R-NY), Congressman Ken Calvert (R-CA), Congressman Brian Bilbray (R-CA). It might be useful to you to ask a research assistant to examine member votes on climate change issues. In doing so you may find members who support these issues who might not otherwise have surfaced.

I regret that I will not be able to attend the October 6, 1997 meeting at the White House.

Again, it was great to meet you -- and also Jen.

Sincerely,


George Kupp

Mr. Todd Stern
Assistant to the President and Staff Secretary
The White House
1600 Pennsylvania Avenue NW
Washington, D.C. 20500

THE COLUMBIA EARTH INSTITUTE

COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

THE COLUMBIA EARTH INSTITUTE

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CENTER FOR ENVIRONMENTAL RESEARCH AND CONSERVATION

COLUMBIA UNIVERSITY

1200 AMSTERDAM AVENUE, NEW YORK, NY 10027-5557

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CERC

CENTER

FOR

ENVIRONMENTAL

RESEARCH

AND

CONSERVATION

AT COLUMBIA UNIVERSITY

CENTER FOR ENVIRONMENTAL RESEARCH AND CONSERVATION

PREPARING THE NEXT GENERATION OF ENVIRONMENTAL LEADERS THROUGH EDUCATION, TRAINING AND RESEARCH

THE CENTER FOR ENVIRONMENTAL RESEARCH AND CONSERVATION (CERC), a consortium of five education and research institutions, was created in response to critical environmental concerns facing the Earth.

Within the next fifty years human influence will affect every place on the planet. That impact will almost certainly result in species extinctions, ecosystem degradation, and a loss of the benefits those species and ecosystems provide to people. CERC's goal is to create long-term solutions to combat the loss of biological diversity and natural resource depletion, while meeting the needs of a growing worldwide human population.

To do this, it is essential to train professionals to face complex global environmental issues. For over thirty years, in the United States and internationally, there has been a severe shortage of university-based programs to prepare students in the study of plants and animals, the ecosystems in which they live, and the applied sciences of conservation and environmental management.

Too often nature reserves, natural resource departments, and major policy-making branches of governments in countries around the world are staffed by individuals who lack adequate training. Worldwide, students have not been prepared in the basic disciplines of biology and environmental science, including systematics, ecology, population biology and biodiversity conservation. There simply are not enough well-trained professionals to meet the growing number of environmental challenges we face.

Those scientists who are trained in the disciplines of ecology and environmental biology have proven integral in the search for a solution to the biodiversity crisis. They have identified crucial new pharmaceuticals and other products to enhance human well-being. They have demonstrated the important services of water purification, oxygen production, and climate buffering that natural ecosystems provide. The work of these individuals has been crucially important for creating policy and laws to protect wildlife, the environment, and the human populations that depend on these systems.

What is required at this time is an interdisciplinary approach that calls upon the finest minds and resources to prepare a new generation of professionals. We need a group of world environmental leaders who understand not only the biology of natural resource conservation, but also the economic and social context in which conservation must be placed.

This is CERC's mission.



CENTER FOR ENVIRONMENTAL RESEARCH AND CONSERVATION

COLUMBIA UNIVERSITY

NATURAL SCIENCES

Evolution

Systematics

Genetics

Behavioral Ecology

Public Health

SOCIAL SCIENCES

Business

Economics

Political Science

Anthropology

International Policy

AMERICAN MUSEUM OF NATURAL HISTORY

Systematic Zoology

Collections

Library

Molecular Genetics

THE NEW YORK BOTANICAL GARDEN

Systematic Botany

Economic Botany

Herbarium

Library

WILDLIFE CONSERVATION SOCIETY

Collections

Research Center

WILDLIFE PRESERVATION TRUST INTERNATIONAL

Field Sites

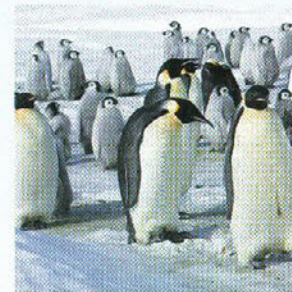
Community Education



AGRICULTURE



MOUNTAINS



POLAR



CORAL REEF



SAVANNA



FOREST

CERC AT COLUMBIA UNIVERSITY

CERC is based at one of America's most prestigious international educational institutions in America's most international city. Columbia's outstanding and diverse schools, departments and experts unite through CERC to exchange ideas, information, and resources.

CERC is a founding member of the Columbia Earth Institute, a cross-disciplinary enterprise focused on research, education and innovations that will enable wise stewardship of our planet.

This network for environmental studies links CERC to the Lamont-Doherty Earth Observatory, one of the world's finest geology centers, and the Goddard Institute for Space Studies, a key research institution for tracking global climate change.

A MULTI-INSTITUTIONAL EFFORT

CERC's strength is based on the collaboration of its unique consortium.

◆ AMERICAN MUSEUM OF NATURAL HISTORY has one of the world's most extensive collections of animal species, as well as a staff that is world-renowned in the cataloging and identification of animal diversity.

◆ THE NEW YORK BOTANICAL GARDEN contains the largest herbarium in the Western Hemisphere and a botanical library that is unmatched in North America.

◆ WILDLIFE CONSERVATION SOCIETY operates the largest urban zoo in America and extensive ongoing field research around the world.

◆ WILDLIFE PRESERVATION TRUST INTERNATIONAL is a conservation organization known for integrating research with community action at the grassroots level.

AN UNMATCHED EDUCATIONAL PROGRAM

With its consortium institutions, CERC has designed an interdisciplinary program within which undergraduate and graduate students build a strong academic foundation while gaining practical experience locally or at sites around the world.

More than a collection of natural science programs, CERC's curriculum traverses many academic disciplines, including the social sciences. CERC has also developed a training forum for senior international conservation professionals, further underscoring the need to bring the most experienced people together to learn and seek solutions.

CERC alumni will be prepared to conduct ecological, behavioral, systematic, and molecular research, as well as to formulate or implement environmental policy related to biodiversity issues. Graduates of CERC will have the tools and experience necessary to pursue academic careers or professional positions in conservation, environmental and multilateral aid organizations.

CERC INTERNATIONALLY

The greatest concentration of biodiversity lies outside the borders of the United States. A comprehensive education and training program must have connections with these areas.

The establishment of affiliate centers in areas of high biodiversity around the world reinforces CERC's program. These centers are prepared to take Columbia students for internships or research in connection with major host country initiatives. CERC, in turn, is a center for the education and training of future scientists and policy makers from important habitat countries. Agreements between CERC consortium members and universities worldwide allow for diverse international opportunities to pursue research and training.

EDUCATION

CERC administers an undergraduate major, Environmental Biology, and a doctoral program, Ecology and Evolutionary Biology. Students receive their degrees from Columbia University. An important aspect of both programs is student involvement in field research. Through CERC, its consortium members, and overseas affiliates, students have access to an extensive array of research sites and summer internship opportunities. Among these are Biosphere 2 in Arizona, a unique facility for controlled environmental studies, and the Black Rock Forest in New York, a diverse temperate forest reserve.

TRAINING

Many professionals in conservation-related fields have learned their trade "on the job" because formal training was not available. A mid-career program, the Morningside Institute, is devoted to providing such training. The Institute allows them to round out their academic background, gain new skills, and profit intellectually from interaction with other professionals, students and researchers.

RESEARCH

CERC teams conduct biological research to assess long-term viability of selected populations, predict possible future extinctions of vulnerable communities and species, and develop methods for ecosystem monitoring and management. Human ecology, policy frameworks for biodiversity conservation, the economics of natural resource management, and the relationship between ecosystem health and human disease are also integral to CERC's research agenda.

Through its international, multi-institutional, and interdisciplinary orientation CERC is well equipped to lead the effort to preserve the diversity of life on earth.

The whole Earth — in microcosm.

How will global warming affect our water?
our food? our entire planet?

During the course of atmospheric change,
what will happen to various species — will
they adapt? compete? die out altogether?

As Earth's population grows, how will
the planet support our needs for food,
electricity, transportation, and medicine?

What can human beings do today to help
protect the only home we know?

At Biosphere 2 Center, we're asking
questions like these — and finding answers.

Biosphere 2 Center Campus
of Columbia University
P.O. Box 689
Oracle, Arizona 85623
1-800-992-4603
<http://www.bio2.edu>



THE COLUMBIA EARTH INSTITUTE
Innovations for wise stewardship of our planet

THE COLUMBIA EARTH INSTITUTE
BIOSPHERE 2 CENTER

a sea

a savanna

a marsh

a rainforest

a desert

a farm

and a window on our
environmental future



For scientists.

Scientists from Columbia University and other institutions are working on projects including studies of the ecophysiology of wilderness plants and soils; the long-term CO₂ enrichment of agricultural systems; ocean-coral reef ecology and physiology; and biogeochemical cycles.

Biosphere 2 Center, boldly innovative in purpose yet user-friendly in practice, is open to researchers throughout the world.



For students.

Adventurous undergraduates, including science and non-science majors from a range of countries, earn Columbia University credit and gain intensive, hands-on experience during our Earth Semester (spring and fall), Earth Systems Field School (summer sessions), and summer program on Island Conservation and Biogeography in the Sea of Cortez.

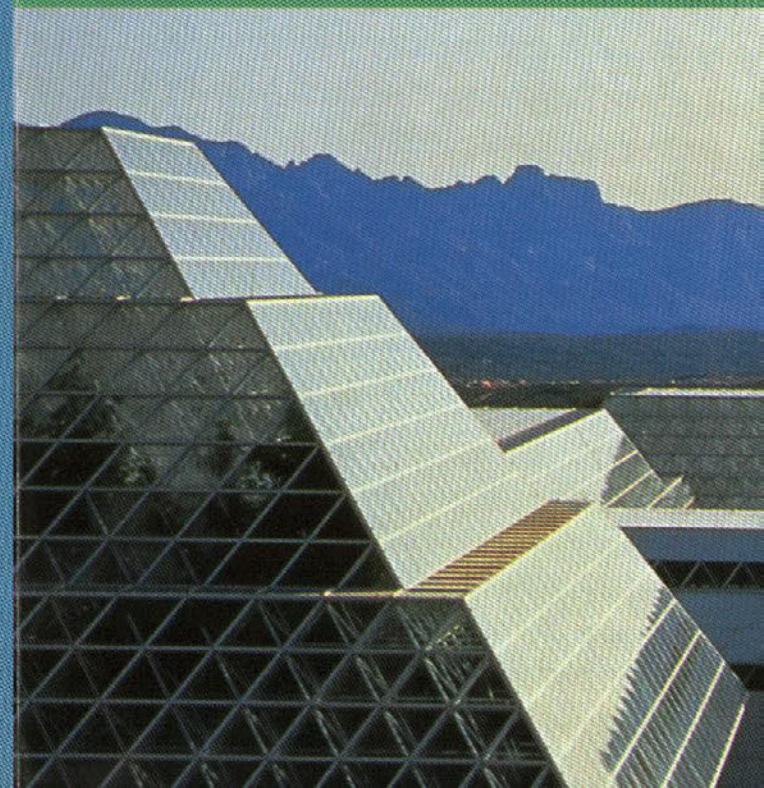
Students of all ages and backgrounds become better acquainted with our planet's ecosystems at Biosphere 2 Center. Through Earth Exploration programs, everyone from college students to senior citizens can take courses on topics such as the Mexican seas, the southwestern desert, the arctic wilderness, and even tropical rainforests. Our K-12 programs — for both students and teachers — help young people become better planetary decision makers.



For everyone.

Every year, almost 200,000 people come to Biosphere 2 Center. Some take classes and conduct research; some attend professional meetings and conferences; and a great many come just to enjoy the beauty and fascination of this extraordinary campus. Within our campus, attractions range from guided tours, interactive exhibits, restaurants, and gift shops to our hotel's spectacular views of the Santa Catalina Mountains.

On the whole Earth, there's nothing like it — except maybe the whole Earth itself.



Peering into the future to see what our environment will be like 25, 50, even 100 years from now: That's the job of scientists at Biosphere 2 Center, the western component of Columbia University's Earth Institute.

Located in the Arizona desert, 30 miles north of Tucson and in the foothills of the majestic Santa Catalina Mountains, Biosphere 2 Center offers a dynamic, versatile laboratory for the study of Earth systems and planetary management.

The centerpiece of our 250-acre campus is Biosphere 2 itself, an engineering marvel made of glass, steel, and concrete and enclosing a three-acre collection of ecosystems: a rainforest, a savanna, a marsh, a desert, a farm, and a million-gallon saltwater mini-ocean with a coral reef. Other buildings house labs, classrooms, the huge "lungs" that regulate Biosphere 2's air volume, and special attractions for visitors: a science center, a conference center, a hotel, and gift shops.

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

COLUMBIA EARTH INSTITUTE

MEMORANDUM

Date: 15 September 1997

To: T. Stern

From: E. Smith

re: Columbia Earth Institute

Attached is a package of material which describes the research and expertise of the Columbia Earth Institute. The Earth Institute is a university-wide multidisciplinary effort focused on the physical, biological and human elements of global change. Our researchers and teachers are world leaders in the field of climate change. Highlights in the package include:

- *An overview of the Columbia Earth Institute and its mission* - The Earth Institute is a horizontally integrating effort that includes 10 research units and partnerships with many of Columbia's schools. Its mission is to provide the knowledge necessary to support the wise stewardship of our planet.
- *Biosphere 2 Center overview* - Biosphere 2 Center, Inc. is a non-profit research, teaching and learning campus centered around the Biosphere 2 facility in Oracle Arizona.
- *Center for Environmental Research and Conservation overview* - CERC is a consortium focused on understanding and managing biodiversity. The consortium includes Columbia University, the American Museum of Natural History, the New York Botanical Garden, the Wildlife Conservation Society, and the Wildlife Preservation Trust.
- *International Research Institute (IRI) for climate prediction overview* - The IRI is Earth's first operational climate forecasting institution. Its international mission is to provide forecasts of El Niño to regions around the globe in forms that are useful to the particular cultures and societies that are affected by seasonal to interannual climate variability.
- *Lamont-Doherty Earth Observatory overview* - LDEO is the world's premier Earth science research facility. In addition to laying the foundation for our understanding of climate change, LDEO researchers have been pioneers in unlocking such revolutionary paradigms as plate tectonics and the spin of the core.

enc.

IRI

INTERNATIONAL RESEARCH INSTITUTE
FOR CLIMATE PREDICTION

EL NIÑO AND THE SOUTHERN OSCILLATION

The El Niño/Southern Oscillation (ENSO) is a natural climate cycle that occurs irregularly over several years. A pool of very warm surface waters shifts from one end of the tropical Pacific Ocean to the other, accompanied by a tremendous center of tropical rainfall. The shifting oceanic and atmospheric circulation dramatically rearranges wind and rainfall patterns over more than half the globe. In fact, ENSO is second only to the seasons themselves in driving worldwide weather patterns.

GLOBAL IMPACTS

ENSO directly impacts climate from the Far East, Australia and southern Africa to South America and the United States. It affects:

- ✱ the onset and intensity of the Indian Monsoon;
- ✱ the frequency, severity and paths of storms in the Pacific;
- ✱ the location of commercial fish populations;
- ✱ and the occurrence of regional droughts, forest fires, floods, mudslides, storms and hurricanes in many parts of the world. It has even been linked to the spread of diseases such as malaria, cholera and dengue fever.

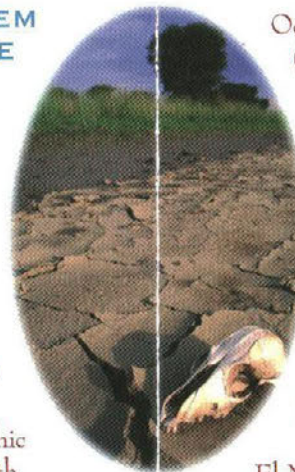
AN EARLY-WARNING SYSTEM FOR DESTRUCTIVE CLIMATE PATTERNS

For the first time in human history, we can now make advanced warning of droughts, floods and other climatic catastrophes — and provide the opportunity to reduce the devastation they bring.

A NEW INTERNATIONAL RESEARCH INSTITUTE (IRI) FOR CLIMATE PREDICTION

Two of the world's leading oceanographic institutions — the Lamont-Doherty Earth Observatory of Columbia University and the Scripps Institution of Oceanography, University of California, San Diego — have joined to host a new research center to predict El Niño and associated short-term climate changes several months to a year in advance.

The International Research Institute (IRI) for climate prediction, established by the National



Oceanic and Atmospheric Administration (NOAA), will conduct research to improve climate models and disseminate forecasts to agencies and policymakers around the world. These predictions will offer farmers, fishermen, public health officials, water resource managers, utilities, relief workers, transportation experts and others a chance to reduce the human and economic devastation caused by extreme climate conditions.

PREDICTING EL NIÑO

As recently as 1982, the most intense El Niño of the century was not predicted during its early stages. It caused thousands of deaths and more than \$13 billion in damage worldwide.

But in 1986, Lamont-Doherty scientists Mark Cane and Stephen Zebiak used a computer model to make the first successful prediction of an El Niño. Scripps scientists Tim Barnett and Nicholas Graham later developed another successful model.

IRI

INTERNATIONAL RESEARCH INSTITUTE
FOR CLIMATE PREDICTION

P.O. Box 1000 • 61 RT. 9W

PALISADES, NY 10964-8000 USA

PHONE: (914)365-8368 FAX: (914)365-8366

WEBSITE: [HTTP://IRI.LDEO.COLUMBIA.EDU/](http://iri.ldeo.columbia.edu/)

WHAT IF WE HAD A YEAR'S NOTICE?

In 1994, Cane and his colleagues showed that El Niño forecasts can also forecast corn harvests a year in advance and halfway around the globe in southern Africa, where the region's worst drought in a century affected nearly 100 million people in 1991-92. Large-scale relief efforts by local governments and the international community, including some \$800 million by the U.S., were needed to avert widespread famine. The drought could have been predicted using computer models.

A MULTINATIONAL NETWORK

IRI will help translate scientific discoveries into beneficial social policies and strategies. Its goals are to advance basic research in understanding and predicting short-term climate cycles and to produce information that can be expeditiously transferred and put into practice by farmers, water resource managers and myriad other potential users who know little or nothing about meteorology. Forecasts will be disseminated to a multinational network of regional applications research centers in areas vulnerable to ENSO-related changes. Local research centers will fine-tune global forecasts to their particular areas and transmit back data from many regions in a continual effort to improve global models.

SCIENCE FOR THE PUBLIC GOOD

Armed with such forecasts, local policymakers would have the necessary time and information to



manage food, water and energy more efficiently. They could store or export grain; adjust fertilizers, planting schedules or crop types to avoid crop failures and improve yields; conserve water or divert rivers; alert fishing fleets; sandbag vulnerable hillsides; prepare health and emergency plans and otherwise devise strategies to lessen the damage caused by climate fluctuations.

A PILOT PROGRAM

In 1993, NOAA launched a pilot project to demonstrate the operating concepts of an IRI. The project has trained 76 climatologists and scientists in agriculture and water resources from around the world, most of whom came to Lamont-Doherty in Palisades, N.Y., where they received training in the latest climate models and their potential for practical applications. They have come from 26 countries: Argentina, Australia, Brazil, Chile, China, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, India, Indonesia, Japan, Kenya, Mexico, Nicaragua, Panama, Paraguay, Peru, South Africa, the U.S. Pacific Islands, Uruguay, Venezuela and Zimbabwe.

PLANNING FOR EXTREMES

Simple planning for normal climate conditions is not good economic or social policy. Life depends on rainfall, and the climate will always create times of excess and absence. IRI will provide the information societies need to adapt to extreme climate periods in order to save lives, reduce economic losses and avoid suffering.

IRI IS A COOPERATIVE AGREEMENT BETWEEN NOAA OFFICE OF
GLOBAL PROGRAMS, LAMONT-DOHERTY EARTH OBSERVATORY OF
COLUMBIA UNIVERSITY AND SCRIPPS INSTITUTION OF OCEANOGRAPHY/
UNIVERSITY OF CALIFORNIA, SAN DIEGO.





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COLUMBIA UNIVERSITY

1200 AMSTERDAM AVENUE, MAIL CODE 5557

NEW YORK, NY 10027

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COLUMBIA

UNIVERSITY

MAJOR IN

ENVIRONMENTAL

BIOLOGY

ENVIRONMENTAL BIOLOGY

UNDERGRADUATE MAJOR

Within the next fifty years, every wild place on earth will be subject to human influence. At this critical juncture in our history we are faced with global warming, changes in atmospheric composition, degraded ecosystems, unprecedented losses of biodiversity, and booming human populations. The demand for a new generation of environmental leaders is on the rise.

For over 30 years, in the United States and internationally, there has been a severe shortage of university programs dedicated to preparing students in the study of plants, animals, and environmental sciences. As a result, there is a scarcity of trained professionals to meet the growing number of environmental challenges.

This is why Columbia University has created several new majors in the broad area of environmental science. Among these is the interdepartmental undergraduate major in Environmental Biology. The Center for Environmental Research and Conservation (CERC) oversees the interdepartmental program, and faculty from the Columbia Departments of Anthropology, Biological Sciences, and Earth and Environmental Sciences, as well as the Departments of Biological Sciences and Environmental Science at Barnard College, offer the courses.

The Environmental Biology major is an interdisciplinary program that provides students with a strong foundation in biology, environmental science, systematics, ecology, population biology, and biodiversity conservation. Graduates with this major will have an understanding of the life sciences as well as an exposure to social sciences, such as economics and government. The major provides the solid academic grounding and necessary training to enter the rapidly evolving environmental work force or to pursue graduate studies.



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BIODIVERSITY



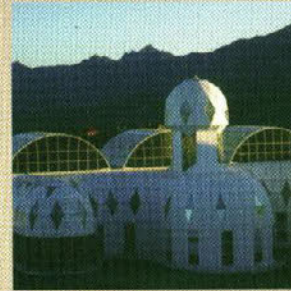
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HABITAT CONSERVATION



© D. MELNICK

ENDANGERED SPECIES



© R. DEMICCO

BIOSPHERE 2



© J. WEITNER

ANIMAL BEHAVIOR



© J. BARKEY

ENVIRONMENTAL POLICY

CERC

CERC, located on the 10th floor of Schermerhorn Extension, is the administrative headquarters for the interdepartmental Environmental Biology major. CERC is a unique consortium of five of the country's finest nature-oriented institutions—Columbia University, the American Museum of Natural History, the Wildlife Conservation Society, The New York Botanical Garden, and Wildlife Preservation Trust International. The American Museum of Natural History has one of the world's most extensive collections of animal species, as well as a staff that is world-renowned in the cataloging and identification of animal diversity. The largest herbarium in the Western Hemisphere is found at The New York Botanical Garden, as well as a botanical library that is unmatched in North America. The Wildlife Conservation Society operates the largest urban zoo in America and extensive ongoing field research around the world. And Wildlife Preservation Trust International is a conservation organization known for integrating research with community action at the grassroots level.

These five education and research institutions have joined forces to make CERC a unique resource for conservation-related research and training for scientists, planners, and managers from around the world. CERC unites a diversity of voices to exchange points of view and to focus on provocative issues and unsolved problems of conservation. This unique academic environment provides students with unparalleled opportunities to explore intellectual pursuits and foster professional contacts.

CURRICULUM

Students enrolling in the Environmental Biology major are required to follow three distinct core areas: their college core; the Environmental Sciences core; and the Environmental Biology Upper Division core.

The prestigious Columbia College core and the breadth requirements in the School of General Studies provide students with a well-rounded liberal arts foundation. They include courses in music, art, literature, languages, and world cultures. The Environmental Sciences core requires students to follow sequences of courses in the physical and biological sciences. Topics include climate, earth, and life systems, cellular and organismal biology, chemistry, and physics, as well as statistics and calculus. The Environmental Biology Upper Division curriculum is specific to this major and includes course work in six areas: environmental policy and economics; laboratory work in the life sciences; evolution and genetics; ecology and behavior; anatomy and physiology; and population and conservation biology. The major is completed with an interdisciplinary senior seminar in which a real-world environmental issue is addressed in a collaborative class project.

INTERNSHIP REQUIREMENT

Each student is required to complete an environmental biology internship. Through these internships, students build on their academic foundation while obtaining direct practical experience locally or at sites around the world. Through CERC, its consortium members, and overseas affiliates, students have access to an extensive array of research sites and summer opportunities. Each summer, CERC funds up to ten undergraduate students in active research or field work in the environmental or life sciences.

EARTH SEMESTER AT BIOSPHERE 2

Earth Semester at Biosphere 2 is a new, innovative program offered by Columbia University for both science majors and other students with an interest in earth systems and the environment. Biosphere 2 is a unique 3.15-acre sealed ecological and biogeochemical laboratory in the lush Sonoran desert ecosystem in Oracle, Arizona. There, students participate in lectures, discussions, research projects on climate change, modeling of complex systems, and field trips to various geological and ecologically significant sites in Arizona. Students in the Environmental Biology major who choose to enroll in this program will be able to fulfill some of their core requirements during the Earth Semester.

FUTURE PROSPECTS

Graduates with a degree in Environmental Biology can look forward to a wide range of personally rewarding careers in the environmental field. With the appropriate internship experiences, positions for people with undergraduate degrees can include: wildlife biologist for a state government, research assistant for a conservation nongovernment organization or an environmental consulting firm, assistant curator at a natural history museum or zoological park, technician in a biomedical research laboratory, instructor in an environmental education facility, or writer for an environmental publication.

Surveys have shown, however, that most new jobs do require advanced degrees. Due to the interdisciplinary nature of the Environmental Biology major and its solid science base, students graduating with this major are well prepared to enter graduate studies in many fields, including conservation biology, earth sciences, zoology, ecology, environmental policy, or even medical school.

RESOURCES

On-campus resources and facilities include:

- Teaching and research greenhouses
- Molecular and morphology research laboratories
- Advanced electronic data gathering facilities
- The University library system
- Faculty from CERC and several Columbia University departments
- Affiliate facilities:

- The Black Rock Forest, Hudson Highlands, New York
- Lamont-Doherty Earth Observatory, Palisades, New York
- Goddard Institute for Space Studies, New York, New York
- Biosphere 2, Oracle, Arizona
- Center for Biodiversity and Conservation Studies, University of Indonesia, Indonesia
- The Institute for Ecological Research Projects, Brazil

For more information about the Environmental Biology major, contact Prof. William Hahn, Director of Undergraduate Studies, at (212) 854-8189; fax (212) 854-8188; e-mail: wh55@columbia.edu; or visit CERC's home page on the World Wide Web: <http://www.columbia.edu/cu/cerc/>

CENTER FOR ENVIRONMENTAL RESEARCH AND CONSERVATION

Columbia University
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1200 Amsterdam Avenue
New York, NY 10027

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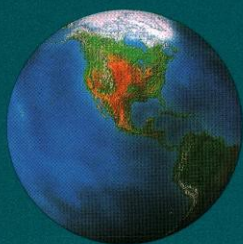
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Sylvan Historians of Climate

THE HIGH PASS OF THE TARVAGATAY MOUNTAINS OF WESTERN CENTRAL MONGOLIA IS A VAST LANDSCAPE OF SCATTERED FORESTS AND GRASSES, RELATIVELY UNDISTURBED BY HUMAN ACTIVITY.

(continued on page 1)

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Exploring Earth's Future in Biosphere 2

WHEN COLUMBIA UNIVERSITY'S LAMONT-DOHERTY EARTH OBSERVATORY ANNOUNCED ITS NEW AFFILIATION WITH BIOSPHERE 2 IN THE FALL OF 1995, MANY PEOPLE SAID IT WAS AMBITIOUS, RISKY, A RADICAL LEAP IN A NEW DIRECTION, A BREAK WITH TRADITION. *(continued on page 1)*

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IDEON NEWS

WINTER 1995

A Seismic Watchdog To Police a Nuclear Test Ban

AS YOU READ THIS, SEISMIC WAVES ARE COURGING IN ALL DIRECTIONS OVER THE EARTH'S FACE AND DEEP INTO ITS BODY — MUCH THE WAY A STONE THROWN INTO A LAKE SENDS

RIPPLES ACROSS THE SURFACE AND DOWN TO THE BOTTOM. (continued on page 1)

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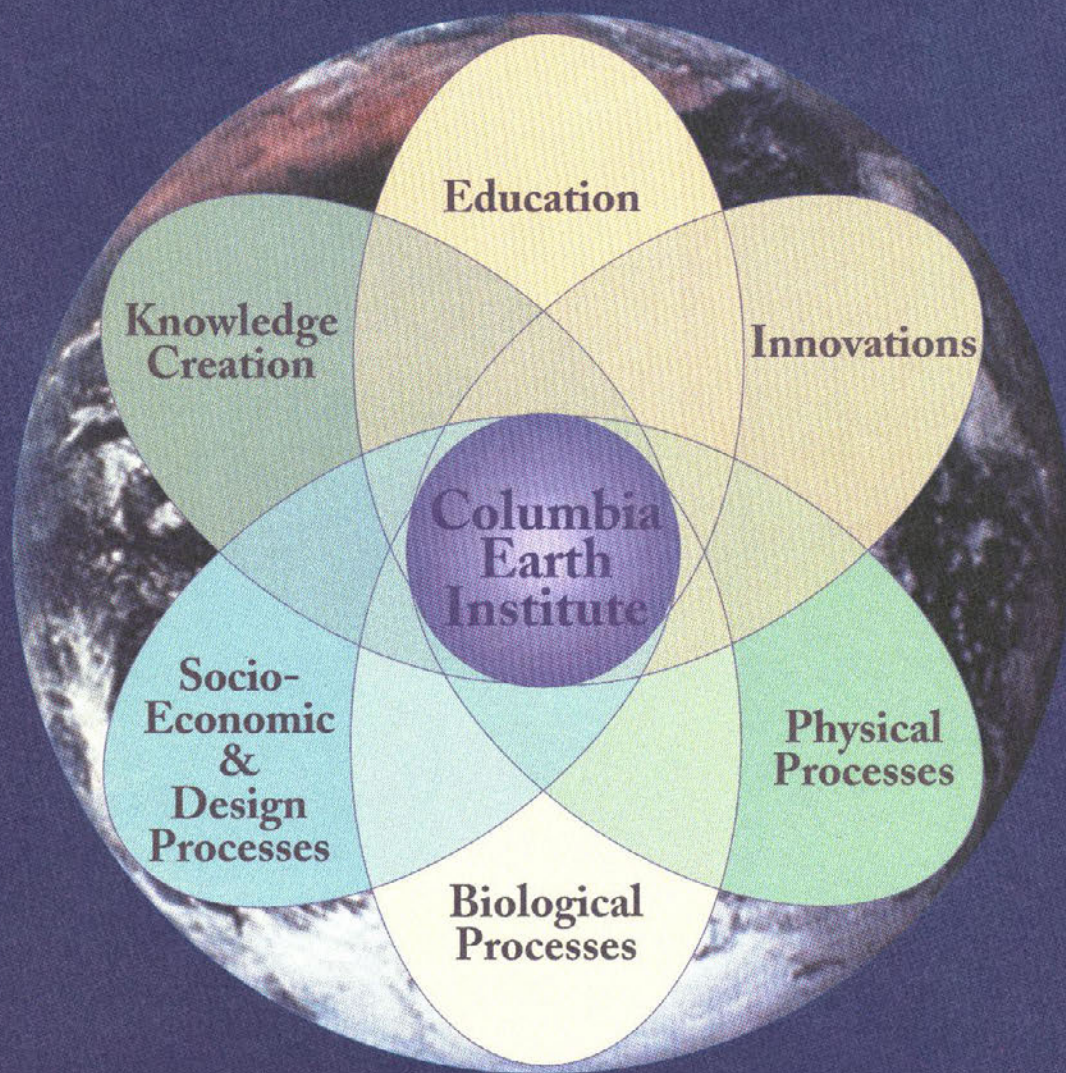
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THE COLUMBIA EARTH INSTITUTE

*Innovations for Wise Stewardship
of Our Planet*



COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK



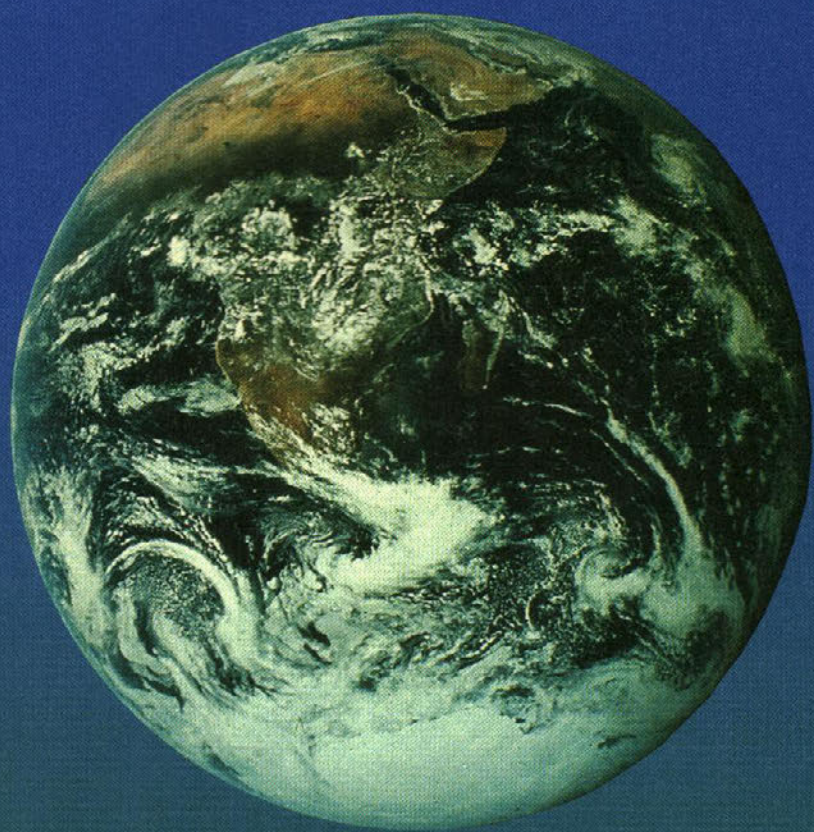
The mission of the Columbia Earth Institute is to create the knowledge base, educate the leadership and citizenry, and help develop the innovations that will enable us to become wise stewards of our planet. The Institute will focus on complex global problems and issues whose many facets require the collaborative efforts of many experts.

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earth matters

News
from
The
Columbia
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