New Biosphere 2 Master’s Combines Study of Science and Public Policy

By Aniegel Beshkin

Next summer, Columbia University will begin offering a one-year master’s degree in Earth Systems Science, Policy and Management, allowing students to combine their expertise in natural sciences and professional careers with intensive scientific study. The new program is a collaboration between Columbia’s School of International and Public Affairs (SIPA) and the Biosphere 2 Center, housed at Biosphere 2 Center, Columbia’s “western” campus near Tucson, Arizona.

This new program takes a unique approach. Students will develop the professional skills taught in typical MPA management and policy courses—financial analysis, policy analysis, grant-writing, oral briefings, team building and the use of various computer programs—but will do so following a summer immersion in science and by using case studies presented exclusively on earth science.

This will allow students to practice solving real-world problems by analyzing the economic, political, ethical and management issues raised in the study of earth systems. Ultimately, they will understand and prepare to address such global change issues as global warming and air, water and waste management concerns.

The program is designed to close what is seen as a growing rift in understanding between scientists and the professionals who make important decisions on science policy.

“There is so often a deep disconnect between scientists and the administrators who are responsible for setting science policy,” said Steven Cohen, the program’s director and creator. “This has led to a feeling among scientists that policy-makers are making decisions without a real understanding of what’s at stake. In contrast, our graduates will leave with a better understanding of what it is they’re regulating and managing.”

During their year at the 250-acre campus, including a state-of-the-art Earth systems laboratory located in Arizona’s Sonoran Desert, students will have hands-on science learning in Biosphere’s different biomes including a rainforest, a million-gallon saltwater ocean and coral reef, and a coastal fog desert.

In addition, Columbia has just built a $10 million student village for 300 students, allowing program participants access not only to state-of-art science facilities but also cutting-edge laboratories, libraries, dormitories and other living facilities.

The degree granted will come from Columbia University. The program’s intensive focus on science allows students to earn their master’s in only 12 months; Columbia’s other MPA program takes 18 months to complete. This will make it easier for people from other countries, already working in policy without advanced degrees, to earn a Columbia MPA in a relatively short period of time.

The creation of this new professional degree program is a product of the realization that institutional, social and economic processes interconnected to both sustain and endanger the biosphere. It is part of an initiative by Michael Crow, Columbia’s provost. As a “very wise, very wise, very wise” advocate for scientific research, the program has already received $150,000 from Crow.

“Columbia is a leader internationally in teaching both environ- mental and public policy,” said Crow. “By capitalizing on these two strengths, we hope to train the next generation of policy mak- ers and scientists to work together toward global sustainability.”

Lisa Anderson, dean of SIPA, said that the field of public policy increasingly demands more technical and policy professionals with interdisciplinary skills.

“The single most important challenge for public policy makers of the 21st century is to acquire scientific literacy that will enable them to be effective stewards of our future,” said Anderson. “Columbia is one of the first uni- versities in the world to develop this approach to public policy, which is a central component of environmental and earth sciences at the university level. One of the largest living laboratories for the study of our planet, Biosphere 2 Laboratory is equipped to conduct controlled experiments that simulate regional and global activities, allowing sci- entists to observe the ecological and economic responses of entire ecosystems to environmental changes, including processes that would be impossible to study in natural ecosystems.

Students will have the opportunity to work with internationally renowned scientists who perform research at Biosphere 2 and to network with policymakers, developing relationships that will assist them throughout their careers. About one-third of the class will join the program straight from receiving their undergraduate degrees, while the rest will already have experience working in a variety of fields. Learning alongside a cohort of students from different backgrounds with a variety of experiences also allows students the opportunity to develop a profes- sional network among their peers.

Under the leadership of Charles Barry Osmond, a internationally renowned plant biologist, Bios- sphere 2’s research is growing stronger in modeling, simulation and systems engineering.

“The scientific and educational mission of Biosphere 2,” explains Osmond, “is to serve as a center for research, teaching and learning about the Earth and its systems to catalyze interdisciplinary thinking and understanding about Earth and its future; to be a national center for Earth education and outreach to industry, government and the general public; and to focus public attention on the issues related to Earth systems planning and management.”

In addition to providing a focus for research, the Biosphere 2 Center will provide semester and summer programs for high school and undergraduate students. The facility’s conference center and exhibits attract over 17,000 visitors annually.

In a BusinessWeek (9/24/03) article, Joseph E. Stiglitz, eco- nomic advisor and former chief economist for the World Bank, commented on the implications from the project that could have on the economy.

In an announcement for BusinessWeek, Alan Brinkley, president of history, warns that a crisis without a resolution could be dangerous for President Bush’s public image. Commenting on the financial backing and role of intervention, Brigitte Nacos, adjunct profes- sor at the School of International and Public Affairs, in a cited New York Times article, “Your line now, Mr. Bush”.

Alan Brinkley addressed the potential loss of privacy because of “borderless” security in the technology section of The Wall Street Journal (9/13/03).

In an article on New York University’s emotional recovery, Steven Cohen, professor of public manage- ment, comments on the long road ahead in USA Today (9/14/03).

In response to the television network’s coverage of the recent attacks, Roy Aron, director of Columbia’s Lamont- Doherty Earth Observatory in Palisades, New York, commented in The New York Times (Day, 9/16/01) that the essential role television anchors have played.

Andrew Smyth, assistant professor of civil engineering, was assessed in New York (9/14/03) about the structural damage of the World Trade Center buildings that would affect rescue efforts.

On rebuilding New York City after the tragedy, economics professor David Weinstein said in The Associated Press (9/16/01) and The New York Post (9/17/01) that the long-run impact is modest.

John Armour, chancellor of Columbia’s Lamont- Doherty Earth Observatory in Palisades, New York, was quoted in The New York Times (Satur- day, 9/16/01) about the seismic activity of the collapse of the World Trade Center.

In an article about the photos in fliers of people missing in relation to the World Trade Center tragedy, Thomas Roma, director of photography at the school of visual arts, were the most moving and authentic works of self expression he has ever seen.

Gary Sick, director of the Middle East Institute, was interview- ed by the Associated Press (9/17/01) about the political image.

In a USA Today (9/17/01) article about the photos in fliers of people missing in relation to the World Trade Center, commented on the implication of the collapse of the World Trade Center.

Ruth Bilder Ginsburg, associate justice, Supreme Court of the United States, in his speech for women’s legal rights, was honored by her alma mater, Columbia University, for her work with the National Abortion Rights Action League and the Women’s Rights Project of the American Civil Liberties Union. In 1973, Ginsburg was instrumental in launching the Women’s Rights Project of the ACLU.

In 1978, she was a fellow at the Middle East Institute, was inter- viewed by the Associated Press (9/17/01) about the political image.

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