



Environmental Institutions Seminar Series

Presents

Malcolm Gillis, Ph.D.

Opportunities at the Intersection of Three Technologies: Economic and Ethical Perspectives

Wednesday, January 19, 2005

12:30 pm –2:00 pm

Room A158 Levine Science Research Center, Research Drive, Duke University

Abstract

Biotechnology, nanotechnology, and information technology can be expected, in fairly short order, to materially affect the way we live, how well we live, and how long we live. Especially significant are the possible implications for the environment, for biomedicine, for energy availabilities, and for new materials.

Biomedical research initiated a century ago is still paying handsome social and economics dividends today. But tomorrow's biotechnology, in concert with the new field of nanotechnology and the—relatively—older field of information technology, holds out the promise of benefits that should make those of the past century pale by comparison. However, there are some potential perils as well; we are just learning how to begin to cope with them.

Wet nanoscience (that which centers on the study of biological systems in a water environment) is virtually indistinguishable from biotechnology. The economic and social promise of both has been vastly amplified by new computational innovations; in the words of Nobel Laureate David Baltimore, "biology has become an information science."

This address attempts to identify some of the most important of present and future applications flowing from the intersection of all three technologies. The potential economic and social blessings of the new technologies are fairly readily identifiable; the potential ill effects are not. In addition, it is possible that both our expectations and our worries over the bio-nano-info revolution have been overdrawn. Financial constraints on the transfer of these technologies may be loosening, but legal constraints on them loom much larger than in the technological revolutions of the 19th and 20th centuries.

Still, if ways can be found to resolve ethical and moral issues residing in some applications of these technologies, the economic and social impact could be far more profound, and more positive, than wrought by any previous revolution in human history.

Biography

Malcolm Gillis has returned to Duke University from his tenure as President of Rice University in Houston, Texas from 1993 to 2004. Gillis is a visiting professor of public policy studies at the Terry Sanford Institute of Public Policy and a distinguished research fellow for the Duke Center for International Development. Gillis began his academic career at Duke as assistant professor of economics, then spent 15 years at Harvard University. He returned to Duke in 1984 as a professor of economics and public policy. He served as Dean of the Graduate School and Vice Provost for Academic Affairs from 1986 to July 1991, and in 1990 was named Z. Smith Reynolds Distinguished Professor in Public Policy.

Gillis was Dean of the Faculty of Arts and Sciences from 1991 until his departure for Rice in 1993. Among his many accomplishments are co-founding both the Duke Center for World Environment and Sustainable Development and the Duke Center for Tropical Conservation. During the course of his career, Gillis has published 70 journal articles, and is author, co-author or editor of eight books. Following his year at the Terry Sanford School of Public Policy, Dr. Gillis will return to Rice as University Professor in August 2005.



A light lunch will be served.

**Please RSVP by January 17, 2005 to Duke Center for Environmental Solutions: leithc@duke.edu, or 613-8131
For directions to seminar locations, visit our website: <http://www.env.duke.edu/solutions/>**