



Smithsonian
Institution



**Perspectives on *Limits to Growth*:
Challenges to Building a Sustainable Planet**

**Co-sponsored by The Club of Rome and the Smithsonian Institution's Consortium for
Understanding and Sustaining a Biodiverse Planet**

1 March 2012

**The Rasmuson Theater
National Museum of the American Indian
4th Street and Independence Avenue, S.W.**

The Club of Rome and the Smithsonian Institution are hosting this symposium in Washington, DC to celebrate the 40th anniversary of the launching of *Limits to Growth*, the first report to the Club of Rome published in 1972. This book, which sold over ten million copies in various languages, was one of the earliest scholarly works to recognize that the world was fast approaching its sustainable limits. Forty years later, the planet continues to face many of the same economic, social, and environmental challenges as when the book was first published.

The symposium is divided into two sessions. The morning session focuses on the lessons of *Limits to Growth* and includes presentations by two of the original authors of the work, Dennis Meadows and Jørgen Randers. These talks will be complemented by a perspective from Lester Brown, President of the Earth Policy Institute and author of *World on the Edge: How to Prevent Environmental and Economic Collapse*.

The afternoon session addresses the difficult challenges of preserving biodiversity, adjusting to a changing climate, and solving the societal issues now facing our world. Dr. Doug Erwin, Senior Scientist and Curator of Paleobiology at the National Museum of Natural History and author of *Extinction* (Columbia University press), will address how climate has structured biodiversity over long periods of time in the geologic history of the planet. Prof. Richard Alley, geoscientist from Pennsylvania State University and presenter and author of the PBS series and book *Earth: The Operators' Manual*, will speak on climate change in the present day. Finally, Neva Goodwin, the Director of the Global Development and Environment Institute at Tufts University and lead author of *Microeconomics in Context* and *Macroeconomics in Context*, will discuss the many societal challenges that must be addressed in a world without growth, from ecological health to restructuring corporations for social responsibility. The symposium will end with a panel discussion, moderated by Dr. Eva J. Pell, Under Secretary for Science at the Smithsonian Institution, on future steps for building a sustainable planet.

Perspectives on *Limits to Growth*: Challenges to Building a Sustainable Planet

Rasmuson Theatre
National Museum of the American Indian
4th Street and Independence Avenue, S.W.
Thursday, March 1, 2012
9:00 a.m. – 6:00 p.m.

Opening Session Co-chairs: W. John Kress and Roberto Peccei

- 9:00 a.m. Welcome and introduction by W. John Kress, Smithsonian Institution
- 9:05 a.m. Opening remarks by Secretary G. Wayne Clough, Smithsonian Institution
- 9:15 a.m. Remarks by Ian Johnson, Secretary General, Club of Rome
- 9:25 a.m. Remarks by Katherine Lorenz, President, The Cynthia and George Mitchell Family Foundation

Morning Session Chair: Roberto Peccei

- 9:30 a.m. Dennis Meadows *It is too late for sustainable development*
- 10:15 a.m. Jørgen Randers *Lessons of forty years of promoting limits to growth*
- 11:00 a.m. Coffee Break
- 11:30 am Lester Brown *World on the Edge*
- 12:15 pm Lunch Break

Afternoon Session Chair: W. John Kress

- 1:45 p.m. Doug Erwin *Biodiversity: past, present and future*
- 2:30 p.m. Richard Alley *Climate change and energy; challenges and opportunities*
- 3:15 p.m. Coffee Break
- 3:45 p.m. Neva Goodwin *Labor's declining share and future quality of life*
- 4:30 p.m. Panel moderated by Eva Pell, Under Secretary for Science, Smithsonian Institution
- 5:45 p.m. Closing remarks and invitation to reception
- 6:00 p.m. Reception in Potomac Atrium until 7:00 p.m.

Co-sponsored by the Smithsonian Institution's
Consortium for Understanding and Sustaining a Biodiverse Planet and The Club of Rome

Funding support provided by The Club of Rome, The Cynthia and George Mitchell
Family Foundation, Pedro and Carol Cuatrecasas, and the Smithsonian Institution

The Club of Rome

The Club of Rome was founded in 1968 as an informal association of independent leading personalities from politics, business and science, men and women who are long-term thinkers interested in contributing in a systemic interdisciplinary and holistic manner to a better world. The Club of Rome members share a common concern for the future of humanity and the planet.

The aims of the Club of Rome are: to identify the most crucial problems which will determine the future of humanity through integrated and forward-looking analysis; to evaluate alternative scenarios for the future and to assess risks, choices and opportunities; to develop and propose practical solutions to the challenges identified; to communicate the new insights and knowledge derived from this analysis to decision-makers in the public and private sectors and also to the general public, and to stimulate public debate and effective action to improve the prospects for the future.

The Club of Rome, in its early years, focused on the nature of the global problems, the “problematique”, on the “limits to growth”, and on new pathways for world development. The Club of Rome is focusing in its new program on the root causes of the systemic crisis by defining and communicating the need for the vision and the elements of a new economy which produces real wealth and well-being; which does not degrade our natural resources and provides meaningful jobs and sufficient income for all people. The new program will also address underlying values, beliefs, and paradigms. The Club of Rome publishes its findings in reports, and since its founding has released 33 reports concerning the future of humanity.

The Club of Rome currently consists of approximately 100 individual members; over 30 national and regional associations; the International Centre in Winterthur, a European Support Centre in Vienna, and the Club of Rome Foundation, which provides the opportunity for major individual donors to be involved and to participate in the development and dissemination of the Club’s projects and messages.

Smithsonian Institution, Consortium for Understanding and Sustaining a Biodiverse Planet

The four Smithsonian Consortia (*Understanding the American Experience*, *Valuing World Cultures*, *Understanding and Sustaining a Biodiverse Planet*, and *Unlocking the Mysteries of the Universe*) help to foster a spirit of interdisciplinary collaboration to stimulate intellectual exchange and scholarship within the Smithsonian and beyond. They incubate, develop, and launch collaborations among scholars in our museums, research centers, and educational programs to address the four Grand Challenges of the Smithsonian’s Strategic Plan.

Historically, scientists at the Smithsonian have studied species in a range of ecosystems with the goal of enhancing knowledge of biodiversity and the healthy functioning of sustainable ecosystems. Through the *Consortium for Understanding and Sustaining a Biodiverse Planet* the Smithsonian fosters interdisciplinary research and harnesses its institutional power to expand its work and find innovative approaches to global problems that stem from biodiversity loss, ecosystem degradation, climate change, and human-biosphere interactions. The Consortium supports Smithsonian projects that combine expertise across scientific units and biodiversity disciplines to investigate natural processes and their responses to change.

Dennis Meadows

It Is Too Late for Sustainable Development

My formal remarks will have three goals: explain the essential and still unique contribution of our 1972 report to the Club of Rome, describe how my own understanding about the interaction of limits with physical growth on the planet has changed over the past 40 years, and justify my proposal that humanity's focus should now be more on resilience than on sustainability. It is far too late to achieve sustainable development, as that term is commonly understood. A precipitous decline in resource and energy use is coming in the next decades, and the most important goal now is to adopt policies that will reduce its negative impacts on the values that are most important to us.

Dennis Meadows was appointed to the MIT faculty in 1969. In 1970 he assembled a team of 16 scientists to conduct a two-year, computer-model based study on the long-term causes and consequences of physical growth on the planet Earth. That project was funded by the Club of Rome and led to 3 reports, one of which, *The Limits to Growth*, was presented for the first time to the public in the Smithsonian Institution Castle in March 1972. The book was eventually translated into about 35 languages, and it was selected as one of the most influential environmental books of the 20th century. He worked subsequently with Jørgen Randers and with Donella Meadows, senior author of *Limits to Growth*, to produce a second edition in 1994 and a third edition in 2004. Before becoming Professor Emeritus of Policy Systems in 2004, Dennis Meadows was a professor for 35 years at MIT, Dartmouth College, and the University of New Hampshire earning tenure in schools of engineering, management, and the social sciences. He has received numerous honorary doctorates in the US and Europe for his contributions to environmental education. His many awards include the 2009 Japan Prize. He has co-authored 10 books and designed numerous computer-based strategic planning games that are used in many nations to teach principles of sustainable resource use. He remains very active, especially in Europe and Japan, speaking, writing, and advising corporate and government leaders on issues related to growth.

Jørgen Randers

Lessons from Forty Years of Promoting the Limits to Growth

I am worried about the future of human life on our small planet. I believe that the problems of planetary limitations are solvable technically, and at a surprisingly low cost. However, my worries arise from the fact that humanity appears unable to make the needed decisions to tackle its present problems in time. This is because the world is dominated by short termism. The capitalist system focuses excessively on the short-term effects of investment flows, and democratic society narrowly supports legislation with short-term benefits. As a consequence a myopic world economy has overshoot its limits, and will have to contract. I believe that it is likely that global society will continue to pursue its short-term interests. As a result, the world population and economy will decline after the middle of the 21st century, and will leave a legacy of self-reinforcing climate change for the second half of the century.

Jørgen Randers is professor of climate strategy at the Norwegian Business School, where he works on climate issues, scenario analysis, and system dynamics. He lectures widely at home and abroad on sustainable development issues – particularly climate change – for all types of corporate and non-corporate audiences. Randers is a non-executive member of several corporate

boards in Norway, including the state owned Postal Service. He also sits on the “sustainability councils” of British Telecom in the UK and The Dow Chemical Company in the US. He chaired the Commission on Low Greenhouse Gas Emissions which reported in 2006 to the Norwegian cabinet on how Norway can cut its climate gas emissions by two thirds by 2050. He was President of the Norwegian Business School from 1981 to 1989, and Deputy Director General of WWF International (World Wide Fund for Nature) in Switzerland from 1994 to 1999. He has authored a number of books and scientific papers, including “The Limits to Growth” (1972) and “Limits to Growth – The 30 Year Update” (2004).

Lester Brown

World on the Edge

We are facing issues of near-overwhelming complexity and unprecedented urgency. Can we think systematically and fashion policies accordingly? Can we move fast enough to avoid environmental decline and economic collapse? Can we change direction before we go over the edge? I will look at the economic future through and environmental lens to fashion a plan that will sustain civilization. The plan has four components: a massive cut in global carbon emissions of 80 percent by 2020; the stabilization of world population at no more than 8 billion by 2040; the eradication of poverty; and the restoration of forests, soils, aquifers, and fisheries.

Lester Brown started his career as a farmer, growing tomatoes in southern New Jersey with his younger brother during high school and college. Shortly after earning a degree in agricultural science from Rutgers University in 1955, he spent six months living in rural India where he became intimately familiar with the food/population issue. Brown went on to earn masters degrees in agricultural economics from the University of Maryland and in public administration from Harvard University. In 1959 Brown joined the USDA’s Foreign Agricultural Service as an international analyst, and in 1964 he became an adviser to Secretary of Agriculture Orville Freeman on foreign agricultural policy. In 1966, he was appointed Administrator of the department's International Agricultural Development Service. In early 1969, he left government to help establish the Overseas Development Council. In 1974, with support of the Rockefeller Brothers Fund, Lester Brown founded the Worldwatch Institute, the first research institute devoted to the analysis of global environmental issues. Brown has authored or coauthored 50 books and his works have appeared in some 40 languages. Among his earlier books are *Man, Land and Food*, *World Without Borders*, and *Building a Sustainable Society*. His 1995 book *Who Will Feed China?* challenged the official view of China’s food prospect, spawning hundreds of conferences and seminars. In May 2001, he founded the Earth Policy Institute to provide a vision and a road map for achieving an environmentally sustainable economy. In November 2001, he published *Eco-Economy: Building an Economy for the Earth*, and his most recent book is *World on the Edge*. He is the recipient of many prizes and awards, including 25 honorary degrees, a MacArthur Fellowship, the 1987 United Nations' Environment Prize, the 1989 World Wide Fund for Nature Gold Medal, and the 1994 Blue Planet Prize for "exceptional contributions to solving global environmental problems." More recently, he was nominated for membership in the Earth Hall of Fame Kyoto.

Douglas Erwin

Biodiversity: Past, Present, and Future

Both the press and some conservation biologists have claimed that we are currently in the midst of the sixth great mass extinction, equivalent to events that have punctuated the history of animal life over the past 540 million years. Such claims reflect a fundamental misunderstanding of the nature of the species upon which past mass extinctions have been recognized (geographically widespread, abundant, and readily fossilizable) versus the nature of many of those which have recently disappeared or are threatened (largely none of the above). That we are not currently in the midst of a great mass extinction is indeed fortunate, for mass extinctions are far more devastating than many realize, affecting not only species diversity, the most readily quantifiable type of biodiversity, but many other aspects of biodiversity as well. Although ecologists and evolutionary biologists have learned much about the structure of biodiversity, we lack a fundamental understanding of its causes, and consequently the tools to understand the evolutionary consequences of the ongoing loss of biodiversity.

Douglas Erwin is a Senior Scientist in the Department of Paleobiology at the National Museum of Natural History, and Chair of Faculty and Professor at the Santa Fe Institute. A paleobiologist and evolutionary biologist, his research has addressed the causes of two of the major biotic transitions of the past 600 million years, the Ediacaran-Cambrian explosion of animal life, and the end-Permian mass extinction. With Jim Valentine, he is the author of the forthcoming "The Cambrian Explosion: The Construction of Animal Biodiversity" (Roberts Publishing, 2012).

Richard Alley

Climate Change and Energy: Challenges and Opportunities

We rely heavily on energy use, dominated by finite fossil fuels. We have high scientific confidence, based on solid physics, that burning most of the remaining fossil-fuel resource and releasing the carbon dioxide will cause large and long-lasting climate changes. Studies of societal and economic impacts typically indicate that such large climate changes will make life notably more difficult for future generations, and a measured response starting soon is economically favorable. Uncertainties are substantial, but with larger or faster climate changes more likely than smaller or slower ones. Fortunately, sustainable energy resources are abundant, and extensive use can be achieved with existing technologies or logical extensions thereof, allowing the economically optimal shift away from fossil fuels.

Richard Alley is the Evan Pugh Professor of Geosciences and Associate of the Earth and Environmental Systems Institute at The Pennsylvania State University. He studies the great ice sheets to aid in prediction of future changes in climate and sea level, and has conducted three field seasons in Antarctica, eight in Greenland, and three in Alaska. He is a member of the US National Academy of Sciences and has received numerous honors including the Tyler Prize for Environmental Achievement, the Heinz Prize, the Revelle Medal of the American Geophysical Union, the Seligman Crystal of the International Glaciological Society, and the Schneider Award for Science Communication. Dr. Alley has served on many advisory panels, including chairing the National Research Council's Panel on Abrupt Climate Change, and participated in the UN Intergovernmental Panel on Climate Change and has provided requested advice to numerous government officials in multiple administrations. He is presenter for the PBS TV special on climate and energy *Earth: The Operators' Manual*, and author of the book. His popular account

of climate change and ice cores, *The Two-Mile Time Machine*, was Phi Beta Kappa's science book of the year in 2001.

Neva Goodwin

Labor's Declining Share and future Quality of Life

For the past two and a half centuries industrializing societies have enjoyed a trend in which technology, engineering, and resource discoveries steadily reduced the cost of energy and materials. As the costs of these inputs declined, the relative value of labor rose. This trend is often referred to as rising labor productivity: an hour of labor input was able to produce more and more output, measured both in bulk terms and in dollar value. There are strong reasons to believe that this trend is now due to be reversed: the price of energy and raw materials will begin to rise against the price of labor. This paper will consider a variety of ways that societies and individuals could respond to a decline in labor productivity. Hoped-for reductions in labor hours may be possible only for those who are willing to reduce their consumption of many energy- and materials-intensive products. The paper will especially consider the possible effects on, and responses of, women and family groups.

Neva Goodwin is Co-director of the Global Development And Environment Institute at Tufts University, where she is active in a variety of attempts to systematize and institutionalize an economic theory – “contextual economics” – that will have more relevance to contemporary real world concerns than does the dominant economic paradigm. Dr. Goodwin has edited more than a dozen books, and is the lead author of two introductory textbooks, *Microeconomics in Context* and *Macroeconomics in Context*. Over the past decade Dr. Goodwin led the creation of a digital “social science library” called *Frontier Thinking in Sustainable Development and Human Well-Being* which contains nearly 10,000 full bibliographic references and which is being distributed widely in 137 developing and transitional countries. She is on the boards of Ceres and Winrock International, and is co-chair of the board of the New Economics Institute. Dr. Goodwin is involved with efforts to motivate business to recognize social and ecological health as significant, long-term corporate goals. She seeks ways to translate an understanding of the economy in its full social and ecological contexts into action and policy. She also seeks a deeper theoretic understanding from exposure to on-the-ground experiments in alternative socio-economic institutional design.

Eva J. Pell

Eva J. Pell, Under Secretary for Science, joined the Smithsonian Institution in January 2010. She oversees the operations of eight museums and research centers located in the United States and Panama. Previously, she was Senior Vice President for Research and Dean of the Graduate School at Pennsylvania State University. Dr. Pell earned a B.S. in biology from City College of the City University of New York in 1968, and a Ph.D. in Plant Biology from Rutgers University in 1972. Dr. Pell started her career at Penn State in 1972 and was a professor in the department of Plant Pathology for more than 35 years. Her research focused on the impact of air pollutants on vegetation and her research spanned from the molecular to the ecophysiological. In recognition of leadership in her field in 2003, Dr. Pell was elected as a Fellow of the American Association for the Advancement of Science (AAAS). In her years as senior research officer and graduate dean, Dr. Pell served on numerous national committees and organizations, and spearheaded the development of six cross-disciplinary institutes that reported to her. In addition,

Dr. Pell was active in economic development and served on a number of Pennsylvania State boards; she was responsible for the Penn State Research and Technology Transfer Organization that connects Penn State researchers with industries in order to stimulate economic development. In 2011, the university recognized her contributions by naming a new building after her, the “Eva J. Pell Laboratory for Advance Biological Research”. Dr. Pell has served on panels and advisory boards for the EPA, the USDA, the Department of Commerce, and the NSF’s Biological Sciences Advisory Committee; and currently serves on the National Science and Technology’s Committee of Science and Committee on Environment, Natural Resources and Sustainability, and the Interagency Arctic Research Policy Committee.

G. Wayne Clough

Wayne Clough is the 12th Secretary of the Smithsonian Institution, the world’s largest museum and research complex. The Smithsonian includes 19 museums and galleries, 20 libraries, the National Zoo and nine research centers. Since becoming Secretary in July 2008, Clough has taken the Smithsonian in new directions. A comprehensive strategic plan—the first of its kind for the Smithsonian—creates a new framework for goals, enterprises and operations. The Smithsonian now focuses on four grand challenges—Unlocking the Mysteries of the Universe, Understanding and Sustaining a Biodiverse Planet, Valuing World Cultures, and Understanding the American Experience. Clough is responsible for an annual budget of \$1 billion with about 6,000 employees. As a federal trust, the Smithsonian receives about 70 percent of its funding from the federal government and generates funding from contributions and business activities such as museum shops. Since Clough became Secretary, more than 300 exhibitions have opened across the Smithsonian. He has overseen the opening of major permanent exhibitions, including the Star-Spangled Banner at the National Museum of American History; the Hall of Human Origins at the National Museum of Natural History; and the new wing at the National Air and Space Museum’s Udvar-Hazy Center. Before his appointment to the Smithsonian, Clough was president of the Georgia Institute of Technology for 14 years. He received his bachelor’s and master’s degrees in civil engineering from Georgia Tech in 1964 and 1965 and a doctorate in 1969 in civil engineering from the University of California, Berkeley. Clough was a member of the faculty at Duke University, Stanford University and Virginia Tech. He served as head of the department of civil engineering and dean of the College of Engineering at Virginia Tech and as provost at the University of Washington.

Ian Johnson

Ian Johnson is currently Chairman of the Commission for Land Use Change Ecosystems with GLOBE International and CEO of Idea Carbon, a London based consulting firm for emissions trading. He has been a long time advisor to the UNFCCC, a Member of the Swedish Commission on Climate Change and Development and served as Economist to the British Government. He has also acted as advisor to several governments, including Chile and the Netherlands. Johnson, a British national, was educated at the University of Wales, Harvard University, and the University of Sussex. He spent over twenty-five years with the World Bank. He held the post of Vice President for Sustainable Development for eight years, responsible for policy, strategy and oversight of the World Bank’s programs in environment, social policy and agriculture and rural development. Since April 1st 2010, Ian Johnson works as Secretary General of the Club of Rome in Winterthur, Switzerland.

Katherine Lorenz

Katherine Lorenz was elected President of the Cynthia and George Mitchell Foundation in January 2011. Before taking on this role, she served nearly three years as Deputy Director for the Institute for Philanthropy, whose mission is to increase effective philanthropy in the UK and internationally, and she now sits on the Institute's Board of Directors. Prior to her work with the Institute for Philanthropy, Ms. Lorenz lived and worked in Oaxaca, Mexico for nearly six years where she co-founded Puente a la Salud Comunitaria, a non-profit organization working to eradicate malnutrition and advance food sovereignty in rural Oaxaca through the integration of amaranth into the local diet. She continues to be highly involved with Puente's work as an active Board Member. Before founding Puente, Lorenz spent two summers living and working in rural, poor communities in Latin America with the volunteer program Amigos de las Américas and later served on their Program Committee and as a trustee of the Foundation for Amigos de las Américas. Additionally, she currently serves on the Boards of Directors of the Endowment for Regional Sustainability Science and the Amaranth Institute and formerly was a Board Member of Resource Generation. Along with her family, Ms. Lorenz is a member of the Global Philanthropists Circle (through the Synergos Institute) and is an active participant in the GPC Next Generation subgroup. She sits on the Council on Foundations Committee on Family Philanthropy and serves on their 2012 Family Philanthropy Conference Planning Task Force. Ms. Lorenz holds a B.A. in Economics and Spanish from Davidson College.

Roberto Peccei

Roberto D. Peccei is a Professor of Physics and Astronomy at UCLA, a member of the Executive Committee of the Club of Rome, and President of the Fondazione Aurelio Peccei. As a physicist his principal interests lie in the interface between particle physics and cosmology, and as a member of the Club of Rome he is broadly interested in the kind of economics that need to be developed to ensure a sustainable world. Peccei was born in Italy, completed his secondary school in Argentina, and came to the United States in 1958 to pursue university studies in physics. He obtained a B.S. from MIT in 1962, and M.S. from NYU in 1964 and a Ph.D. from MIT in 1969. After a brief period of postdoctoral work at the University of Washington, he joined the faculty of Stanford University in 1971. In 1978, he returned to Europe as a staff member of the Max Planck Institute in Munich, Germany. He joined the Deutsches Elektron Synchrotron (DESY) Laboratory in Hamburg, Germany, as the Head of the Theoretical Group in 1984. He returned to the United States in 1989, joining the faculty of the Department of Physics at UCLA. Soon thereafter, he became Chair of the Department, a position he held until becoming Dean of the Division of Physical Sciences of the College of Letters and Sciences in 1994. For the last decade, he was Vice Chancellor for Research at UCLA, overseeing all research programs in the university. In July of 2010, he returned to the faculty. Peccei was the Schroedinger Professor at the University of Vienna in 1983, the Boris Jacobsohn Lecturer at the University of Washington in 1986, the Phi Beta Kappa Lecturer at UCLA and the Emilio Segre Professor at the University of Tel Aviv in 1992, and delivered the first Abdus Salam Memorial Lecture in Pakistan in 1997. He has served on numerous advisory boards both in Europe and the United States in the last 25 years. He presently also serves as the Chair of the External Advisory Board of the Institute for the Physics and Mathematics of the Universe in Japan. He is a Fellow of the American Physical Society, the Institute of Physics in the United Kingdom, the American Association for the Advancement of Science, and the World Academy of Arts and Sciences.

W. John Kress

W. John Kress is the Director of the Consortium for Understanding and Sustaining a Biodiverse Planet at the Smithsonian as well as curator and research scientist with the Department of Botany at the National Museum of Natural History. He was born in Illinois and received his education at Harvard University (B. A. 1975) and Duke University (Ph. D. 1981) where he studied tropical biology, ethnobotany, evolution, and plant systematics. Among his many scientific and popular papers on tropical biology are his books entitled *Heliconia: An Identification Guide*, *Heliconias – Las Lamaradas de la Selva Colombiana*, *A New Century of Biology* (with Gary Barrett), *A Checklist of the Trees, Shrubs, Herbs, and Climbers of Myanmar*, and *Plant Conservation – A Natural History Approach* (with Gary Krupnick). His book *The Weeping Goldsmith* (Abbeville Press) describes his experiences exploring for plants in the isolated country of Myanmar. Dr. Kress is also interested in the intersection of science and art. To this end he has published two original art projects: one called *Botanica Magnifica* (Abbeville Press) with photographer Jonathan Singer, and the second a book on plant evolution, entitled *The Art of Plant Evolution* (Kew Publications), with Dr. Shirley Sherwood using contemporary botanical art to illustrate the diversity of the plant world. He is a Fellow of the American Association for the Advancement of Science and currently Executive Director of the Association for Tropical Biology and Conservation. Dr. Kress is an Adjunct Professor of Biology at the Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences in Yunnan.