

Graciela Chichilnisky  
Curriculum Vitae  
November 2018

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Columbia University  
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Academic Positions:

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|-------------|---|
| 2018        | Professor of Economics and Statistics at Columbia University, New York  |
| 2015 -      | Visiting Professor of Economics Stanford University and Stanford Institute of Economic Policy Research (SIEPR)  |
| 2011- 2012  | Distinguished Visiting Professor, Beijing Normal University, Beijing, China   |
| 2010 -      | Distinguished Guest Professor, Nankai University, China   |
| 2007 - 2010 | International Monetary Fund Institute, Washington DC, June, 2007  |
| 2007 - 2012 | Sir Louis Matheson Distinguished Professor, Monash University, Melbourne, Australia   |
| 1998 -      | Director, Columbia Consortium for Risk Management (CCRM)  |
| 1996, 2002  | Visiting Academic, Deakin University, Melbourne, Australia, August 1996, July, 2002   |
| 1996        | Visiting Professor, Ecole des Hautes Etudes en Sciences Sociales and University of Paris X, Nanterre, June-July, 1996   |
| 1995 - 2008 | UNESCO Professor of Mathematics and Economics   |
| 1994 -      | Director, Program on Information and Resources, Columbia University (PIR)   |
| 1994 - 1995 | Salinbemi Chair, Universita di Siena, Italy   |
| 1993 - 1994 | Visiting Professor of Economics and Operations Research, Department of Economics, Department of Operations Research, and Institute for International Studies, Stanford University |

- 1993, 1994    Profesor Visitante, Universidad Catolica de Buenos Aires, Argentina, August, 1993, April, 1994
- 1991 - 1993    Visiting Professor, Stanford Institute for Theoretical Economics (SITE), Stanford University, Summers of 1991, 1992, 1993, and 1994
- 1991, 1992    Visiting Professor, University of Siena, Italy, Summer Terms of 1991, 1992, and 1993
- 1984 - 1985    Professeur Missionaire, Universite des Antilles et de la Guyane, Short Term visits, Spring terms
- 1983 - 1984    Visiting Professor, Institute of Mathematics and its Applications, University of Minnesota
- 1980 - 1981    Keynes Chair in Economics, University of Essex, United Kingdom
- 1979 -        Professor of Economics, Columbia University, Tenured since 1979
- 1978         Fellow, Harvard Institute of International Development, Harvard University
- 1977 - 1980    Associate Professor of Economics, Columbia University, Tenured since 1979
- 1977 - 1978    Lecturer, Department of Economics, Harvard University
- 1977         Postdoctoral Fellow, Harvard University

Professional Positions:

- 2018 -        Member of the editorial board of Economics at Disasters and Climate Change
- 2018 -        Advisor/Board member to H.S.H. Prince Albert II of Monaco – Transition Forum
- 2014 -        Associate Editor, International Journal of Economics and Finance
- 2013 -        Board Member, American Renewable Energy Day
- 2013 -        Board Member, WIFO-Monatsbericht Editorial Board, Vienna, Austria
- 2012 -        Member of Scientific Advisory Board of the Austrian Institute of Economics Research, Vienna, Austria
- 2012 -        Board Member, Ethical Markets Media, Florida

- 2011 - Member, Board of Advisors, The Capital Institute, New York
- 2011 - Executive Advisory Board, The Columbia Institute for Tele-Information (CITI) at Columbia Business School
- 2011 - Guest Editor, Economic Theory: Special Issue on Economic Theory and the Global Environment. Vol. 49, No. 2, February, 2012.
- 2010- 2012 Referee for the Annual Conference of the European Association of Environmental and Resource Economists
- 2009 - Editor for the Journal Environmental Economics
- 2009 - Member, Board of Directors of Global Thermostat
- 2006 - Editorial Board, Scientific Journal International
- 2002 - Editorial Board, SocioTopology, VNTL Publishers
- 2002 - Editorial Board, Nonlinear Analysis, Pergamon Press
- 2002 Member of Board of Trustees, Mediterranean College, Athens, Greece
- 2001 - Member of Editorial Board of Risk Decision and Policy
- 2001 - Editorial Advisory Board, Arthaniti, Department of Economics, University of Calcutta, India
- 1999 - 2000 National Selection Committee, Fulbright Fellows, USA
- 1999 - Member of Advisory Board of Metroeconomica
- 1996 - 1998 US Lead Author, Intergovernmental Panel on Climate Change (IPCC)
- 1999 - Member of Board of Editors, Review of Development Economics
- 1998 - Member of the Editorial Advisory Council, Pacific Economic Review
- 1997 Advisor, United Nations Framework Convention on Climate Change, Lead Negotiator of Kyoto Protocol, EU Committee member and Advisor to Ambassador Raul Estrada Oyuela. In charge of writing carbon market into Kyoto Protocol
- 1997 Member of Board of Editors, Journal of Economic Integration, Institute for International Economics Sejong Institution, Seoul, Korea
- 1997 - Member of Editorial Board, Advances in Applied Mathematics, MIT, Cambridge, Massachusetts

- 1997 - Member of Editorial Board, Non Linear World, International Federation of Nonlinear Analysts (IFDA)
- 1997 - Member of the Technical and Scientific Advisory Committee for the International Program on Research and Development, Ministry of Environment, Water Resources and Legal Amazon, Brazil
- 1996 - 2000 Editorial Board, International Review of Economics and Finance JAI Press Inc, 55 Old Post Road No 2, PO Box 1678, Greenwich, Connecticut 06836-1678
- 1996 - 1997 Member of the Second National Forum on Biodiversity, National Academy of Sciences, Washington, DC
- 1996 - Editorial Board, Risk, Decision & Policy Chapman & Hall, 2-6 Boundary Row, London SE1 8HN, United Kingdom
- 1996 - Member of the Editorial Advisory Council, Pacific Economic Review, Blackwell Publishers, Oxford, United Kingdom and Cambridge, Massachusetts
- 1994 - Member, Advisory Board, Metroeconomica, Blackwell Publishers Journal, PO Box 805, 108 Cowley Road, Oxford OX4 1FH, United Kingdom
- 1993 - 1996 Contributing Author and Advisor, Intergovernmental Panel on Climate Change (IPCC)
- 1993 - 1996 Editorial Board, Economics Letters Elsevier Science SA, PO Box 564, CH-1001, Lausanne, Switzerland
- 1993 - 1994 Chair, Organizing Committee, Conference and Workshop on Geometry, Topology and Markets, The Fields Institute of Mathematical Sciences, Canada
- 1993 - 1994 Member, Program Committee, Econometric Society North American Summer Meetings, Toronto, Canada
- 1993 - Editorial Board, Journal of International Trade and Economic Development, Routledge, 11 New Fetter Lane, London EC4P 4EE, United Kingdom
- 1993 - Editorial Board, Journal of International and Comparative Economics Physica-Verlag, Tiegarten Strasse 17, D-69121, Heidelberg, Germany
- 1991 - 1996 Member of the Council of Social Choice and Welfare Society, Editorial Board, Social Choice and Welfare, Springer-Verlag, Postfach 31.13.40, D-10643, Berlin, Germany

- 1985 - Editorial Board, International Journal of Development Planning Literature  
Spellbound Publications PVT LTC 177/28, Model Town, Delhi Road,  
Medical Mor, Rohtak 124001, India
- 1984 - 1996 Editorial Board, Social Choice and Welfare, Springer-Verlag, Postfach  
31.13.40, D-10643, Berlin, Germany
- 1981 - 1986 Editorial Board, Review of Economic Studies, Blackwell Publishers,  
108 Cowley Road, Oxford, OX4 1JF, United Kingdom
- 1980 - 1985 Editorial Board, Advances in Applied Mathematics Academic Press, 6277  
Sea Harbor Drive, Orlando, Florida 32887-4900
- 1976 - 1986 Associate Editor, Journal of Development Economics, Elsevier Science,  
Amsterdam, The Netherlands

Professional Associations:

Member of the American Mathematical Society  
Member of the American Economic Association  
Member of the American Statistical Association  
Member of the American Chemical Society

Listed In:

“Great Immigrants - Great Americans” New York Carnegie Foundation NYTimes A5 7/4/17  
“Great Minds of the 21st Century” 2008 – 2009  
1000 Outstanding Scholars of the 21st Century  
2000 Outstanding Intellectuals of the 21st Century  
Dictionary of International Biography  
Men of Achievement  
Outstanding People of the 21st Century  
Strathmore’s Who’s Who  
Who is Who in America  
Who is Who in American Education  
Who is Who in the East  
Who is Who in the World  
Who is Who of Intellectuals  
Who is Who of Science and Engineering  
Top 10 Most Influential Latinos in USA – Hispanic Business Magazine 2007

Education:

High School: Instituto Nacional de Lenguas Vivas, Buenos Aires, Argentina

No undergraduate studies

PhD Program in Mathematics, Massachusetts Institute of Technology

PhD Program in Mathematics, University of California, Berkeley Degrees: MA, PhD in Mathematics, Thesis title: Lifting Action on Spin Manifolds

PhD Adviser: Professor Jerrold Marsden

PhD Program in Economics, University of California, Berkeley Degree: PhD in Economics, Thesis title: Manifolds on Preferences and Equilibria

PhD Adviser: Professor Gerard Debreu, Nobel Laureate in Economics

#### Honors, Awards, and Selected Presentations:

- 2018            “Albert Nelson Marquis Lifetime Achievement Award” 2017-2018 recipient (Featured in the Wall Street Journal 7/15/2018)
- 2017            “Great Immigrant Great American” Award Carnegie Corporation NY (Featured in New York Times, Page 5 7/4/2017)
- 2015            “2015 CEO of the Year Award”, Yale University Club, New York, IAIR, April 16
- 2015            Keynote Speaker “Rethinking Capitalism: Sustainability with Graciela Chichilnisky.” The Buchanan Institute, Edinburgh, Scotland, May 14, 2015
- 2014            “Global Leadership” Prize, American Renewable Energy Institute Aspen, Colorado, August 10 2014
- 2014            Opening Keynote Address “Avoiding Extinction.” Indian Institute for Foreign Trade (IIFT) New Delhi, India, December 13-19, 2014
- 2014            Keynote Speaker “Avoiding Extinction.” LUCID, Jazz Club 85 Ave A, New York, NY October 15, 2014
- 2014            Keynote Speaker “Avoiding Extinction” Closing the Carbon Cycle for Sustainability. I-SUP conference Antwerp Belgium, September 1-3, 2014
- 2014            Keynote Address “Avoiding Extinction.” American Renewable Energy Day (AREDAY) Aspen, Colorado, August 10-13 2014
- 2014            Keynote Speaker “International Seminar on Green Economics: the Road to a Balanced & Healthy Economy”, Meghalaya Economic Association, in collaboration with the Indian Institute of Management, Shillong, India, August 7, 2014

- 2014 Keynote Speaker “Avoiding Extinction.” annual conference Green Economics Institute, Oxford University, Trinity College July 2014
- 2014 Opening Keynote Speaker “Green Capitalism: The End of Fear”, EuroMoney Conference on Sustainable & Responsible Capital Markets: Investing & Financing for a Better Future, The Pierre Hotel, New York, March 12, 2014
- 2013 Plenary Keynote Speaker “The Foundations of Probability with Black Swans”. International Congress of Mathematicians Annual Meeting, University of New South Wales, Australia, December 11, 2013
- 2013 Presentation “CO2 Capture: A Clean and Sustainable Alternative Applicable to Bioenergy”. Bio-energy Conference of the Americas, Medellin, Colombia, October 10-11, 2013
- 2013 “Avoiding Extinction” TEDx Talk, National Technical University NTU Buenos Aires, Argentina, May 4, 2013
- 2013 Board Member American Renewable Energy Institute. Aspen Colorado, May 2, 2013
- 2013 Keynote Speaker “The Economic Future of Europe”, In Modeling Growth and Socio-Ecological Transition Austrian Institute of Economic Research (WIFO), Vienna, Austria, March 12-14
- 2012 Plenary Talk “The Foundations of Probability & Statistics with Black Swans”. Annual International Meeting of the Mathematical Society & the Canadian Mathematical Society, Montreal, Canada, December 8-10
- 2012 Keynote Speaker “Avoiding Extinction: Air Capture of CO<sub>2</sub>” Air Capture Seminar, UK Institute of Mechanical Engineers, London, October 16
- 2012 “Avoiding Extinction”. Invited presentation to Department of Engineering Sciences, University of Oxford, Oxford, UK, October 15
- 2012 Speaker, “Why Economists Disagree.” Helix Center Roundtable, Helix Psychoanalytic Society Institute, New York, October 13
- 2012 Panelist, Blouin Creative Leadership Summit. Louise Blouin Foundation, New York, NY, September 20-21
- 2012 Speaker and Moderator, European Association of Environmental and Resource Economists (EAERE), the Fondazione Eni Enrico Mattei (FEEM) and the University of Catania’s (UNICT) 2012 Belpasso International Summer School on Environmental and Resource Economics, Belpasso, Sicily, Italy, September 2-8

- 2012 Keynote Speaker, “Sex and the Ivy League” North Shore Branch of the American Association of University Women (AAUW) Legal Action Fund luncheon, Great Neck, NY, April 26
- 2012 Invited Speaker, “Markets with Black Swans”, Duncan Foley Festschrift, New School, New York City, NY. April 20<sup>th</sup>
- 2012 Keynote Speaker, “Carbon Capture and Use initiatives in US and Europe”, Calgary Economic Development, Calgary, Alberta, Canada, March 9
- 2012 Keynote Speaker, “The Kyoto Protocol Carbon Market: Reflections by its Author” Confluence Philanthropy Practitioners Meeting, Cavallo Point, Sausalito, CA, January 26.
- 2011 Major Keynote Speaker “History and Future of Economics and Its Methodology,” Reform of Economics Workshop at Mansfield College, Oxford, United Kingdom, November 19
- 2011 Speaker at “Calgary Clean Tech Summit,” Global Clean Energy Congress (GCEC), Calgary, Canada, November 2
- 2011 Speaker “Virgin Earth Challenge Conference,” Pricewaterhouse Coopers LLP, London, United Kingdom, October 26
- 2011 Keynote Speaker, “Global Efforts to Address Climate Change,” Sci-Fest Presentation, St. Louis Science Center, St. Louis, Missouri, October 22
- 2011 Presentation, “The Global Commons,” Center in Political Economy Seminar Series, Washington University, St. Louis, Missouri, October 21
- 2011 Keynote Speech “Avoiding Extinction”, at Back2Black Festival, Rio de Janeiro, Brazil, August 27
- 2011 Invited Presentation “Carbon Negative Technology” at American Renewable Energy Day, Aspen, Colorado, August 18-21
- 2011 Keynote Speech “A Brief History of Western Economics”, New York University, June 15.
- 2011 Keynote Speech Plenary Panel of CO2 Utilization Workshop, UC Berkeley, California, February 17-18
- 2010 Panelist “Reality Check – Information & Communication Technologies for Development: what is holding us back,” United Nations, Yas Marina Circuit, Yas Island, Abu Dhabi, United Arab Emirates, December 5
- 2010 Panel Moderator “Broadband Networks and Smart Grids at the Crossroad between ICT and Energy,” CITI Conference, Columbia University, New York, December 3



- 2010 Panelist, “Second Encounter: The Challenge of Perserving Life,”  
Encuentro en Mexico: Construyendo Futuros, Nonoalco-Tlatelolco,  
Mexico, October 20.
- 2010 Keynote Speaker Financial Times Conference on Sustainable Banking  
Renaissance Chancery Court Hotel, London, United Kingdom, June 3
- 2010 Keynote Speaker “Sex and the Ivy League” American Association of  
University Women of New Jersey Annual, Forsgate Country Club, New  
Jersey, April 17
- 2010 Headline speaker "Names Not Numbers" Second annual Editorial  
Intelligence symposium known as ‘British Davos’ – Rock Royalty,  
Business Leaders and Global Gurus, Portmeirion, North Wales, February  
26-28
- 2010 Special lecture “What Happened in Copenhagen” Alcazar, Marseille  
Public Library, Organized by Université de la Méditerranée, Greqam-  
Idep and cosponsored by Université Montpellier – LAMETA, Marseille,  
France, February 5
- 2009 Main Keynote Address, “Saving Kyoto: Copenhagen: Do or Die” at the  
American Hellenic Chamber of Commerce – The Greek Economy  
Conference, Athens, Greece, November 30
- 2009 Opening Keynote Speech, “Preparing for Copenhagen: Saving Kyoto” at  
The Green Economics Institute conference on “Greening the Economy,”  
Oxford University Club, Oxford University, Oxford, UK. November 28, 2009
- 2009 Keynote Address and Organizer "The Rising Tide at Copenhagen: A Win-  
Win Solution for Industrialized and Developing Nations” at United Nations  
Headquarters, New York, forum on "Developing Technical and Financial  
Solutions for the Survival of Small Island Developing States (SIDS):  
Looking Beyond Copenhagen" Cosponsored by the Alliance of Small Island  
States (AOSIS) and the Columbia Consortium for Risk Management  
(CCRM), November 12
- 2009 Keynote Speech “The Gender Gap” at 24orMore International  
Conference on Increasing the Labour Participation of Women, Warehouse  
de Zwijger, Amsterdam, The Netherlands, November 5
- 2009 Keynote Speech The Aspen Institute – Water Planted Dialogue, Wye  
River Conference Center, Queenstown, Maryland, October 20-23
- 2009 Keynote Speaker Graduate Institute for International and Development  
Studies Colloquium on Global Environmental Change and Its Impact on  
Human Societies, Geneva, Switzerland, October 8-9

- 2009 Public Lecture “Saving Kyoto” at Festival of Ideas, The Watershed Media Centre, Bristol, United Kingdom, October, 2
- 2009 World Economic Forum Global Risk Brainstorming Session, The Gore Hotel, London, United Kingdom, October 1
- 2009 Public Lecture “Saving Kyoto: Copenhagen and Beyond,” Royal Society of Arts (RSA), London, United Kingdom, October 1
- 2009 Keynote Speaker “Climate Change: Are we headed for a New Cold War?,” London School of Economics (LSE), Old Theatre, Old Building, London, United Kingdom, October 1
- 2009 Keynote Lecture “What is Sustainability?” INFER Workshop – Sustainable Public Finances in a Turbulent Global Economy, Klagenfurt University, Klagenfurt, Austria, September 29
- 2009 Keynote Speech “Green Economics: Can it Avert Another Cold War” at 4<sup>th</sup> Annual Green Economics Conference, Mansfield College, Oxford University, Oxford, UK July 31
- 2009 Keynote Speech “How to Overcome the China – US Impasse in the Global Climate Negotiations” at Expert Meeting on Trade and Climate Change: Trade and Investment Opportunities and Challenges under the Clean Development Mechanism (CDM), Geneva, Switzerland, April 27-29
- 2009 Keynote Speaker “Beyond the Global Divide: From Basic Needs to the Knowledge Revolution,” Gosnell Lecture Series, Golisano Auditorium, Rochester Institute of Technology, College of Liberal Arts, Rochester, New York, April 14
- 2009 Keynote Speaker and Organizer of one day event at US Congress, US Senate “Sustainable Energy and Environment Caucus” with participation 37 members of the House of Representatives, Cannon Building, Capitol Hill, Washington DC, March 31
- 2009 Panelist, “Environment & Development”, Energy Impact Conference, Geneva, Switzerland, March 16-17
- 2008 Keynote Address to Members of Australian Parliament on “Emissions Trading and Climate Change at the House of Parliament,” Melbourne, Australia, November 12
- 2008 Keynote Speech “Extreme Uncertainty & the Value of Life,” Seminar Series in Economics at Greqam University of Aix-Marseille, December 15
- 2008 Keynote Speech “Sustainable Development – Cost Benefit Analysis

- Balancing the Present and the Future,” University of Montpellier,  
December 10
- 2008 Keynote Speech “Tecnologia y el Sistema Productivo,” 8th Congreso de  
Economía, Buenos Aires, Argentina, November 19
- 2008 Keynote Speech “Averting Climate Change: New Financial Mechanisms and  
Technologies’, Governance, Organizations and Regional Development  
Conference, Deakin University, Melbourne, Australia, August 1
- 2008 Keynote Speech “Financial Mechanisms and New Technologies:  
Bridging the Gap between Industrial and Developing Nations in the  
Global Climate Negotiations”, Monash University, Workshop on  
Emissions Trading for Australia, August 1
- 2008 Keynote Speech ‘Energy Security and Climate Change: Financial  
Mechanisms and New Technologies”, Fundacion Rafael Del Pino, Rafael  
Calvo 39, 28010, Madrid, Spain, July 8
- 2008 Keynote Speech “Global Financial Mechanisms for International  
Payments for Ecosystem Services: Watersheds, Forests, DNA &  
Indigenous Knowledge, and the Global Spectrum”, First UNEP Working  
Group Meeting on Economics, Kenya, May 6-8
- 2008 Keynote Speech “The Carbon Market, Past and Future”, Carbon  
Finance North America 2008, New York, June 4-6
- 2008 Radio Interview “Understanding Carbon Markets,” The Sound Of Ideas,  
hosted by Dan Moulthrop, National Public Radio, Cleveland, Ohio, June  
4
- 2008 Keynote Speech “Regional Development & Catastrophic Risks of  
Natural Events,” Asamblea Annual de Economistas de Puerto Rico,  
Puerto Rico, August 22
- 2008 Keynote Speech Global Convention on Climate Change, Palampur, India  
HP, May 30-June 1
- 2008 Keynote Speech COP9 Convention of Biological Diversity, Bonn,  
Germany, May 24
- 2007 Institute Environment Seminar Fiscal Affairs Department, International  
Monetary Fund, “Policies to Counteract Global Warming Financial  
Markets Can Overcome the China US Impasse Market,” October
- 2007 IMF Presentation “Climate Change: Financial Innovation And The  
Carbon Market,” IMF, Washington DC, June

- 2007 Organizer & Bi-partisan Briefing in US Congress “Energy Security and Climate Change in the Americas,” Cannon House Building, Capitol Hill, Washington DC, May 23
- 2007 Senior Advisor to President Robert Shelton, University of Arizona
- 2007 “Speaking Out For Justice” Award from Feminists Against Academic Discrimination (FAAD)
- 2006, 2007 Co-Chair of Latin Economic Forum at the United Nations Headquarters, New York, April 2006, September 2007
- 2006 Invited Presentation “The Topology of Fear,” University of Kansas, Laurence, Kansas. September 18-20
- 2006 Invited Presentation, “The Limits of Econometrics: Non-Parametric Estimation in Hilbert Spaces,” (Organized by Prof. Peter Phillips, Yale Univ., in honor of Prof. Rex Bergstrom), University of Essex, Colchester, United Kingdom, May 24-25
- 2006 Special Advisor, President Oscar Arias, Costa Rica
- 2006 Selected Top Ten Most Influential Latinos in the US, Hispanic Business Magazine
- 2006 Program Committee of the 3rd World Congress of Environmental Economists, Kyoto, Japan, July 3-7
- 2006 Special Advisor, Plenary of the World Federation for United Nations Associations (WFUNA), July
- 2006 – 2012 Elected Member of Columbia University Faculty Senate, July
- 2006 Senior Advisor Member of Board of Advisors, Flandrau Science Center, University of Arizona
- 2006 Executive Director, Global Education, European American Women Council (EAWC)
- 2006 Keynote Speaker (with Finn Kydland, 2004 Nobel Laureate in Economics), Global Finance and Latin America: Financial Innovation and the Kyoto Protocol, Global Finance Conference, Rio de Janeiro, Brazil, April 26-27
- 2006 Co-Chair Second Annual United Nations Forum on Latin America, United Nations Headquarters, New York City, New York, April 19-20
- 2006 Invited Lecture “Science and the Division of Labor,” City University of Hong Kong Department of Economics

- 2006 Invited Lecture “Beyond the Global Divide: From Basic Needs to the Knowledge Revolution,” Chinese University of Hong Kong MBA Program, China, March
- 2006 Invited Lecture “Global Finance and the Kyoto Protocol,” Chinese University of Hong Kong Departments of Economics and Business, China, March
- 2005 Member of the Social Science Research Council Group on Privatizing Risk, and Invited Speaker at the Center for American Progress, Washington DC, December
- 2005 Invited Lecture, “Axioms of Choice and the Equity Premium Puzzle,” Mathematics Finance Seminar, Courant Institute for Mathematical Sciences, New York University, New York, October
- 2005 Keynote Speaker, “Axioms of Choice and Rare Events,” General Equilibrium Conference in Honor of Gerard Debreu (Nobel Laureate in Economics), University of California at Berkeley, California, October
- 2005 Keynote Speaker, “The Gender Gap,” International School for Economic Research (ISER), University of Siena, Italy, July 3-4
- 2005 Chair and Keynote Speaker (with Mary Robinson, former President of Ireland) on Globalization of Finance and Europe, 12th Annual Global Finance Conference, Trinity College, Dublin, June 27-29
- 2005 Selected As Leading Thinker, Kiel Institute’s Leading Thinkers in Global Economics Affairs, Kiel, Germany, June 24-25
- 2005 Keynote Speaker, “Beyond the Global Divide,” International Conference on Business Management and Economics in a Changing World, Yasar University, Turkey, June 16-19
- 2005 Invited to deliver First Lecture in Honor of Gerard Debreu (Nobel Laureate in Economics), General Equilibrium Workshop, University of Zurich, Switzerland, May 21-22
- 2005 Invited Seminar Speaker, “Beyond the Global Divide: From Basic Needs to the Knowledge Revolution,” Ecole Polytechnique, Institute du Développement Durable et des Relations Internationales (IDDRI), Paris, May 17
- 2005 Executive Director, Global Education, European American Women Council (EAWC)
- 2005 Member, Villa Mondragone Association, Rome, Italy

- 2005 - 2007    Trustee, Mediterranean College, Athens, Greece
- 2004            Invited presentation, “Sex and the Ivy League,” American Association of University Women (AAUW) and the Florida Women Lawyers Association, Miami, Florida, November 21
- 2004            Invited Seminar, Department of Agricultural and Resource Economics, University of California at Davis, California, October 15
- 2004            Invited Address, “Volatility and the Knowledge Economy,” Meeting in Honor of David Cass, Wharton School, University of Pennsylvania, Pennsylvania, October 10
- 2004            Presentation on Global Network of Science Centers and Job Training to the Executive Board of Directors, Flandrau Science Center, University of Arizona, Arizona, September 20
- 2004            Presentation to Radio Program Straighttalk, National Public Radio, Miami, Florida, USA
- 2004            Senior Advisor, Flandrau Science Center, University of Arizona, Arizona
- 2004            Keynote Speaker, Special Address to the Florida Association of University Women and the Florida Women Lawyers Association, Miami, Florida, October 3
- 2004            Keynote Speaker, International Conference on Economics of Sustainable Forest Management, University of Toronto, Canada
- 2004            Invited Speaker, Conference in Honor of Dave Cass, University of Pennsylvania Department of Economics, October 8-10
- 2004            Invited Speaker, Workshop of Time Preferences (organized by Professor Karl Vind), University of Copenhagen, Denmark, May 21-23
- 2004            Keynote Speaker, “Sex and the Ivy League,” Florida State Convention of American Association of University Women (AAUW), Orlando, Florida, April 30-May 2
- 2004            Invited Address, “The Greening of Bretton Woods,” Symposium of Environmental Policies in Decentralized Governmental Systems: A Blueprint for Optimal Governance, Porto Coute Ricerche Center, Sardinia, Italy, March 17-20
- 2004            Invited Address, “The Mathematics of Diversity,” Brown Symposium for Undergraduates in Mathematical Sciences (SUMS) sponsored by National Science Foundation, Brown University Department of Mathematics, February 28

- 2004 Invited Address, “Sex and the Ivy League,” Women in Science and Engineering (WiSE), Brown University, February 27
- 2004 Panelist, United Nations Panel of Women Leaders, United Nations, New York, March 8-9
- 2003 Keynote Lecture, Twelfth International Colloquium on Numerical Analysis and Computer Sciences with Applications, Plovdiv, Bulgaria, August 12-17
- 2003 Keynote Speaker, Columbia University & Faculty Women, New York State Convention, American Association of University Women (AAUW), Islandia, New York, April 25-27
- 2003 Keynote Speaker, Columbia University & Faculty Women, Pennsylvania State Convention, American Association of University Women (AAUW), State College, Pennsylvania, April 4-6
- 2003 Special Lecturer, Global Environment and the World Economy for the course “Science and Society,” Department of Earth and Environmental Sciences, Columbia University, New York, April 28
- 2003 Keynote Speaker, Five Lectures on International Markets, Biosphere and Society to a group of Scandinavian Universities, University of Southern Denmark Department of Environmental and Business Economics, Denmark, March 14-18
- 2002 Invited Speaker, University of Michigan – Ann Arbor Department of Economics, October 31
- 2002 Invited Speaker for the graduate course “Earth-Human Systems Department of Earth and Environmental Sciences,” Columbia University, New York, Fall
- 2002 Presentation at Trade Execution Congress, Crowne Plaza, New York City, New York, April 15-16
- 2002 Invited Lecturer, Organizing Committee of the Eleventh International Colloquium on Numerical Analysis and Computer Science with Applications, Sofia, Bulgaria, August 12-17
- 2002 Invited Professor, “Globalization and the Environment,” Summer School, University of Siena, Italy, June 16-21
- 2002 Invited Lecturer and Visiting Academic, Deakin University, Australia, July
- 2002 Invited Lecturer, University of Wollongong, Australia, August

- 2002 Invited Lecturer, Australian National University, Australia, August
- 2001 Chairman, The Enhanced Indexing Summit (Organized by The Institute for International Research), San Diego, California, October 15-17
- 2001 Guest Speaker, “New Risk Instruments for Global Markets,” Forum on Operational Risk Management (Organized by The Institute for International Research), New York City, New York, July 30-31
- 2001 Invited Speaker, “Exploring Strategies and Technologies Poised to Catapult the Securities Industry to ‘T+0,’” Straight Through Processing Forum (Organized by The Institute for International Research), New York City, New York, June 25-26
- 2001 Keynote Speaker, “The Economic Value of the Earth Resources” (published in *The Biodiversity Crisis Losing What Counts*, New York Press, 2001) *The Biodiversity Crisis*, University of Toronto, Canada
- 2001 Chairman and Organizer, International Conference Catastrophic Environmental Risks, 2001, Fields Institute for Mathematical Sciences, University of Toronto, Canada, Presentation published as *An Axiomatic Approach to Choice under Uncertainty in Topology and Social Choice*
- 2000 Invited Lecturer, “Hedging Chaotic Risks,” Università degli Studi di Roma Department of Mathematics, La Sapienza, Italy, October
- 2000 Columbia Center for Risk Management Chaired Board Meeting of Reinsurance Companies Supporting the Columbia Center for Risk Management (Karaindros Marine Hull, LaSalle Ltd, Wills Faber, Renaissance Re, Centre Insurance), and Mini Course on Risk Management, Columbia University, New York, August 3
- 2000 Chair and Organizer, The Green Hand, Are Efficient Markets the Path to Sustainable Development?, Reuters Forum, Columbia University Graduate School of Journalism, New York, May 3
- 1999 Keynote Address, XII World Congress of the International Economics Association, Buenos Aires, August 23-27
- 1999 Keynote Address, “General Equilibrium: Problems, Prospects, and Alternatives,” 12th Workshop of the International School of Economic Research, Siena, Italy, July
- 1999 Three Distinguished Lectures (Pegram Lectures), Biosphere and Society, Brookhaven National Laboratory, Brookhaven, Long Island, New York. March 12, 15, and 17



- 1998 Keynote Address, “Advances in Emissions Trading,” Third International Symposium on Global Accords for Sustainable Development, Massachusetts Institute of Technology, Cambridge, Massachusetts. Sept 4
- 1998 National Academy of Sciences Public Lecture on Biosphere and Society, June
- 1998 Presentation to the US Congress Technology Committee, “Emissions Trading and Economics Efficiency,” White House, Washington DC, June
- 1998 Keynote Address, “Clean and Sustainable Industrial Development,” Presentation to the General Assembly of UNIDO Meeting on Industrialization in the 21st Century, Vienna, May
- 1998 Organized and Led the International Conference “Kyoto to Buenos Aires: Technology Transfer and Emissions Trading” at Columbia Earth Institute, Italian Academy, New York, April 24-26
- 1998 Organized Executive Course on Finance and Insurance for Columbia on Risk Management, 2000 at Centre Solutions, Inc, Hamilton, Bermuda, March 13-18
- 1998 Hosted Distinguished Lectures on the Global Environment, Program on Information and Resources (PIR), Columbia University (with the participation of Ralph Gomory, Director of the Sloan Foundation, Professor Lynn Margulis of the University of Massachusetts, and Raul Estrada Oyeula Esq, Chair of the Negotiating Committee of the Kyoto Protocol, United Nations Framework Convention of Climate Change (UNFCC)), March 31, April 15, 28
- 1998 Keynote Address, “The Knowledge Revolution: Updating Property Rights,” Missouri Botanical Garden Conference on Managing Human Dominated Ecosystems, St. Louis, Missouri, March
- 1998 - 2000 IPCC Meetings Lead Author, Attended Intergovernmental Panel on Climate Change (IPCC) Meetings, Toronto, Canada, Washington DC, and Tucson, Arizona
- 1997 Keynote Address, “Markets with Endogenous Uncertainty,” Australasian Meetings of the Econometric Society, Melbourne, Australia, July
- 1997 Invited Lecturer, “Chaotic Risks,” IBM Research Division, Yonkers, New York, June
- 1997 Lectured at the Smithsonian Institution on Biosphere Reserves and World Heritage Sites, Washington DC

- 1996 Keynote Address, “The Future of Global Reinsurance,” Independent Reinsurance Underwriters Association of the USA, New Jersey, September 9
- 1996 Keynote Presentation, “Environmental Markets: Equity and Efficiency,” New York University Law School Workshop at Villa La Pietra, Florence, Italy, July 22
- 1996 Plenary Address, “A Topological Invariant for Competitive Markets,” Second World Congress of Nonlinear Analysts, Athens, Greece, July 10-17
- 1996 Chairman of the Organizing Committee of the Workshop on Catastrophic Environmental Risks, The Fields Institute for Mathematical Sciences, Toronto, Canada, June
- 1996 Distinguished Lectures on Managing the Global Environment: Between Equity and Efficiency, University of Paris Nanterre, EHESS, and CIRED, Paris, France, June 19-27
- 1996 Invited Address, “Property Rights in Markets for Knowledge,” American Economic Association Yearly Meetings, San Francisco, California, January
- 1995 Member, Review Panel on Mathematical Science Education, National Science Foundation, June
- 1995 Invited Speaker and Session Chair on Topology & Resource Allocation, Conference on Current Trends in Economics: Theory and Applications, Cephalonia, Greece, May 22-28
- 1995 Keynote Plenary Address, “Markets with Emissions Trading: the Case for an International Bank for Environmental Settlements,” The Third Annual World Bank Conference on Effective Financing of Environmentally Sustainable Development, The World Bank, Washington DC, October 5
- 1995 Leif Johansen Award, “Endogenous Uncertainty & Resource Allocation,” University of Oslo, Norway, March
- 1995 Invited Speaker, Topics in Mathematical Finance, Colloquium, Columbia University Department of Applied Mathematics, Columbia University, New York, April
- 1995 Invited Speaker, “Perspectives of General Equilibrium Analysis,” Colloquium in Honor of Frank Kahn’s Seventieth Birthday, University of Siena Department of Political Economy, Siena, Italy, April
- 1994 Keynote Speaker, “Trade Regimes and GATT,” CIDEI, University of Rome, La Sapienza, December

- 1994 - 1998 Member, Board of Trustees, Natural Resources Defense Council (NRDC), New York
- 1994 David Kinley Distinguished Lecture, "Global Environmental Policy: Equity and Efficiency," University of Illinois, Illinois, November 28
- 1994 Invited Speaker, "Limited Arbitrage, Gains from Trade and Social Diversity: a Unified Perspective on Resource Allocation," University of California at Irvine, California, August
- 1994 Plenary Speaker, "Markets With Endogenous Uncertainty," FUR VII OLSO Foundation of Uncertainty and Risk, July
- 1994 Invited Speaker, "What is Sustainable Development?," Conference on Incommensurability and Value, Chateau du Baffy, Normandy, France, April
- 1994 Invited Speaker, Conference on Biological Diversity: Exploring the Complexities, University of Arizona, Arizona, March
- 1994 Invited Speaker, "A Unified Perspective on Resource Allocation," International Economic Association Round Table on Social choice, Schloss Hernstein, Vienna, Austria, May
- 1994 Invited Speaker, "Property Rights, North-South Trade, and the Global Environment," Conference on Agricultural Trade and the Environment: Understanding and Measuring the Critical Linkages, International Agricultural Trade Research Consortium and the US Agency for International Development, Toronto, Canada, June 17-18
- 1994 Invited Minicourse, "Topology and Markets," The Fields Institute of Mathematical Sciences of Canada, August
- 1994 Keynote Speaker, "Meanings of Equity," Intergovernmental Panel on Climate Change (IPCC), UNEP, Nairobi, Kenya, July
- 1994 Contributed Author IPCC, Equity and Social Considerations
- 1994 Keynote Speaker, "Markets With Emission Permits: Equity and Efficiency," Ivon Conference on the Environment, Beijer Institute, Royal Swedish Academy of Sciences, Ivon, Sweden, May
- 1994 Invited Speaker, "Intersecting Families of Sets," Colloquium, Department of Mathematics, University of California Berkeley, February
- 1994 - 1995 Salinbemi Chair, University of Siena, Siena, Italy

- 1994           Invited Speaker, “Arbitrage, Gains from Trade and Social Diversity: A Unified Perspective on Resource Allocation,” American Economic Association Yearly Meetings, Boston, January 3-5
  
- 1993           Invited Speaker, “A Topological Interpretation of Hirsch’s Monotone Dynamics,” Hirsch Symposium, Midwest Dynamical Systems Seminar, University of California Berkeley, California, October 24
  
- 1992           Invited Speaker, “The Topology of Markets and Games,” European Congress of Mathematicians, Satellite Seminar on Mathematics and Economics, Chaired by Gerard Debreu, Paris, July 4
  
- 1991 - 1993   Siena Fellowship, Monti di Pashi di Siena, University of Siena, Italy
  
- 1991           Newcombe Foundation and ODE, Honor Society in Economics Award: Most Distinguished Women Economist, Tulane University, Louisiana
  
- 1985 - 1986   Awarded National Science Foundation Professorship, University of California Berkeley Department of Mathematics
  
- 1983 - 1984   Rockefeller Foundation, International Relations Award at Columbia University
  
- 1977           Fellowship, Banco Central de la Republica Argentina
  
- 1968 - 1969   Ford Foundation Fellowship for Studies in Mathematics at Massachusetts Institute of Technology

Personal:

- Born in Buenos Aires, Argentina
- US citizen since 1991
- Two children
- English, Spanish, and French

Publications:

1.   “Group Actions on Spin Manifolds,” Transactions of the American Mathematical Society, vol. 172, pp. 307-315, October, 1972.
2.   “Manifolds of Preferences and Equilibria,” Ph D Dissertation at UC Berkeley, 1976.
3.   “Properties of Critical Points and Operators in Economics,” with P. J. Kalman, Journal of Mathematical Analysis and Applications, vol. 57, no. 2, pp. 340-349, February, 1977.
4.   “Spaces of Economic Agents,” Journal of Economic Theory, Academic Press, New York and London, vol. 15, no. 1, pp. 160-173, June, 1977.
5.   “Trends in Mathematical Modelling,” Applied Mathematical Modelling, vol. 1, June, 1977.

6. "Development Patterns and the International Order," Journal of International Affairs, vol. 31, no. 2, pp. 275-304, Fall/Winter, 1977.
7. "Economic Development and Efficiency Criteria in the Satisfaction of Basic Needs," Applied Mathematical Modelling, vol. 1, no. 6, pp. 290-297, September, 1977.
8. "Nonlinear Functional Analysis and Optimal Economic Growth," Journal of Mathematical Analysis and Applications, vol. 61, no. 2, pp. 504-520, November 15, 1977.
9. "Comparative Statics of Less Neoclassical Agents," Lecture Notes in Economics and Mathematical Systems, Some Aspects of the Foundation of General Equilibrium Theory (Ed. J. Green), Springer-Verlag Publishing, New York, no. 159, pp. 61-76, 1978.
10. "Comparative Statics of Less Neoclassical Agents," with P. J. Kalman, International Economic Review, vol. 19, pp. 141-148, February, 1978.
11. "Problems of Market Adjustments to Occupational Safety and Health Hazards," Technical Report, Office of Assistant Secretary for Policy, Evaluation and Research (ASPER), U.S. Department of Labor, no. B-9-D-63788, February, 1978.
12. "Modelling with Scenarios: Technology in North-South Development," with S. Cole, Futures, pp. 303-321, August, 1978.
13. "Technology Distribution and North-South Relations," with S. Cole, UNITAR Report, Project on the Future, pp. 1-90, August, 1978.
14. "An Extension of Comparative Statics to a General Class of Optimal Choice Models," with P. J. Kalman, Lecture Notes on Economics and Mathematical Systems, Some Aspects of the Foundations of General Equilibrium Theory: The Posthumous Papers of Peter J. Kalman (Ed. J. Green), Springer-Verlag Publishing, New York, no. 159, pp. 1-25, 1978.
15. "Some Results from a Model of Trade, Aid and the Development of the South," (Eds. Acero, Cole and Rush), Issues and Analysis of Long Term Development, Proceedings of Seminar at the Institute of Development, University of Sussex, November 20 - December 2, 1978.
16. "A Model of Technology, Domestic Distribution and North-South Relations," with S. Cole, Technological Forecasting and Social Changes, vol. 13, no. 4, pp. 297-320, May, 1979.
17. "Thought and Action to Date Towards a Conceptual Framework - Four Position Papers," with B. Roling, N. Ball, M. Leitenberg, and U. Albrecht, Disarmament and Development, pp. 1-64, June, 1979.
18. "Comparative Statics and Dynamics of Optimal Choice Models in Hilbert Spaces," with P. J. Kalman, Journal of Mathematical Analysis and Applications, vol. 70, no. 2, pp. 490-504, August, 1979.
19. "On Fixed Point Theorems and Social Choice Paradoxes," Economic Letters, vol. 3, pp. 347-351, 1979.
20. "Models and Mystification: The Use of Mathematics to Support Vested Interests," Models, Planning and Basic Needs (Eds. S. Cole and H. Lucas), Pergamon Press, pp. 165-171, 1979.
21. "A Model of the Relation between Technology and North-South Income Distribution," with S. Cole and J. Clark, Models, Planning and Basic Needs (Eds. S. Cole, H. Lucas), Pergamon Press, pp. 87-96, 1979.

22. "Application of Functional Analysis to Models of Efficient Allocation of Economic Resources," with P. J. Kalman, Journal of Optimization Theory and Applications, vol. 30, no. 1, pp. 19-32, January, 1980.
23. "Agriculture and the Rest of the Economy: Macroconnections and Policy Restraints," with L. Taylor, American Journal of Agricultural Economics, vol. 62, pp. 303-309, May, 1980.
24. "North-South Interdependence, Development and Trade," IFDA Dossier, no. 18, pp. 59-74, July/August, 1980.
25. "Social Choice and the Topology of Spaces of Preferences," Advances in Mathematics, vol. 37, no. 2, pp. 165-176, August, 1980.
26. "Authoritarianism and Development: A Global Perspective," with R. Falk and J. Serra, IFDA Dossier, no. 19, pp. 3-14, September/October, 1980.
27. "Basic Goods, the Effects of Commodity Transfers and the International Economic Order," Journal of Development Economics, vol. 7, pp. 505-519, December, 1980.
28. "An Extension of Comparative Statics to a General Class of Optimal Choice Models," with P. J. Kalman, Journal of Mathematical Analysis and Applications, 1980.
29. "Basic Needs and Global Models: Resources, Trade and Distribution," Alternatives, vol. 6, pp. 453-472, 1980.
30. "Continuous Representation of Preferences," Review of Economic Studies, vol. 47, pp. 959-963, 1980.
31. "Choix Sociaux et Theorie des Jeux: Resultats Recents d'une Approche Topologique," Cahiers du Seminaire d'Econometrie, no. 23, pp. 47-75, 1981.
32. "Existence and Characterization of Optimal Growth Paths Including Models with Non-Convexities in Utilities and Technologies," Review of Economic Studies, vol. 48, pp. 51-61, 1981.
33. "Existence of Optimal Savings Policies with Imperfect Information and Non-Convexities," Journal of Mathematical Economics, vol. 8, pp. 1-14, 1981.
34. "Terms of Trade and Domestic Distribution: Export Led Growth with Abundant Labour," Journal of Development Economics, vol. 8, pp. 163-192, 1981.
35. "Some Results from a Model of Trade, Aid and the Development of the South," UNESCO, pp. 96-112, 1981.
36. "Social Aggregation Rules and Continuity," Quarterly Journal of Economics, pp. 337-352, May, 1982.
37. "Trade and Development in the 1980s: Report to the Secretary General of UNCTAD," with G. Heal, United Nations, Geneva, November, 1982.
38. "Structural Instability of Decisive Majority Rules," Journal of Mathematical Economics, vol. 9, pp. 207-221, 1982.
39. "The Topological Equivalence of the Pareto Condition and the Existence of a Dictator," Journal of Mathematical Economics, vol. 9, pp. 223-233, 1982.
40. "Basic Needs and the North/South Debate," World Order Models Project, Working Paper Number Twenty-One, pp. 1-37, 1982.
41. "Energy-Capital Substitution: A General Equilibrium Analysis," International Institute for Applied Systems Analysis, Working Paper CP-83-6, February, 1983.
42. "Community Preferences and Social Choice," with G. Heal, Journal of Mathematical Economics, vol. 12, pp. 33-61, 1983.

43. "Social Choice and Game Theory: Recent Results with a Topological Approach," Social Choice and Welfare (Eds. P.K. Pattanaik and M. Salles), North Holland, chapter 6, pp. 79-102, 1983.
44. "The Transfer Problem with Three Agents Once Again: Characterization, Uniqueness and Stability," Journal of Development Economics, vol. 13, pp. 237-248, 1983.
45. "Resources, Trade and Debt: The Case of Mexico," with G. Heal and D. McLeod, Global Analysis and Projections Division, The World Bank, Washington D.C., Division Working Paper No. 1984-5, pp. 10-34, September, 1983.
46. "Necessary and Sufficient Conditions for a Resolution of the Social Choice Paradox," with G. Heal, Journal of Economic Theory, vol. 31, no. 1, pp. 68-87, October, 1983.
47. "Non-Conflicting Resource Pricing Policies in an Interdependent World," OPEC Review, vol. VII, no. 4, pp. 330-356, 1983.
48. "The World of Oil Market, Past and Future," with G. Heal, The Columbia Journal of World Business, vol. XIX, no. 7, pp. 47-55, Spring, 1984.
49. "Competitive Equilibrium in Sobolev Spaces Without Bounds on Short Sales," with G. Heal, Institute for Mathematics and its Applications, University of Minnesota, Working Paper no. 79, June, 1984.
50. "Necesidades Basicas, Recursos no Renovables y Crecimiento en el Contexto de las Relaciones Norte-Sur," Desarrollo Economico, vol. 24, no. 94, pp. 171-186, July/September, 1984.
51. "Agricultural Productivity and Trade: Argentina and the U.S.A," with D. McLeod, Global Analysis and Projections Division, The World Bank, Washington D.C., Division Working Paper No. 1984-5, pp. 1-57, October, 1984.
52. "North-South Trade and Export-Led Policies," Journal of Development Economics, vol. 15, pp. 131-160, 1984.
53. "Patterns of Power: Bargaining and Incentives in Two-Person Games," with G. Heal, Journal of Public Economics, vol. 23, pp. 333-349, 1984.
54. "Terms of Trade, Domestic Distribution and Export-Led Growth: A Rejoinder to Rejoinders," Journal of Development Economics, vol. 15, pp. 177-184, 1984.
55. "The Transfer Problem in Stable Markets: A Rejoinder to Rejoinders," Journal of Development Economics, vol. 16, pp. 319-320, 1984.
56. "Manipulations and Repeated Games in Futures Markets," The Industrial Organization of Futures Markets (Ed. R. Anderson), D.C. Heath, Lexington, MA, pp. 193-214, 1984.
57. "International Trade in Resources: A General Equilibrium Analysis," Environmental and Natural Resource Mathematics: Proceedings of Symposia in Applied Mathematics (Ed. R. McElvey), American Mathematical Society (Short Course, Eugene, Oregon, 1984), Providence, RI, vol. 32, pp. 75-125, 1985.
58. "Von Neuman - Morgenstern Utilities and Cardinal Preferences," Mathematics of Operations Research, vol. 10, no. 4, pp. 633-641, November, 1985.
59. "Oil Prices and the Developing Countries: the Evidence of the Last Decade," Intereconomics, vol. 20, no. 6, pp. 288-296, November/December, 1985.
60. "Necesidades Basicas, Recursos Naturales y Crecimiento en el Contexto Norte-Sur: Respuesta a un Comentario," Desarrollo Economico, vol. 25, no. 97, pp. 128-133, 1985.

61. "Trade and the Evolving World Economy," with G. Heal, Columbia University Graduate School of Business, Hermes Publishing, pp. 30-38, Winter, 1986.
62. "A General Equilibrium Theory of North-South Trade," Equilibrium Analysis, Essays in Honor of Kenneth J. Arrow (Eds. W. Heller, D. Starrett and R. Starr), Cambridge University Press, Cambridge, UK, vol. II, chapter 1, pp. 3-56, 1986.
63. "Topological Complexity of Manifolds of Preferences," Contributions to Mathematical Economics: In Honor of Gerard Debreu (Eds. Werner Hildenbrand and Andreu Mas-Colell), North Holland, chapter 8, pp. 131-142, 1986.
64. "Trade and Development in the 1980s," with G. Heal, One World One Future: New International Strategies for Development (Ed. Ashok Bapna), Praeger Publishers, New York, chapter 18, pp. 195-240, 1986.
65. "Prix du petrole, prix industriels et production: une analyse macroeconomique d'equilibre general," Resources Naturelles et Theorie Economique (Eds. G. Gaudet and P. Lasserre), Les Presses de l'Universite Laval, Quebec, chapter 1, pp. 26-56, 1986.
66. "The Walrasian Mechanism from Equal Division Is Not Monotonic with Respect to Variations in the Number of Consumers," with W. Thomson, Journal of Public Economics, pp. 119-124, 1987.
67. "Resources and North-South Trade: A Macro Analysis in Open Economies," Challenges of South-South Cooperation (Eds. H. Singer, N. Hatti, R. Tandon), Ashish Publishing House, New Delhi, India, pp. 263-290, 1988.
68. "Trade and Structural Change in Pacific Asia - Book Review," Journal of Economic Literature, vol. XXVII, no. 2, pp. 633-635, June, 1989.
69. "North-South Trade and Basic Needs," International Journal of Development Planning Literature, vol. 4, no. 4, pp. 180-221, 1989.
70. "On the Mathematical Foundations of Political Economy," Contributions to Political Economy, vol. 9, pp. 25-41, 1990.
71. "On the Mathematical Foundations of Political Economy," Invited Political Economy Lecture, Harvard University, March 22, 1990.
72. "An Alternative Vision," with G. Heal, Global Custodian, p. 103, September, 1990.
73. "General Equilibrium and Social Choice in Economies with Increasing Returns," Annals of Operations Research, vol. 23, pp. 289-297, 1990.
74. "North-South Trade and Basic Needs," North South Trade in Manufactures: New World Order Series (Eds. H. Singer, N. Hatti and R. Tandon), INDUS Publishing Co., New Delhi, India, vol. 7, chapter 25, part G, pp. 661-711, 1990.
75. "Global Models and North-South Relations," International Political Science Review, vol. 11, no. 2, pp. 177-185, 1990.
76. "The Opportunities in U.S.-Soviet Aid," The New York Times: Op-Ed, March 24, 1991.
77. "Setting standards: Letting 100 flowers bloom," with G. Heal, Global Custodian: Communications Technology, June/July, 1991.
78. "The Wonder Years: New Communications Technology is Set to Alter the Way International Investors do Business," with G. Heal, Global Custodian: Communications Technology, pp. 90-93 & 142, June/July, 1991.
79. "Social Choice and the Closed Convergence Topology," Social Choice and Welfare, vol. 8, pp. 307-317, 1991.



80. "Development at the Turn of this Century," Adjustment and Liberalization in the Third World (Eds. H. Singer, N. Hatti and R. Tandon), INDUS Publishing Co., New Delhi, India, chapter 6, part B, pp. 159-167, 1991.
81. "North-South Trade and Basic Needs," Theoretical Foundations of Development Planning (Ed. Shri Bhagwan Dahiya), Vedams Books International, New Dehli, India, vol. IV, 1991.
82. "Large and Small Models: Their Suitability for North-South Issues," Asian Journal of Economic and Social Studies, pp. 237-246, 1991.
83. "Market Innovation and the Global Environment," Columbia Journal of World Business, vol. XXVII, nos. III & IV, pp. 37-41, Fall/Winter, 1992.
84. "The Rain Drain," with G. Heal, Hermes Publishing, Columbia University School of Business, pp. 26-29, 1992.
85. "Chaotic Price Dynamics, Increasing Returns and the Phillips Curve," with G. Heal and Y. Lin, Working Paper Columbia University, 1992.
86. "A proposal for New York," The New York Times, January 2, 1993.
87. "On Strategic Control," Quarterly Journal of Economics, pp. 285-290, February, 1993.
88. "How NAFTA Can Improve Trade," Journal of Commerce, Washington D.C., April 16, 1993.
89. "Traditional Comparative Advantages vs. Economies of Scale: NAFTA and GATT," Rivista Di Politica Economica, pp. 161-197, April, 1993.
90. "Competitive Equilibrium in Sobolev Spaces Without Bounds on Short Sales," Journal of Economic Theory, vol. 59, no. 2, pp. 364-384, April, 1993.
91. "Sustainable Growth and the Green Golden Rule," with A. Beltratti and G. Heal, presented at conference on Sustainable Growth, Paris, May, 1993.
92. "The Abatement of Carbon Emissions in Industrial and Developing Countries," presented at Organization for Economic Cooperation and Development (OECD) Conference on The Economics of Climate Change, June 14-16, 1993.
93. "Energy-Capital Substitution: A General Equilibrium Analysis," (Ed. G. Heal), Critical Writings in the Economics of Exhaustible Resources, Edward Elgar Publishing, chapter 17, pp. 339-90, 1993.
94. "Intersecting Families on Sets and the Topology of Cones in Economics," Bulletin of the American Mathematical Society, Expository and Research Papers, vol. 29, no. 2, pp. 189-207, October, 1993.
95. "Global Environmental Risks," with G. Heal, Journal of Economic Perspectives: Special Issue on the Environment, vol. 7, no. 4, pp. 65-86, Fall, 1993.
96. "Property Rights on Biodiversity and the Pharmaceutical Industry," Case Study, Columbia Business School, Fall, 1993.
97. "International Trade in Resources: A General Equilibrium Analysis," The Economics of Exhaustible Resources (Ed. G. Heal), Edward Elgar Publishing, 1993.
98. "Topology and Economics: The Contribution of Stephen Smale," Topology to Computation, Proceedings of the Smalefest (Eds. M. Hirsch, J. Marsden and M. Shub), Springer-Verlag Publishing, New York, pp. 147-161, 1993.
99. "The Cone Condition, Properness and Extremely Desirable Commodities," Economic Theory, vol. 3, pp. 177-182, 1993.

100. "North-South Trade and the Dynamics of Renewable Resources," Structural Change and Economic Dynamics, Oxford University Press, vol. 4, no. 2, pp. 219-248, December, 1993.
101. "The City as a Home," New York Times: Op-Ed, January 2, 1994.
102. "Social Diversity, Arbitrage, and Gains from Trade: A Unified Perspective on Resource Allocation," Invited Lecture, American Economic Association Yearly Meeting, Boston, January, 1994.
103. "Who Should Abate Carbon Emission? An International Perspective," with G. Heal, Economics Letters, pp. 443-449, Spring, 1994.
104. "Social Diversity, Arbitrage, and Gains from Trade: A Unified Perspective on Resource Allocation," American Economic Review, Papers, and Proceedings, vol. 84, no. 2, pp. 427-434, May, 1994.
105. "North-South Trade and the Global Environment," American Economic Review, vol. 84, no. 4, pp. 851-874, September, 1994.
106. "Rejected: Leading Economists Ponder the Publication Process," (Ed. George B. Sheperd, Foreword by K. Arrow), Thomas Horton and Daughters Publishing, chapter 55, pp. 56-66, November 1, 1994.
107. "Topological Aggregation of Preferences: The Case of a Continuum of Agents," with J. Candeal and E. Indurain, Social Choice and Welfare, November 20, 1994.
108. "Limited Arbitrage is Necessary and Sufficient for the Existence of a Competitive Equilibrium and the Core, and Limits Voting Cycles," Economics Letters, vol. 46, pp. 321-331, December, 1994.
109. "North-South Trade, Property Rights and the Dynamics of Environmental Resources," The Environment after Rio: International Law and Economics (Eds. L. Campiglio, L. Pineschi, D. Siniscalco and T. Treves), Graham and Trotman/Martinus Nijhoff Publishing, London, pp. 205-233, 1994.
110. "The Abatement of Carbon Emissions in Industrial and Developing Countries," Organization for Economic Cooperation and Development (OECD): The Economics of Climate Change (Ed. T. Jones), pp. 159-170, 1994.
111. "The Environment and the Long Run: A Comparison of Different Criteria," with A. Beltratti and G. Heal, Ricerca Economica, vol. 48, pp. 319-340, 1994.
112. "Traditional Comparative Advantage vs. Economies of Scale: NAFTA and the GATT," International Problems of Economic Interdependence (Eds. M. Baldassarri, M. Di Matteo, and R. Mundel), New York, St. Martin's Press, pp. 161-197, 1994.
113. "Limited Arbitrage is Necessary and Sufficient for the Existence of a Competitive Equilibrium With or Without Short Sales," Economic Theory, vol. 5, no. 1, pp. 79-108, January, 1995.
114. "Sustainable Development and North-South Trade," Fondazione Eni Enrico Mattei (FEEM) Newsletter, Milano, Italy, March, 1995.
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116. "The Green Golden Rule," with G. Heal and A. Beltratti, Economic Letters, vol. 49, no. 2, pp. 175-180, August, 1995.
117. "No Block to Trade," New Economy, Institute for Public Policy Research (IPPR), London, pp. 186-192, September, 1995.
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- Economic Commission for Latin America and the Caribbean (ECLAC), Washington, D.C., pp. 165-188, 1995.
119. "Existence of Optimal Growth Paths With Endogenous Technical Change," with P. Gruenwald, Economic Letters, vol. 48, pp. 433-439, 1995.
  120. "Chaotic Price Dynamics, Increasing Returns and the Phillips Curve," with G. Heal and Y. Lin, Journal of Economic Behavior and Organization, vol. 27, pp. 279-291, 1995.
  121. "Markets for Tradeable CO<sub>2</sub> Emission Quotas Principles and Practice," with G. Heal, Organization for Economic Cooperation and Development (OECD), Paris, Economics Department Working Paper No. 153, 1995.
  122. "Option Values and Endogenous Uncertainty in ESOPs, MBOs and Asset-Backed Loans," with G. Heal and D. Tsomocos, Economic Letters, vol. 48, pp. 379-388, 1995.
  123. "A Unified Perspective on Resource Allocation: Limited Arbitrage is Necessary and Sufficient for the Existence of a Competitive Equilibrium, the Core and Social Choice," Social Choice Re-examined (Eds. K. Arrow, A. Sen and T. Suzumura), McMillan, London, and Universite Catholique de Louvaine, Belgium, CORE Discussion Paper no. 9527, 1995.
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  127. "The Evolution of a Global Network: A Game of Coalition Formation," Journal of International and Comparative Economics, vol. 4, pp. 179-197, 1995.
  128. "The Economic Value of the Earth's Resources," Trends in Ecology and Evolution (TREE): Perspectives, vol. 11, no. 3, pp. 135-140, 1995-1996.
  129. "The Greening of the Bretton Woods," Financial Times, pp. 8, January 10, 1996.
  130. "Global bank seeks to swap environmental risks," Risk Management, February, 1996.
  131. "Catastrophe Bundles Can Deal With Unknown Risk," Best's Review, pp. 44-48, February, 1996.
  132. "Fischer Black: The Mathematics of Uncertainty," Notices of The American Mathematical Society, pp. 319-322, March, 1996.
  133. "Individual Risk and Mutual Insurance," with D. Cass and H. Wu, Econometrica, vol. 64, no. 2, pp. 333-341, March, 1996.
  134. "Financial Innovation in Property Catastrophe Reinsurance: The Convergence of Insurance and Capital Markets," Risk Financing Newsletter, vol. 13, no. 2, June, 1996.
  135. "The Future of Global Reinsurance," Presentation at the National Bureau of Economic Research Workshop on Public Policy and the Environment, Boston, August 1, 1996.
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139. "An Axiomatic Approach to Choice under Uncertainty with Catastrophic risks," Invited Presentation, Proceedings of a Workshop on Catastrophic Environmental Risks, The Fields Institute for Mathematical Sciences, University of Toronto, Canada, June 9-11, 1996.
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141. "Property Rights and the Dynamics of Renewable Resources in North-South Trade," Trade, Innovation and the Environment (Ed. C. Carraro), Kluwer Academic Publishers, chapter 1, pp. 15-54, 1996.
142. "Property Rights and the Dynamics of North-South Trade," Agriculture, Trade and the Environment: Discovering and Measuring the Critical Linkages (Eds. M. Bredahl, N. Ballenger, J. Dunmore and T. Roe), Westview Press, HarperCollins Publishers, Boulder, CO and Oxford, UK, chapter 8, pp. 97-110, 1996.
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147. "Trade Regimes and GATT: Resources Intensive versus Knowledge Intensive Growth," Journal of International and Comparative Economics, vol. 20, pp. 147-181, 1996.
148. "Markets with Endogenous Uncertainty: Theory and Policy," Theory and Decision, vol. 41, pp. 99-131, 1996.
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#### Other Professional Positions and Research Projects:

- 1971 Member of the Presidential Cabinet of Banco Central de la Republica Argentina (Central Bank of Argentina), President Daniel Fernandez
- 1971 - 1974 Director, Economics and Mathematical Economics, Bariloche Model, Fundacion Bariloche, Argentina
- 1974 - 1975 Co-Principal Investigator, National Science Foundation, Grant No. 6S 18174, Harvard University, with K.J. Arrow and P. Kalman
- 1975 - 1977 Co-Principal Investigator, The Urban Institute, Washington DC, with K.J. Arrow and P. Kalman
- 1975 - 1986 Visiting Scholar, Several short-term visits, International Institute of Applied Systems Analysis, Laxenburg, Austria
- 1976 - 1977 Office of Naval Research, Contract No. NOO 14-67-A-0298-0019, Project No. NR-47-004, with K.J. Arrow
- 1976 - 1977 Special Fellow, and Director of Research, "Technology & North-South Relations", United Nations Institute for Training and Research

- 1977 - 1978 Principal Investigator, United States Department of Labor, No. B-9-D-6-3788 (ASPER) on Problems of Labor Market Adjustment to Industrial Health Hazards
- 1979 - 1983 Project Director, "Development and North-South Trade," United Nations Institute for Training and Research, United Nations, New York
- 1980 - 1982 Principal Investigator, National Science Foundation, Grant No. SES-7914050, "Classic Income Distribution Growth"
- 1980 - 1994 List of NIH/NSF grants profile
- 1981 - 1983 Principal Investigator, Rockefeller Foundation Project in International Relations
- 1982 Economic Consultant, OPEC Secretariat, Vienna, Austria
- 1982 Economic Consultant, UNCTAD Secretariat, Geneva, Switzerland
- 1984 - 1985 Principal Investigator, National Science Foundation, Grant No. SES-8409857, "Market Organization and Public Policy with Increasing Returns"
- 1984 - 1985 Consultant, The World Bank, Division of Global Analysis and Projections
- 1985 Awarded National Science Foundation Professorship at the Department of Mathematics, University of California Berkeley
- 1985 - 1986 Principal Investigator, National Science Foundation, Grant No. SES-8420244, "International Dimension in Regulation"
- 1985 - 1989 CEO and Chairman, FITEL Limited (New York, London, Tokyo)
- 1989 - 1990 Executive Director, Science International Limited
- 1990 Consultant on Capital Markets to Gunes Taner (Minister of State, Prime Ministry, Ankara, Republic of Turkey), Mehmet Tekbas (President of Capital Markets Board, Ankara, Turkey), and The Istanbul Stock Exchange (Istanbul, Turkey)
- 1991 - 1993 Siena Fellowship, University of Siena, Italy
- 1992 Economic Consultant, Program of Trade Liberalization of the Americas, United Nations, ECLAC, Washington DC
- 1992 - 1993 Consultant on International Environmental Policy, Fondazione Eni Enrico Mattei, Milano, Italy

- 1993 Economic Consultant, OECD, Paris, Environmental Division, The Economics of Climate Change, Spring/Summer, 1993
- 1993 - 1995 Principal Investigator, National Science Foundation, Grant No. SBR 9216028, "Environmental Policies in an International Context"
- 1994 Consultant, OECD, Paris, Economic Division, "International Markets with Property Rights on Carbon Emissions"
- 1994 Organizer, LEAD Conference on Trade and Sustainable Development, Module Two, The Rockefeller Foundation, Chiang Mai, Thailand, May 20-30
- 1994 Advisor and Contributing Author, International Panel on Climate Change (IPCC), Writing Team Four, "Equity and Social Considerations"
- 1994 Principal Investigator, National Science Foundation, Mathematical Sciences, Grant No. DMS 94-08798, "Geometry, Topology and Markets"
- 1994 - 1998 Member of Board of Trustees, Natural Resources Defense Council (NRDC), New York
- 1998 Principal Investigator, UN Foundation Grant, awarded by UN Foundation for work with United Nations, "Technology Transfer and Emissions Trading: A Win-Win Approach to the Kyoto Protocol"
- 1998 Lead Author, Intergovernmental Panel on Climate Change (IPCC)
- 1999 Sloan Foundation, Grant on the Knowledge Revolution, Sloan Foundation, New York
- 2000 Director, Columbia Consortium for Risk Management (CCRM)
- 2000 - 2002 CEO, Consultant, and Director, CrossBorder Exchange Corporation, New York City, New York
- 2003 Consultant and Chairman, CrossBorder Exchange Corporation, New York City, New York
- 2008 Co-Founder & CEO, Global Thermostat LLC, New York & Silicon Valley
- 2009 – 2012 Principle Investigator Optimal Statistical Decisions with Catastrophic Risks (FA9550-09-1-0467)
- 2012 - Board Member, Ethical Markets Media, Florida
- 2012 - Member, Bank of America's The Capital Institute, New York



2013 - Member of Scientific Advisory Board of the Austrian Institute for  
Economics Research, Vienna, Austria

## **INTERVIEWS**

Capping Emissions Is Not Enough: An Interview With the Creator of the Kyoto Protocol Carbon Market

Truthout, November 28, 2015

<http://www.truth-out.org/news/item/33783-architect-of-the-kyoto-protocol-capping-emissions-is-not-enough>

Kyoto by any other name: Interview with Graciela Chichilnisky

Open Democracy, December 3, 2015

<https://www.opendemocracy.net/c-j-polychroniou-graciela-chichilnisky/kyoto-by-any-other-name-interview-with-graciela-chichilnisky>

Interview – Graciela Chichilnisky

E-International Relations, January 20, 2016

<http://www.e-ir.info/2016/01/20/interview-graciela-chichilnisky/>

Interview with Graciela Chichilnisky Part 1 - Climate Change: The Mother of All Geopolitical Challenges

Global Policy Journal, March 3, 2016

<http://www.globalpolicyjournal.com/blog/03/03/2016/interview-graciela-chichilnisky-part-1-climate-change-mother-all-geopolitical-challe>

Interview with Graciela Chichilnisky Part 2 - Reflections of an Innovated-Minded Economist

Global Policy Journal, March 9, 2016

<http://www.globalpolicyjournal.com/blog/09/03/2016/interview-graciela-chichilnisky-part-2-reflections-innovated-minded-economist>

Bound to Nothing: Interview with Graciela Chichilnisky on the Paris Climate Agreement

International Affairs Forum, December 24, 2015

<http://www.ia-forum.org/Content/ViewInternalDocument.cfm?ContentID=8457>

Climate Change and the Future of the World: An Interview with Graciela Chichilnisky

International Affairs Forum, December 24, 2015

<http://www.ia-forum.org/Content/ViewInternalDocument.cfm?ContentID=8484>

## **ARTICLES**

“While leaders talk in Paris, carbon-negative tech could save the planet”

The Globe and Mail, December 8, 2015

<http://www.theglobeandmail.com/report-on-business/rob-commentary/while-leaders-talk-in-paris-carbon-negative-tech-could-save-the-planet/article27636208/>

Paris COP21: the worst deal in the history of global climate negotiations

Open Democracy, December 16, 2015

<https://www.opendemocracy.net/can-europe-make-it/c-j-polychroniou/paris-cop21-worst-deal-in-history-of-global-climate-negotiations>

Paris COP21 Climate Agreement is Bound to Nothing: What is the Solution?

E-International Relations, December 29, 2015

<http://www.e-ir.info/2015/12/29/paris-cop21-climate-agreement-is-bound-to-nothing-what-is-the-solution/>

Climate Change: The Mother Of All Geopolitical Challenges ~ Interview With Graciela Chichilnisky

Rozenberg Quarterly, March 26, 2016

<http://rozenbergquarterly.com/interview-with-graciela-chichilnisky-climate-change-the-mother-of-all-geopolitical-challenges/>

Intellectual Property Rights – registered with US Trademark Office:

- Knowledge Revolution
- Carbon Negative Technology
- Global Thermostat
- Biosphere and Society

Intellectual Property Rights – Patents:

Multiple US patents for capturing carbon dioxide from air