INEZ Y. FUNG

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EDUCATION:

1971: S.B. (Applied Mathematics), Massachusetts Institute of Technology
1977: Sc.D. (Meteorology), Massachusetts Institute of Technology
Thesis: "The organization of spiral rainbands in a hurricane"
Advisor: Prof. J.G. Charney

RESEARCH INTERESTS:

Climate change and biogeochemical cycles. Large scale earth system modeling. Remote sensing of earth systems. Atmosphere-ocean interactions, and atmosphere-biosphere interactions.

PRESENT PROFESSIONAL EMPLOYMENT:

1998-: **University of California, Berkeley**
Professor, Department of Earth and Planetary Science,
Department of Environmental Science, Policy and Management
Director, Berkeley Atmospheric Sciences Center, 1998-2005
Co-Director, Berkeley Institute of the Environment, 2005-
Faculty Staff Scientist, Earth Sciences Division, Lawrence Berkeley National Laboratory

PAST PROFESSIONAL EMPLOYMENT:

1993-2001: Adjunct Senior Scientist, Lamont-Doherty Earth Observatory, Columbia University
1993-1998: Professor, School of Earth and Ocean Sciences, University of Victoria, Canada
1986-1998: Physical Scientist, NASA Goddard Space Flight Center, Institute for Space Studies, (on leave of absence 1993-1998)
1989-1993: Adjunct Professor, Division of Applied Mathematics, Department of Applied Physics, Columbia University

1986-1993: Adjunct Associate Research Scientist, Lamont-Doherty Geological Observatory of Columbia University
1988, Spring: Visiting Associate Professor, Institute of Environmental Studies, University of Washington
1979-1986: Associate Research Scientist, Lamont-Doherty Geological Observatory of Columbia University (resident at NASA Goddard Institute for Space Studies)
1977-1979: National Academy of Sciences/National Research Council Resident Research Associate (resident at Goddard Space Flight Center)

OTHER PROFESSIONAL ACTIVITIES:

National and International Committees, Panels, Working Groups: Current

2005- Co-Lead, Diagnostics Group (with J. Randerson) of the Biogeochemistry Working Group, NCAR Community Climate System Model
2005- Member, Ecosystems, Land Use and Biodiversity Panel of the NRC Decadal Survey: Earth Science Applications from Space
2004-2005: Member, Ad-Hoc Committee for Petascale Collaboratory for the Geosciences

National and International Committees, Panels, Working Groups: Past:

2003-2005: Member, National Academies Coordinating Committee on Global Change
2001-2005 Member, Executive Council, American Meteorological Society
2001-2004: Member, American Geophysical Union Fellows Selection Committee
2000-2003: Member, NOAA Postdoctoral Fellows Selection Committee
1999-2004: Member, Scientific Steering Group, US Carbon Cycle Science Program
1998-2004: Co-Chair, Biogeochemistry Working Group, NCAR Community Climate System Model
1997-2004: Member, Task Force for International Geosphere Biosphere Programme (IGBP) Global Analysis, Interpretation and Modelling (GAIM)
1998-2000: Member, NASA Earth Sciences Advisory Committee
1998-2000: Member, National Science Foundation GeoSciences Advisory Committee
1998-2000: Working Group Member, US Carbon Cycle Science Program
1996-1998: Member, Science Council of British Columbia
1990-1998: Member, US National Oceanographic and Atmospheric Administration (NOAA) Panel on Climate and Global Change; Member of Executive Committee
1997: Member, Scientific Organizing Committee, 5th International CO_2 Conference, Cairns, Australia
1996: Member, Canadian National Committee for the Global Climate Observing System
1995-1996: Member, NAS/NRC Space Studies Board Committee on Earth Studies
1994-2002: Member, Commission on Atmospheric Chemistry and Global Pollution (CACGP) of the International Association of Meteorology and Atmospheric Science (IAMAS)
1990-1994: Member, NAS/NRC Polar Research Board
1993-1994: Member, Program Advisory Committee, Dahlem Conference on Aerosols and Climate

1993: Member, Scientific Organizing Committee, 4th International CO2 Conference, Carqueiranne, France
1990: Member, Scientific Advisory Council, U.S. Climate Systems Modeling Project
1989: Member, International Geosphere Biosphere Program (IGBP) Coordinating Panel on Global Analysis Interpretation and Modelling
1989: Member, International Geosphere Biosphere Program (IGBP) Coordinating Panel on Effects of Climate Change on Terrestrial Ecosystems
1988-1989: American Association for the Advancement of Science, Committee on Climate
1986-1989: National Academy of Sciences/National Research Council Climate Research Committee
1989: National Research Council Committee on Global Change Working Group on Water-Energy-Vegetation Interaction, 1989
1989-1991: Organizing Committee, Workshop on Arctic Systems Science: A Strategy for Action
1988: Joint US/China Working Group on Possible Collaboration in the International Geosphere Biosphere Program
1986: Working Group on Theoretical Studies and Modeling, Global Tropospheric Chemistry:Plans for the U.S. Research Effort

Other Committees:

2000: Chair, NSF Directorate of Geosciences Committee of Visitors (COV) for UCAR and Lower Atmospheric Facilities Oversight Section
2003: Member, External Visiting Committee, Department of Meteorology, University of Maryland
2003: Member, External Visiting Committee, Department of Atmospheric Sciences, UCLA

Editorial:

2002-2004: Editorial Board, Global Biogeochemical Cycles
1996-1998: Editor, Journal of Climate
1994-: Editorial Advisory Panel, Global Change Biology
1993-1994: Guest Editor, *Tellus* Special Issue for the 4th International CO_2 Conference
1990-1997: Editorial Board, International Journal of Remote Sensing
1988-1989: Associate Editor, Journal of Climate

AWARDS AND HONORS:

2005: Scientific American 50
2004: Roger Revelle Medal, American Geophysical Union
2002: Henry W. Kendall Memoral Lecturer in Global Change Science, MIT
2001: Elected Member, National Academy of Sciences
1997-2002: Richard and Rhoda Goldman Distinguished Professor for the Physical Sciences, UC Berkeley

1996:	Fellow, American Geophysical Union
1994:	Fellow, American Meteorological Society
1992-1997:	NASA Goddard Senior Fellow
1991:	NOAA Distinguished Authorship Award
1990, 1996:	NASA Goddard Institute for Space Studies Most Valuable Paper Award
1989:	NASA Exceptional Scientific Achievement Medal
1987, 1993:	NASA Goddard Institute for Space Studies Peer Award
1977:	C.G. Rossby Award for the outstanding thesis of the year, Department of Meteorology, MIT

PROFESSIONAL MEMBERSHIP:

American Geophysical Union
American Meteorology Society
American Association for the Advancement of Science

OUTREACH

Biography "Forecast Earth: the Story of Climate Scientist Inez Fung" is one in the series "Women's Adventures in Science" targeted at middle-school students.
http://www.iWASwondering.org

FOR PUBLICATIONS, SEE SEPARATE LIST

EDUCATION AND MENTORSHIP

Courses taught at the University of California, 1998-2006

Case Studies in Earth Systems -- Earth And Planetary Science (EPS) 150 [2 units]
Course Format: Two hours of lecture per week.
Prerequisites: EPS 50, senior standing or consent of instructor.
Description: Analysis and discussion of three research problems on the interactions of solid earth, hydrologic, chemical, and atmospheric processes. Emphasis is on the synthesis and application of the student's disciplinary knowledge to a new integrative problem in the earth sciences.

Atmospheric Physics and Dynamics -- Earth And Planetary Science (EPS) 181 [3 units]
Course Format: Three hours of lecture/discussion per week.
Prerequisites: Mathematics 53, 54; Physics 7A-7B-7C.
Description: This course examines the processes that determine the structure and circulation of the Earth's atmosphere. The approach is deductive rather than descriptive: to figure out the properties and behavior of the Earth's atmosphere based on the laws of physics and fluid dynamics. Topics will include interaction between radiation and atmospheric composition; the role of water in the energy and radiation balance; governing equations for atmospheric motion, mass conservation, and thermodynamic energy balance; geostrophic flow, quasigeostrophic motion, baroclinic instability and dynamics of extratropical cyclones. Text: Holton

Carbon Cycle Dynamics -- Earth And Planetary Science (EPS) 251 [3 units]
Course Format: Three hours of lecture per week.
Description: In this course, we will focus on the (unsolved) puzzle of the contemporary carbon cycle. Why is the concentration of atmospheric CO2 changing at the rate observed? What are the terrestrial and oceanic processes that add and remove carbon from the atmosphere? What are the processes responsible for long-term storage of carbon on land and in the sea? Emphasis will be placed on the observations and modeling needed to evaluate hypotheses about carbon sources and sinks. Past records will be examined for clues about sensitivity of carbon processes to climate variations.

Climate Modeling – Earth and Planetary Science (EPS) 298 [2-3 units] (to be developed into a new course for Spring 2007):
Course Format: Three hours of lecture/discussion per week.
Prerequisites: EPS 181
Description: This course presents the fundamental concepts of global climate models, including numerical methods, radiative transfer, atmospheric and oceanic dynamics, parameterization of clouds and subgrid scale processes. Emphasis is placed on the philosophies and principles that guide the various approaches to climate modeling and on the advantages and limitations of the different approaches.

Post-doctoral Scholars Sponsored

2006- Colette Heald (PhD, Harvard)
2006- Jung-Eun Lee (PhD, UC Berkeley)
2004-2005: Cara Henning (PhD, Princeton University)
2002-2005: Wolfgang Buermann (PhD, Boston University)
2002-2005: Alon Angert (PhD, Hebrew University)
2001-2003: Sebastien Biraud (PhD, University of Paris, IV)
2001-2003: Celine Bonfils (PhD, University of Paris IV)
2000-2002: Christopher Still (PhD, Stanford University)
1999-2001: Johanne Balle (PhD, University of Paris IV)

1998-2000: James Randerson (PhD, Stanford University)
1996-1997: Philippe Maisongrande (PhD., Institut National Polytechniques de Toulouse)
1995-1997: Pierre Friedlingstein (PhD., U. of Brussels)
1995-1996: Aigou Dai (PhD, Columbia U.)
1992-1994: Fritz Zaucker (PhD., U. Heidelberg, Germany)
1992-1994: Ina Tegen (PhD., U. Heidelberg, Germany)
1991-1993: William Russell (PhD., U. Virginia)
1991-1993: Xingjian Jiang (Ph.D., U. Illinois)
1990-1991: Jerome Chappellaz (Ph.D., U. Grenoble, France)
1987-1988: Ru-Ling Chou (Ph.D., City College of New York)
1986-1988: Katharine Prentice (Ph.D., Columbia University)

Doctoral Students Graduated (includes only students for whom I was the principal scientific advisor or co-principal scientific advisor)

2005: Jung-Eun Lee: "Water isotopes" (EPS), UC Berkeley
2003: Benjamin Lintner: "Interhemispheric transport of passive tracers" (Physics), UC Berkeley
1995: Aigou Dai. "Global precipitation variability and its relationship to other climate changes". PhD (Geology and Geophysics), Columbia University.
1990: Fenglin Yin. "Numerical modeling of ocean deep water circulation" Ph.D. (Applied Physics), Columbia University.
1989: Rosanne D'Arrigo. "Dendrochronologic modelling and reconstruction of climate variability." Ph.D. (Geology) Columbia University
1986: Katharine Prentice. "The influence of the terrestrial biosphere on seasonal atmosphere carbon dioxide: An empirical model." Ph.D. (Geography) Columbia University

Undergraduate Research Students Supervised

2003: Abigail Swann "Analysis of night-time NEE at the Euroflux Network" Senior Honors Thesis, Dept of Earth and Planetary Science, UC Berkeley
1996: Nina Molumby. "A quest for the missing sink: A theoretical calculation of the absorption of anthropogenic carbon dioxide". Senior Integrative Exercise, Carleton College
1988: Juliana Minkowitz. "Application of a one-dimensional numerical model of cloud and precipitative processes". B.A. Barnard College. Winner of "The 1988 Howard T. Orville Scholarship in Meteorology" of the American Meteorological Society.

High School Research Students Supervised

1991: Shuming Liu. "Interannual and longer-term changes in photosynthetic activity of Africa". Stuyvesant High School, New York. Entry in 1991 Westinghouse Science Competition
1990: Ann Cho. "Greenhouse warming and heat mortality". Stuyvesant High School, New York. Entry in 1990 Westinghouse Science Competition

UNIVERSITY, COLLEGE AND DEPARTMENTAL COMMITTEES

2004-2005: Member, EPS Long-Range Planning Committee
2003-2005: Member, ESPM Endowed Chairs and Awards Committee
2003-2004: Chair: Committee for the Environment
2003: Member, CNR New Directions Committee
2003-2004: Member, Townes Fellowship Committee, Space Sciences Laboratory
2002-2003: Lead, Coordinating Committee, Environment Initiative Proposal: "Future of the Planet"
2001-2002: Faculty Search Committee, Department of Geography
2000-2003: Member, Executive Committee, College of Natural Resources (CNR)
1999-2003: Member, Integrative Physical Sciences Building (Campbell Hall) Study Committee
1999-2002: University Committee on Fellowships and Graduate Scholarship
1998-2003: Member, Advisory Committee, Space Sciences Laboratory