

Acknowledgment

The United College Distinguished Visiting Scholar Committee acknowledges with thanks the generous grant from the United College Endowment Fund which has made possible the visit of Professor Inez Fung, Professor of Atmospheric Science, Department of Earth and Planetary Science and Department of Environmental Science, Policy and Management, University of California, Berkeley, to United College as our Distinguished Visiting Scholar in 2015-2016.

Distinguished Visiting Scholar Committee
United College



Professor Inez Fung

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Department of Earth & Planetary Science
Department of Environmental Science, Policy and Management

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UNITED COLLEGE
THE CHINESE UNIVERSITY OF HONG KONG
2015-2016 Distinguished Visiting Scholar Lectures

CO₂ Life Fantastic: the Global Carbon Cycle

Thursday, 15 October 2015, 4:30 pm,
LT1, Yasumoto International Academic Park, CUHK

二氧化碳的奇妙生命：全球碳循環

2015年10月15日(星期四), 香港中文大學康本國際學術園1號演講廳

Plants, Water and Climate

Tuesday, 20 October 2015, 4:30 pm,
LT7, Lee Shau Kee Building, CUHK

植物、水和氣候

2015年10月20日(星期二), 香港中文大學李兆基樓7號演講廳

Lectures in English 英語主講
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A Warm Welcome to Professor Inez Fung

Professor Inez Yau-Sheung Fung was born and raised in Hong Kong. She attended King's College, one of the most prestigious secondary schools in the city. Upon graduation in 1967, she went to America and enrolled in Utica College in New York State. She then transferred to Massachusetts Institute of Technology (MIT) and received both her S.B. (1971) and Sc. D. degrees (1977) there, in the fields of Applied Mathematics and Meteorology, respectively. Her doctoral dissertation, entitled 'The Organization of Spiral Rainbands in a Hurricane', was completed under the tutelage of Professor Jule G. Charney, one of the pillars of modern meteorology. Her thesis research not only won her the C.G. Rossby Award for Outstanding Thesis of the Year, but also the distinction of being the second woman to graduate from MIT with a doctorate degree in meteorology.

Professor Fung was appointed as a research associate of the US National Academy of Sciences in 1977-79. She was a member of the research staff of the Lamont-Doherty Earth Observatory at Columbia University in 1979-86. During the 1986-93 period, she served as a Physical Scientist at the NASA Goddard Institute for Space Studies in New York City. She also took adjunct faculty positions at Columbia University and the University of Washington. In 1993, she took up a professorial appointment at the School of

Earth and Ocean Sciences, University of Victoria in Canada. In 1998, she moved to University of California (UC), Berkeley, and was appointed the Richard and Rhoda Goldman Distinguished Professor in the Physical Sciences. She currently holds a joint appointment as a professor at UC Berkeley in the Department of Earth and Planetary Science as well as the Department of Environmental Science, Policy and Management. She is also the co-director of the Berkeley Institute of the Environment.

Professor Fung has served the research community in many different capacities. In 1996-98, she was an editor of the *Journal of Climate*, which is one of the most respected publications in the climate field. She was a contributing author to the Third and Fourth Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC). The contributions of this body were signified by the award of the Nobel Peace Prize in 2007. Professor Fung has played a pivotal role in compiling a joint report of the US National Academy of Sciences and the UK Royal Society on climate change. This document is based on the latest findings in the Fifth Assessment Report of IPCC, and is broadly circulated among the general public. She has recently been appointed as a member of the very influential National Science Board, which establishes national policy for scientific research in the US. As testimony of her outstanding qualities as an educator, she was bestowed the Distinguished Faculty Mentoring Award by the University of California Berkeley Graduate Assembly.

Throughout her distinguished career, Professor Fung has received awards and honours that are too numerous to list individually. Only a highly selected subset of these accolades is mentioned here. At a relatively early stage, she already became a Fellow of both the American Meteorological Society (1994) and the American Geophysical Union (AGU, 1996). Then came her election to membership of both the US National Academy of Sciences (2001) and Academia Sinica of Taiwan (2010). In 2004, she was awarded the AGU Roger Revelle Medal. In 2006, she was selected as a member of the 'Scientific American 50' by the popular publication Scientific American.

The scientific accomplishments of Professor Fung are succinctly summarized by the citation statements composed on the occasion of the award of the AGU Roger Revelle Medal to her. Specifically, this citation praises her pioneering role in laying the ground work in the new field of biogeoscience, her ingenuity in combining theory and measurements to prescribe observational constraints on complex processes, and her unique ability to bridge across the boundaries of traditional separate subdisciplines in the earth sciences. Professor Fung is also credited as the lead architect of computer simulations of the myriad interactions between the carbon cycle, other biogeochemical cycles, various physical components of the Earth System, and human society.

I first met Inez at the Goddard Space Flight Centre in Maryland in 1978, when I went on a job-hunting tour along the northeastern US coast. Although we did not have an opportunity to collaborate with each

other professionally, I have observed her achievements with admiration and interest, largely because of the common Hong Kong roots that we share. On the several occasions that we did see each other again during the past decades, such as academic conferences, or meetings of review boards for which we both serve as members, we have enjoyed conversations (mostly conducted in Cantonese) about the current status of our science, the scene in Hong Kong/China/Taiwan, etc. I am therefore particularly pleased that, despite her busy schedule, she has accepted our invitation to spend a considerable stretch of time with us as a Distinguished Visiting Scholar at United College. I very much look forward to her public lectures on our campus, which will for sure be fountains of inspiration and stimulation for our faculty colleagues and students alike. I also look forward to continuing the dialogue that we started more than 37 years ago. It is always a happy occasion to welcome a native daughter or son back to Hong Kong. Hopefully her visit to the Chinese University this time is the first of many more in the years yet to come.

Gabriel Lau
Institute of Environment, Energy & Sustainability
Department of Geography and Resource Management
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Lecture Synopsis – Lecture One

CO₂ Life Fantastic: the Global Carbon Cycle

二氧化碳的奇妙生命：全球碳循環

CO₂ is both friend and foe. This talk reviews the life cycle of CO₂ in the terrestrial biosphere, the oceans, the geosphere and the atmosphere, as well as recent perturbations of the carbon cycle. How do we know that the increase in atmospheric CO₂ is due to human activities? A new satellite, the Orbiting Carbon Observatory -2 (OCO2), launched on July 2 2014, is expected to provide global observations of CO₂ that would be useful for informing climate treaty verification.

Lecture Synopsis – Lecture Two

Plants, Water and Climate

植物、水和氣候

Afforestation is a good thing. It has been proposed as a mechanism to reduce atmospheric CO₂ and slow climate warming. We carry out “thought experiments” with a global climate model to explore the climate consequences of large-scale afforestation in the arctic, in mid-latitudes and the tropics. Because photosynthesis and transpiration shut down with droughts, the regional as well as remote climatic impacts vary with the availability of subsurface moisture. We present a new field study that probes the mysteries of subsurface moisture.

Selected Publications of Professor Inez Fung

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Nov 1988	Professor Robin M. NORRIS 羅理思教授 University of Auckland (Medicine)	Mar 1995	Professor James CAHILL 高居翰教授 University of California (Art History)

Year	Name and Institution (Discipline)
Nov 1995	Professor Graham FISHBURNE 費伯恩教授 University of Alberta (Education)
Mar 1996	Professor Shupeng CHEN 陳述澎教授 Institute of Remote Sensing Applications Chinese Academy of Science (Science)
Oct 1996	Professor Chia-ying YEh 葉嘉瑩教授 University of British Columbia (Asian Studies)
Nov 1996	Dr. Leroy CHIAO 焦立中博士 NASA Space Center (Space Science)
Mar 1997	Professor Gillian BROWN 鮑姬蓮教授 Cambridge University (English Language)
Dec 1997	Dr. David Da-i HO 何大一博士 Aaron Diamond AIDS Research Center (Medicine)
Mar 1998	Professor John W. REPS 韋約翰教授 Cornell University (City Planning)
Oct 1998	Professor Marilyn S. ALBERT 艾美蓮教授 Harvard Medical School (Psychology)
Mar 1999	Professor Harry HARDING 何漢理教授 The George Washington University (Political Science)
Nov 1999	Professor Janice MORSE 莫珍寧教授 University of Alberta (Nursing)

Year	Name and Institution (Discipline)
Feb 2000	Professor Arthur ELLIS 艾禮詩教授 University of Wisconsin-Madison (Material Science)
Nov 2000	Professor Kenneth DODGE 杜甘夫教授 Duke University (Educational Psychology)
Mar 2001	Professor Paul VANHOUTTE 尹浩德教授 Institut de Recherches Internationales Server (Medicine)
Nov 2001	Professor M. F. HAWTHORNE 霍桑教授 University of California, Los Angeles (Chemistry)
Mar 2002	Professor Richard ESTES 倪思迪教授 University of Pennsylvania (Social Work)
Nov 2002	Professor Tony F. CHAN 陳繁昌教授 University of California, Los Angeles (Mathematics)
Mar 2003	Professor Yuan T. LEE 李遠哲教授 Academia Sinica, Taiwan (Chemistry)
Mar 2004	Professor Zhi-an DONG 董治安教授 Shandong University (Chinese Language)
Mar 2004	Professor Zeng-yi QIAN 錢曾怡教授 Shandong University (Chinese Language)
Oct 2004	Professor Yuk-ling YUNG 翁玉林教授 California Institute of Technology (Planetary Science)
Feb 2005	Professor Michael C. CORBALLIS 郭敏豪教授 University of Auckland (Psychology)

Year	Name and Institution (Discipline)
Nov 2005	Professor Stanley N. COHEN 柯恩教授 Stanford University (Medicine)
Mar 2006	Professor Peter C. ORDESHOOK 歐德修教授 California Institute of Technology (Political Science)
Oct 2006	Professor F. Sherwood ROWLAND 羅蘭德教授 University of California, Irvine (Chemistry and Earth System Science)
Mar 2007	Professor YUAN Longping 袁隆平教授 China National Hybrid Rice R&D Center (Biology)
Nov 2007	Professor ZHANG Yaping 張亞平教授 Kunming Institute of Zoology, CAS (Zoology)
Oct 2008	Professor QIN Dahe 秦大河教授 State Key Laboratory of Cryospheric Sciences (Meteorology)
Oct 2010	Professor Kay DEAUX 杜爾琦教授 The City University of New York (Psychology)
Oct 2010	Professor Sam GLUCKSBERG 郭保山教授 Princeton University (Psychology)
Oct 2011	Professor Herman S. CHEUNG 張醒鐘教授 University of Miami (Medicine)
Oct 2012	Professor CHEN Yuan-Tsong 陳垣崇教授 Academia Sinica, Taiwan (Medicine)
Oct 2013	Professor CHIEN Shu 錢煦教授 University of California (Medicine and Engineering)

Year	Name and Institution (Discipline)
Oct 2014	Professor David C. GEARY 大衛·格爾瑞教授 University of Missouri (Psychology, Neuroscience)
Oct 2015	Professor Inez FUNG 馮又嫦教授 University of California, Berkeley (Atmospheric Sciences)

Mission of the College

In elaborating the College motto “Make One’s Virtues Shine and Renew the People”, United College strives to serve the people of Hong Kong and China and the world through integrative education, pastoral care as well as moral and spiritual enhancement of the young.