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Xue Long 2's 2024 Visit to Hong Kong

Global Conference on Climate Change: Polar Studies, Environment and Climate Change

9–10 April 2024

Content

About the Conference

Background and Objectives

Polar regions are of significant academic interest including but not limited to oceanography, glacier and geological science, ecology and environmental science, marine natural resources, tourism, shipping and other studies related to human and social science. As pieces of unexplored area on the Earth, the exchange of recent research outcomes is of prime importance particularly when the various shipping channels in the Antarctic have caught geographic and political attention.

China has been a signatory to the Antarctic Treaty since 1983 and started its first Antarctic scientific exploration in 1984. The visit of the Xue Long 2 research vessel to the Hong Kong SAR in April 2024, which marks the completion of China's 40th Antarctic expedition, will serve as a timely reminder of the pressing need for climate solutions in Hong Kong – a coastal city vulnerable to rising sea levels and extreme weather events, the region and the world.

The Global Conference on Climate Change: Polar Studies, Environment and Climate Change seeks to facilitate collaboration, knowledge exchange and solution-based discussions among scientists, researchers, policymakers, industry leaders, and community representatives worldwide through a multidisciplinary and multifocal approach.

Strategic Partners

香港科技協進會
The Hong Kong Association for the Advancement of Science & Technology

INTERNATIONAL UNIVERSITIES CLIMATE ALLIANCE

Polar Research Institute of China 1989

20th 1989-2009 ANNIVERSARY PRIC

Funding Organisation

創新科技署
Innovation and Technology Commission

政府資助計劃
Government-funded programme

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Sponsors

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Conference Agenda

Day 1

09:00–09:30	Opening
09:45–10:15	Keynote speeches (1-2)
10:15–10:45	Networking break
10:45–12:30	Plenary session – Polar ocean environment research (Session 1)
12:30–14:00	Lunch break
14:00–15:45	Plenary session – Climate change research and innovative solutions (Session 2)
15:45–16:15	Networking break
16:15–17:30	Breakout session – Climate action and partnerships for the goals (Session 3) Breakout session – Climate change and global ecosystems (Session 4)

Day 2

09:00–09:10	Address
09:10–09:30	Keynote speech (3)
09:30–10:00	Networking break
10:00–11:45	Breakout session – Dome A science: deep ice core science and deep ice exploration (Session 5) Breakout session – Dome A science: Astronomy from Antarctica (Session 6)
11:45–13:15	Lunch break
13:15–14:30	Breakout session – Climate change and sustainable development: Navigating polar challenges (Session 7) Breakout session – Climate change and marine biodiversity (Session 8)
14:30–16:00	Student session – A dialogue with the scientists of Xue Long 2 (Session 9)
16:00–16:20	Closing
16:20–17:00	Post-conference networking coffee

Day 1

9 April

Professor Rocky S Tuan

Vice-Chancellor and President
The Chinese University of Hong Kong

Lee Quo Wei and Lee Yick Hoi Lun
Professor of Tissue Engineering and
Regenerative Medicine

Biography

Professor Rocky S Tuan is a world-renowned biomedical scientist specializing in regenerative medicine. He received his PhD in Life Sciences from Rockefeller University in 1977 and has authored >550 research publications. He had held various academic and administrative positions at the University of Pittsburgh and research leadership position at the National Institutes of Health before he assumed the presidency of CUHK in 2018.

He was elected to the fellowships of National Academy of Inventors, Chinese Association of Inventions, American Association of Anatomists, Orthopaedic Research Society, and Tissue Engineering and Regenerative Medicine International Society for his accomplishments in innovation and translational research.

Ms Chen Danhong

Director General, Department of International Cooperation, Ministry of Natural Resources

Biography

Ms Chen Danhong presently serves as the Director General of the International Cooperation Department of the Chinese Ministry of Natural Resources. She dedicates her career time to collaboration and cooperation in the fields of marine and polar affairs as well as global governance. She carries several roles such as National Focal Point for International Oceanographic Commission (IOC/UNESCO), PEMSEA's National Focal Point in China as well as Intergovernmental Session Chair. She published several research papers on polar management, polar environmental protection and blue economy.

The Hon Ma Fung-kwok GBS, JP

Chairman, Organizing Committee for Xue Long 2's visit to Hong Kong and Member of the Legislative Council of the HKSAR Government

Biography

Mr Ma Fung-kwok is a senior film producer and distributor who has contributed in the production of many popular films. Mr Ma Fung-kwok is keen to participate in the development of Hong Kong's cultural and creative industries, as well as actively participate in state affairs. He is a Five terms Legislative Council members (currently in the election committee constituency), and a Hong Kong deputy to the National People's Congresssince 2002. He is currently the President of the China Federation of Literary and Art Circles Hong Kong Member Association Limited. He was appointed by the government as the Chairman of the Hong Kong Arts Development Council and Hong Kong Film Development Council, and a member of the cultural committee of the Home Affairs Bureau and the West Kowloon Cultural District Authority Board.

In 2004 and 2020, Mr Ma Fung-kwok was awarded the Silver Bauhinia Star and the Gold Bauhinia Star respectively by the Hong Kong Government, and was awarded an Honorary University Fellow by the Hong Kong Baptist University in 2019 in recognition of his outstanding performance in public and social service.

The changing Antarctic and the Chinese Antarctic research expedition

Dr Zhang Beichen

Deputy Director
Polar Research Institute of China

Biography

Dr Zhang Beichen presently serves as the Deputy Director of Polar Research Institute of China. He was the station leader of Chinese Zhongshan Station, Antarctic in the 29th CHINARE. He was also the team leader and chief scientist of the 11th Chinese Arctic Research Expedition, and the 38th and 40th Chinese Antarctic Research Expedition. He has strong interest in the study of polar upper atmospheric physics. He published more than 70 papers in his research field.

Abstract

Changes in both natural and human activities in Antarctica are briefly introduced. Chinese Arctic and Antarctic Research Expedition (CHINARE) is carried out to uphold the basic concepts of peace, science, green, shared governance under Antarctic Treaty system, and safeguard the stability of Antarctic Treaty Consultative Meeting (ATCM). Since Antarctica is closely related to other parts of our planets, special emphasis is paid to the scientific contribution by Chinese scientists. The implementation of CHINARE-40 is also introduced.

Hong Kong's climate action plan 2050: What's next?

Mr Wong Kam-sing

GBS, JP

Chairman, Wu Zhi Qiao (Bridge to China) Charitable Foundation

Biography

Between 2012 and 2022, Wong was appointed as the Secretary for the Environment, Hong Kong SAR Government. During his 10-year tenure, he launched a number of sustainability policy blueprints on climate actions, energy saving, clean air, popularisation of electric vehicles, waste reduction and recycling, and biodiversity, leading Hong Kong towards carbon neutrality before 2050.

Wong is currently Chairman of Wu Zhi Qiao (Bridge to China) Charitable Foundation, Distinguished Department of Architecture Fellow at The University of Hong Kong, and Honorary Professor at Hong Kong Chu Hai College. Wong has been trained as an architect with expertise on sustainable built environment.

Abstract

Climate change is a global challenge. In 2020, China announced its "dual carbon" goals, i.e., to reach carbon peaking before 2030 and carbon neutrality before 2060. Hong Kong SAR Government (HKSARG) subsequently declared its pledge to achieve carbon neutrality before 2050, and in 2021 further published the Hong Kong's Climate Action Plan 2050. Hong Kong peaked its carbon emissions in 2014, with the per capita carbon emissions reduced from the peak level of 6.2 tonnes in 2014 lowered to about 4.5 tonnes in recent years. HKSARG also planned a mid-term target to reduce the total carbon emissions by half before 2035 from the 2005 level.

In line with the spirit of the Paris Agreement, HKSARG should conduct a review of its climate action plan about every five years to keep up with the times. As such, how should the current climate adaptation, resilience and mitigation strategies and targets in Hong Kong's climate action plan be reviewed ad updated through the next round of publication? In view of the climate emergency, how should Hong Kong advance and accelerate its climate actions, including the participation for all?

Polar ocean environment research

SESSION CHAIR

Professor Yang Huigen

Polar Research Institute of China

Synopsis

The Arctic and Southern Ocean is an integral part of the earth system and a key region of the global climate change. To enhance understanding of the ocean-climate nexus in polar regions to predict, mitigate, and build resilience to the effects of climate change across all geographies, especially to middle and low latitudes, is within the core of goals of the Chinese National Arctic/Antarctic Research Expeditions (CHINARE). The Panelists of this session will present overview on China's interests in and international cooperation on Arctic and Antarctic research, report on China's achievements with its infrastructure development such as with the Icebreaker Xuelong 2, and highlight on some of China's polar research findings, such as on the marine ecosystem and primary productivity changes with the Southern Ocean under the global warming, and on the sea ice rapid changes with the Arctic Ocean responding to the Arctic amplification of climate warming. Proposals on future research direction and international cooperation will be presented and welcome for discussion in the session.

PANELISTS

Professor He Jianfeng
Polar Research Institute of China

Professor Lei Ruibo
Polar Research Institute of China

Professor Feng Yuanyuan
Associate Professor, School of Oceanography, Shanghai Jiao Tong University

Mr Huang Rong
Polar Research Institute of China

Climate change research and innovative solutions

SESSION CHAIR

Professor Kwan Mei-po

Choh-Ming Li Professor of Geography and Resource Management, and Co-convenor, Organizing Committee of Global Conference on Climate Change

Synopsis

This session brings together esteemed experts from diverse backgrounds to address the pressing issue of climate change and explore transformative solutions for a sustainable future, covering various topics such as space technology, policy frameworks, and in-situ observation. The five experts give informative and insightful presentations, shedding light on the role of space technology in monitoring environmental changes caused by climate change, environmental law/governance necessary to address the challenges, the causes and impacts of extremely warm events in polar regions, the key techniques for polar sea ice observation, and the importance of drilling to the bedrock beneath glacier as well as experiment of IBED during summer seasons of CHINARE 35th and 40th. This session offers an exceptional opportunity to explore a diverse array of topics related to climate change research and provides a comprehensive understanding and valuable perspectives.

PANELISTS

Professor Dr Erna Sri Adiningsih
Executive Director, Indonesian Space Agency Secretariat National Research and Innovation Agency

Professor Daniel Guttman
Professor, Tianjin University Law School

Professor Zhou Wen
Professor, Atmospheric Science, Fudan University

Professor Dou Yinke
Associate Dean/ Professor, College of Electrical and Power Engineering, Taiyuan University of Technology

Professor Zhang Nan
Associate Professor, College of Construction and Engineering, Jilin University

Climate action and partnerships for the goals

SESSION CHAIR

Dr Edward Doddridge

Senior Research Associate, Institute for Marine and Antarctic Studies, University of Tasmania

Synopsis

The Role of Universities in Climate Research, Collaboration & Knowledge Exchange

Universities have a leadership role to play in creating diverse partnerships to accelerate action on climate and to enable the realization of the commitments of the 2015 Paris Agreement.

In this session, speakers from three universities within the International Universities Climate Alliance (IUCA) will showcase their work and explore the importance of international collaboration and knowledge exchange.

Polar regions are particularly affected by climate change, warming much more rapidly than the rest of the globe. In turn, climate change at high latitudes can affect the whole globe climate through changes in deep and bottom water formation. Dr Laurie Menviel of UNSW Sydney will provide an overview of the potential changes in deep and bottom water formation over the coming century and their impact on climate.

PANELISTS

Professor Laurie Menviel
Associate Professor, Climate Change Research Centre, University of New South Wales

Professor Binod Dawadi
Associate Professor, Central Department of Hydrology and Meteorology, Tribhuvan University

Dr Chen Zhao
ARC DECRA Fellow and ice sheet modeller, Institute for Marine and Antarctic Studies, University of Tasmania

Climate change and global ecosystems

SESSION CHAIR

Professor Amos Tai

Director, Earth System Science Programme, The Chinese University of Hong Kong

Synopsis

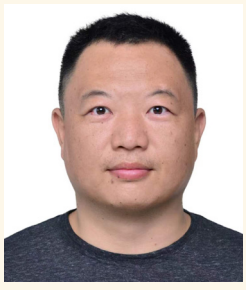
Climate change, one of the greatest threats humanity has faced, is also wreaking havoc on natural ecosystems of all sorts and all places. Rising temperatures, more extreme weather events, changing precipitation patterns, and disappearing habits resulting from climate change are harming life and biodiversity all across the globe, from the poles to the tropics. In this session, renowned experts will share their insights from their research on the current "health status" of polar, marine, aquatic and tropical ecosystems under climate change, and explore how these ecosystems can be made more climate-resilient.

PANELISTS

Professor Eduardo Maeda
Associate Professor, Department of Geosciences and Geography, University of Helsinki

Professor Luo Wei
Polar Research Institute of China

Professor Yun Fat Lam
Associate Professor, Department of Geography, The University of Hong Kong



Dr Hao Qiang
Associate Researcher, Second Institute of Oceanography, Ministry of Natural Resources

Professor Lena Qiying Ma
Chair Professor, College of Environmental & Resource Science, Zhejiang University

Day 2

10 April

Professor Simon K L Wong BBS, JP

Chairman, Environmental Campaign Committee, The Government of the Hong Kong Special Administrative Region

Biography

Graduated from The University of New South Wales, Simon is an entrepreneur with a strong engineering background. He is currently the Chairman and Chief Executive Officer of LH Group (HKEx: 1978).

He is also the Founding Chairman of Hong Kong Japanese Food and Cuisine Association, the Chairman of Quality Tourism Services Association and the Honorary President of Institute of Dining Professionals. He is actively making innovative changes to the Food & Beverage industry and promoting environmental-friendly and socially responsible policies. The College of Business, CityU Hong Kong appointed him as an Adjunct Professor in 2019.

Simon was appointed as a Justice of the Peace in 2014 and was awarded the Bronze Bauhinia Star by the HKSAR Government in 2021. His public sector engagements include serving in various roles, such as Chairman of Environmental Campaign Committee, Chairman of Catering Industry Training Advisory Committee, Vice-chairman of Community Care Fund, Vice-chairman of Employees Retraining Board and Member of Hong Kong Tourism Board.

To know more about Simon, please visit: https://www.facebook.com/poorsimon

Climate change adaptation for water security through engineering innovation

Professor Joseph H W Lee

President, Macau University of Science and Technology

Biography

Professor Joseph Hun-wei Lee is President and Chair Professor of the Macau University of Science and Technology, and immediate Past President of the International Association for Hydro-environmental Engineering and Research (IAHR). He is a Fellow of the Royal Academy of Engineering and the Hong Kong Academy of Engineering Sciences. His research interest revolves around the use of hydro-environment modelling to address climate-change induced impacts on water security: eco-hydraulics related to dynamics of algal blooms and red tides, AI and real time water quality forecasting systems, and urban flood control. He is the mastermind behind the WATERMAN coastal water quality forecast and management system, and a member of the Red Tide Expert Advisory Group of the Hong Kong Agriculture, Fisheries and Conservation Department.

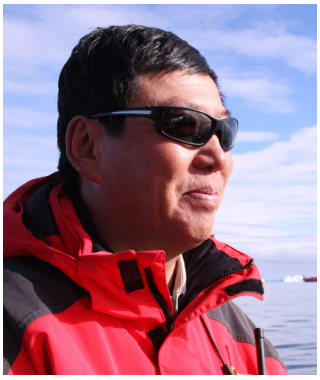
Abstract

We have been adapting to climate change-induced impacts to water security over the past two decades: increasing extreme rainfall intensities and dangerous flooding in urban centers, more severe storm surges and rising sea levels threatening the safety of coastal infrastructure and residents, and rising temperatures that trigger more frequent harmful algal blooms with challenges to environmental and fisheries management. Innovation and technology has an important role to play in addressing and adapting to climate change.

Drawing on my research in Hong Kong and Macao, I will use several examples to illustrate how long term research coupled with artificial intelligence (AI)-based hydro-environmental modeling can help combat climate change.

Dome A science:

Deep ice core science and deep ice exploration



SESSION CHAIR

Professor Li Yuansheng

Polar Research Institute of China / East China Normal University

Synopsis

This comprehensive session delves into the latest advancements in polar environmental research. Over the past two decades, researchers have made remarkable strides in unraveling the mysteries of the polar environment. This session offers insights into cutting-edge developments in polar remote sensing, meteorology, and climate change in polar regions. Additionally, the session will spotlight the significant progress in comprehending the unique environment of Dome A, the summit of the Antarctic Ice Sheet, shedding light on findings, methodologies, and challenges faced during investigations of the snow and ice surroundings.

PANELISTS

Professor Shi Guitao
School of Geographic Sciences, East China Normal University

Professor Cheng Xiao
School of Geospatial Engineering and Science, Sun Yat-sen University

Professor Wang Rujian
School of Ocean and Earth Science, Tongji University

Professor Ding Minghu
Institute of Global Change and Polar Meteorology, Chinese Academy of Meteorological Sciences

Professor Pang Hongxi
School of Geographic and Oceanographic Sciences, Nanjing University

Dr Fan Xiaopeng
College of Construction Engineering, Jilin University

Professor Yan Yuzhen
School of Ocean and Earth Science, Tongji University

Dome A science:

Astronomy from Antarctica

SESSION CHAIR

Professor Shang Zhaohui

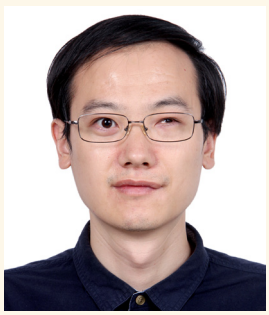
National Astronomical Observatories, Chinese Academy of Sciences

Synopsis

Dome A is the highest place on the ice sheet in Antarctica and has been demonstrated to have the best conditions for astronomical observations on the ground. This year is the 20th anniversary of the first Dome A traverse during the 21st Chinese Antarctic Research Expedition (CHINARE). In this session, we will summarize the research in Antarctic Astronomy over the past 20 years, including both time-domain astronomy and astronomical site testing studies.

PANELISTS

Professor Li Zhengyang
Nanjing Institute of Astronomical Optics & Technology, Chinese Academy of Sciences



Professor Ma Bin
School of Physics and Astronomy, Sun Yat-sen University

Dr Hu Yi
National Astronomical Observatories, Chinese Academy of Sciences

Professor Ren Yuan
Purple Mountain Observatory, Chinese Academy of Sciences

Climate change and sustainable development: Navigating polar challenges

SESSION CHAIR

Dr William Yu

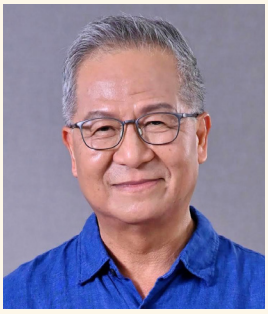
Chief Executive Officer
World Green Organisation

Synopsis

This session centers on the critical interplay between polar studies, environmental science, and climate change, with a particular focus on the current phenomena impacting the polar regions. Our distinguished panelists bring a wealth of expertise in polar policy research, international relations, and natural science, offering unique perspectives on the geopolitical and environmental challenges facing the Arctic and Antarctic.

The discussion will delve into the latest research on polar geopolitics, security, and the potential impacts of global warming on international trade, particularly through the lens of Arctic shipping routes. The session will also address the importance of understanding the current status of climate change and assessing whether we have reached critical tipping points, such as irreversible ice melt and shifts in ocean circulation patterns.

PANELISTS



Professor Leung Wing Mo
Former Assistant Director, The Hong Kong Observatory

Professor Elvis Au, BBS
Co-founder of IESG Technologies Ltd

Dr Deng Beixi
Polar Research Institute of China

Mr Zhu He
China Architecture Design and Research Group

Climate change and marine biodiversity

CHAIRMAN

Professor Jerome Hui

Director, Biology Programme, The Chinese University of Hong Kong

Synopsis

Biodiversity refers to the variety of life, ranging from animals, plants, fungi, and microorganisms that make up our world. These different life forms live and work together in the ecosystem to support one another, and are directly related to humans. Environmental changes associated with climate change together with anthropogenic activities are now disturbing the natural habitats and threatening their associated biodiversity at an unprecedented level. Such biodiversity losses can directly impact humans especially when ecosystem services can no longer meet societal needs. In this section, speakers will introduce their studies on biodiversity and their relationships to climate change at different places around the globe.

PANELISTS

Professor Deng Wenhong

Professor, College of Life Sciences, Beijing Normal University

Professor Liu Yang

Professor, Fisheries College, Ocean University of China

Professor Sukree Hajisamae

Associate Professor, Faculty of Science and Technology, Prince of Songkla University

Professor Bayden Russell

Associate Professor, School of Biological Sciences, Faculty of Science, The University of Hong Kong

Dr Ng Cheuk Wing Margaret

Senior Lecturer, Department of Curriculum and Instruction, The Education University of Hong Kong

A dialogue with the scientists of Xue Long 2

MODERATOR

Ms Natalie Chung

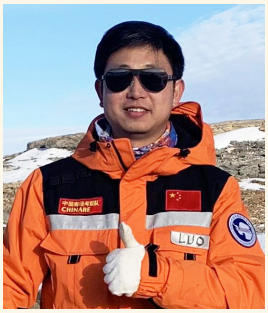
MoCC Scholar, Jockey Club Museum of Climate Change, The Chinese University of Hong Kong

Synopsis

Intergenerational Lens at the Polar Frontiers: Unveiling Challenges, Discoveries and Collaborative Endeavours

This thought-provoking session invites the students to explore the polar research through the intergenerational lens of diverse perspectives. The session aims to foster a dialogue between the students and the Xuelong 2 scientists in understanding the challenges, discoveries and collaborative endeavours at the polar frontiers, shedding light on the unique insights and contributions each generation brings to polar research. Through engaging discussions and shared narratives, the session seeks to inspire intergenerational connections and collective action towards environmental stewardship in polar regions and beyond.

SPEAKER



Mr Luo Guangfu
Senior Engineer,
Polar Research
Institute of China

PARTICIPATING STUDENTS

Miss Ching Wai
Biology (Year 3), The Chinese University of Hong Kong

Mr Wong Cheuk-hang Ivan
Earth and Environmental Sciences (Year 5)
The Chinese University of Hong Kong

Miss Wong Lok-ying Lorraine
Geography and Resource Management (Year 4)
The Chinese University of Hong Kong

Miss Zhuang Zi-yue
Form 6, Pui Kiu College

Mr Lee To-sang Damon
Form 5, Pui Ching Middle School

Miss Chow Wing-Sum Winsome
Form 5, Pui Ching Middle School

Professor Ho Kin-chun SBS, JP

Founder
Polar Research Institute of Hong Kong

Biography

Professor Ho has a wide spectrum of academic interests, including harmful algal blooms (red tide and blue green algae), water quality and water environment management, environmental policies (cross-border environmental cooperation, EIA, environmental legislation and sustainable development), environmental ethics (environmental philosophy and ecological theology), environmental education (green schools, NGO and community environmental actions) and polar research. Professor Ho has published about 40 books and more than 400 academic papers in journals and proceedings, >20 technical reports for the Government and Corporations and, 8 sets of distance-learning study materials. With regard to polar research, Professor Ho visited Antarctica four times and the higher arctic more than twenty times. He holds a prestigious position in his academic research areas and has obtained numerous honours and awards at local, regional and international levels. In December 2023, Professor Ho was elected the Foreign Academician of the European Academy of Natural Sciences.

Professor Chan Wai-Yee

Pro-Vice-Chancellor (Strategic Developments), The Chinese University of Hong Kong and Co-convenor, Organizing Committee of Global Conference on Climate Change

Biography

Professor Chan Wai-Yee obtained his BSc (Hon. 1st Class) in Chemistry from The Chinese University of Hong Kong (CUHK) in 1974 and PhD in Biochemistry from the University of Florida in 1977. From 1979 to 2009, he served consecutively as tenured Assistant to Full Professor of Pediatrics, Biochemistry and Molecular Biology at the University of Oklahoma Health Science Center, Oklahoma City, and the Georgetown University Medical Center, Washington, DC, USA. In 2001, he was jointly appointed at the US National Institutes of Health and co-founded the Laboratory of Clinical Genomics. In June 2009, Professor Chan established CUHK's School of Biomedical Sciences and served as the Founding Director and Chair Professor of Biomedical Sciences. He was appointed Master of CW Chu College in January 2017, as Pro-Vice-Chancellor (Strategic Developments)/Vice President of CUHK in August 2018 and Li Ka Shing Professor of Biomedical Sciences in May 2020. He is also Director of Institute for Tissue Engineering and Regenerative Medicine (iTERM) and as Co-Director of a number of Joint Laboratories established between CUHK and Institutes of the Chinese Academy of Sciences and several Mainland universities.

Professor Chan is very active in the scientific community, both locally and internationally. He has served as President of the Association of Chinese Geneticists in America, a Member of the Development Committee of the Society for the Study of Reproduction in the USA, and the immediate past President of Hong Kong Institution of Science. Besides being a Council Member of the Shaw Prize Foundation, he also serves as Member of the Hospital Authority Board, Chair of the Hospital Governing Committee of North District Hospital, Member of the Research Grant Council, Director of the Board of the Hong Kong Genome Institute, and a Specialist for the Hong Kong Council for Accreditation of Academic and Vocational Qualifications.