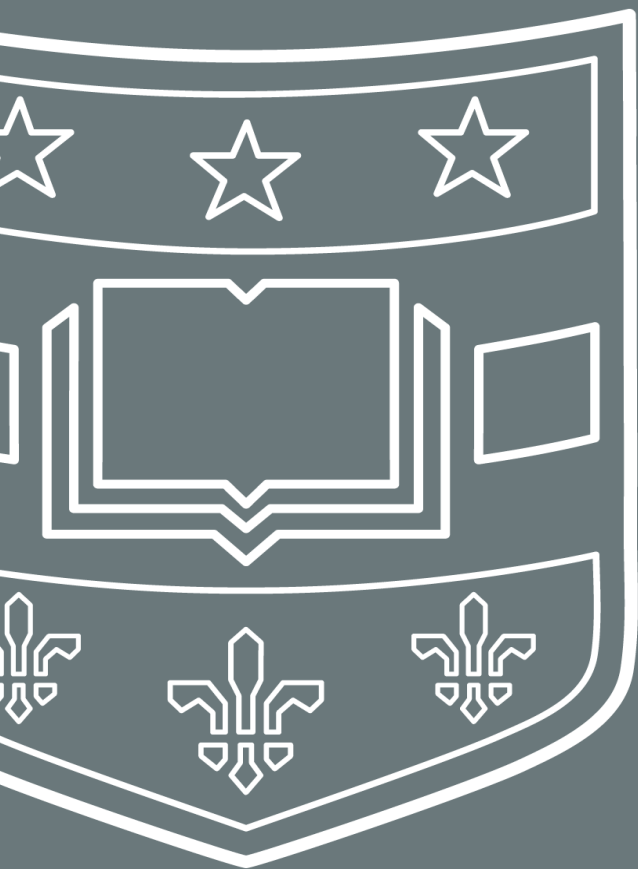




**Washington University in St. Louis**  
**FORUM FOR GREATER CHINA**

**How Energy Choices Affect  
Agriculture, the Environment, and Health**

**TAIPEI | JANUARY 18, 2018**



# Forum for Greater China

## How Energy Choices Affect Agriculture, the Environment, and Health

Through its McDonnell International Scholars Academy, Washington University has developed close, strategic partnerships over the past decade within Greater China. These partners include China Agricultural University, The Chinese University of Hong Kong, Fudan University, Hong Kong University of Science and Technology, National Chiao Tung University, National Taiwan University (Taipei), Peking University, Tsinghua University, the University of Hong Kong, and Xi'an Jiaotong University.

Today, the university is positioned to have an even more substantial presence and impact in the greater China region, including mainland China, Hong Kong, and Taiwan with the Forum for Greater China. This one-day conference is an opportunity for business leaders, high-level officials, and university administrators and alumni to explore important issues affecting Greater China today.

Washington University's second Forum for Greater China will address how energy choices affect agriculture, the environment, and health, specifically in relation to climate change. Washington University experts will lay out the energy choices, agricultural implications, and health effects of the issue through three keynote speeches, followed by panel discussions with leading U.S. and Chinese corporate, government, and educational leaders.



“The Forum for Greater China will enhance the university’s leadership role in addressing one of the greatest challenges facing us today: the effects of climate change on human health.”

—Chancellor Mark S. Wrighton



“Energy generating choices will impact air quality; new methods will be needed to meet the region’s growing energy demand without increasing greenhouse gas emissions.”

—Forum Keynote Speaker  
Pratim Biswas, PhD



“Studying how plant life adapts to climate change will be critical to ensuring food stability in the region and around the world.”

—Forum Keynote Speaker  
Barbara A. Schaal, PhD



“Climate change means we need to add health consequences when making energy choices for communities across the world.”

—Forum Keynote Speaker  
William G. Powderly, MD

**SESSION I**  
**Energy Choices**

Grand Hyatt Taipei  
Grand Ballroom

**10:00 am**    **Welcome Remarks  
& Introductions**

**Chancellor Mark S. Wrighton**  
Washington University in St. Louis

**10:30 am**    **Keynote Address**

**Professor Pratim Biswas**  
Washington University in St. Louis  
*"The Energy Environment Nexus:  
Impact on Air Quality"*

**11:15 am**    **Panel Presentations  
& Discussion**

Moderated by  
**Professor James V. Wertsch**  
Washington University in St. Louis

Panelists:

**Professor Hsunling BAI**  
Professor, Institute of Environmental  
Engineering, National Chiao Tung University

**Professor Jingkun JIANG**  
Associate Professor, Division of Air Pollution  
Control, Department of Environmental Science  
and Engineering, Tsinghua University

**Professor Chuen-Jinn TSAI**  
Chair Professor, Institute of Environmental  
Engineering, National Chiao Tung University

**12:15 pm**    **Buffet Lunch**  
**Grand Ballroom**  
**Foyer**

**SESSION II**  
**Global Agriculture**

Grand Hyatt Taipei  
Grand Ballroom

**2:00 pm**      **Keynote Address**

**Dean Barbara Schaal**  
Washington University in St. Louis

*“Global Challenges to Agriculture”*

**2:45 pm**      **Panel Presentations  
& Discussion**

Moderated by  
**Professor James V. Wertsch**  
Washington University in St. Louis

Panelists:

**Professor Bao-Ji CHEN**  
Professor, Department of Animal Science  
and Technology, College of Bioresources and  
Agriculture, National Taiwan University

**Professor Tuan-Hua David HO**  
Distinguished Research Fellow, Institute of  
Plant and Microbial Biology, Academia Sinica;  
Professor Emeritus, Department of Biology,  
Washington University in St. Louis

**Professor Huu-Sheng LUR**  
Dean, College of Bioresources and Agriculture,  
Department of Agronomy, National Taiwan  
University

**3:30 pm**      **Tea Break**  
**Grand Ballroom**  
**Foyer**

**SESSION III**  
**Health Effects**

Grand Hyatt Taipei  
Grand Ballroom

4:00 pm	<b>Keynote Address</b>	<b>Dr. William G. Powderly, MD</b> Washington University in St. Louis <i>“Maintaining human health on a changing planet.”</i>
4:45 pm	<b>Panel Presentations &amp; Discussion</b>	Moderated by <b>Professor James V. Wertsch</b> Washington University in St. Louis  Panelists:  <b>Professor Wenjia CAI</b> Associate Professor in Global Change Economics, Department of Earth System Science, Tsinghua University  <b>Professor Paul Kay Sheung CHAN</b> Chairman, Department of Microbiology, Faculty of Medicine, The Chinese University of Hong Kong  <b>Professor Chang-fu WU</b> Professor, Associate Dean, Department of Public Health, College of Public Health National Taiwan University
5:30 pm	<b>University Presidents Panel Grand Ballroom</b>	Moderated by <b>Chancellor Mark S. Wrighton</b> Washington University in St. Louis <ul style="list-style-type: none"><li>• <b>Dr. Ching-Ray Chang</b>, Executive Vice President for Administrative Affairs, National Taiwan University</li><li>• <b>Dr. Mau-Chung Frank Chang</b>, President, National Chiao Tung University</li><li>• <b>Professor Fanny M.C. Cheung</b>, Pro-Vice-Chancellor, The Chinese University of Hong Kong,</li><li>• <b>Professor Mai Har Sham</b>, Associate Vice-President (Research), The University of Hong Kong</li><li>• <b>Professor Xi Guang</b>, Vice President (International Affairs), Xi’an Jiaotong University</li></ul>

**EVENING EVENTS**  
**Thursday, January 18**

- |                |   |
|----------------|---|
| <b>6:30 pm</b> | <b>Reception</b><br>Grand Ballroom<br>Foyer |
| <b>7:30pm</b>  | <b>Gala Dinner</b><br>Grand Ballroom        |

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**ROUNDTABLE DISCUSSIONS**  
**Friday, January 19**

- |                           |  |   |
|---------------------------|--|---|
| <b>9:00 am - 12:00 pm</b> | <b>Round Table Discussions</b><br>Phoenix Room | Moderated by<br><b>Professor Pratim Biswas</b><br>Washington University in St.<br>Louis |
| <b>12:00 pm - 1:00 pm</b> | <b>Lunch</b><br>Crane Room                     |   |

# FORUM FOR GREATER CHINA

## Impact of Energy Choices on Agriculture, the Environment, and Health

Scientists have long been documenting the environmental impacts of a changing climate, but the agricultural impacts and health effects of climate change are less well known.

Major regions, such as the greater China region, are especially susceptible to the effects of climate change. While Mainland China, Hong Kong, and Taiwan have made tremendous progress in cutting greenhouse gas emissions and increasing the use of renewable energy, more work is needed to shield citizens both in the region's densely populated cities and in its vast rural areas from significant challenges in the decades to come.

Washington University has, through scientific discovery and exploration, contributed to findings that reveal the ramifications of global climate change. The university has taken the initiative to share its findings with the global community and is dedicated to helping institutions and countries around the world address these challenges.

The Forum for Greater China will bring together university and business leaders from Mainland China, Hong Kong, Taiwan, and the U.S. to identify ways to reduce the agricultural and health impacts of climate change while meeting the nation's growing energy needs.

## FACTS TO EXPLORE

- Mainland China is the world's largest producer of greenhouse gases, but the country plans to get 20 percent of its energy from non-fossil fuel by 2030.
- Hong Kong plans to reduce its carbon intensity by 65 to 70 percent by 2030.
- By 2025, Taiwan plans to get 20 percent of its electricity from renewable energies and has pledged to transition to a nuclear power-free homeland.
- Rainfall, floods, sea-level, heat waves, droughts, and dust storms have increased dramatically in the greater China region, affecting both health and agriculture.
- In Mainland China, 45 percent of all deaths result from cardiovascular disease and stroke, conditions that are exacerbated by the effects of climate change.
- The Intergovernmental Panel on Climate Change estimates that higher temperatures and lower rainfall amounts could reduce yields of crops like rice, wheat, and maize between 20 and 36 percent over the next 20 to 80 years.



## SPONSORS

Thank You to our sponsors for supporting the meeting and events during the Forum, and for their continued commitment to our partnership.



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## KEYNOTE SPEAKER



**PRATIM BISWAS, PhD**  
WASHINGTON UNIVERSITY IN ST. LOUIS

Chair, Department of Energy, Environmental & Chemical Engineering  
Lucy & Stanley Lopata Professor  
Assistant Vice Chancellor for International Affairs - India

Pratim Biswas is an international leader in the field of aerosol science and technology. A leader of energy and environmental initiatives at Washington University and department chair, he has grown the world's first Department of Energy, Environmental & Chemical Engineering into a research center for finding solutions to global energy problems. Biswas is the ambassador to the Indian Institute of Technology Bombay and a member of the steering committee for the McDonnell International Scholars Academy at Washington University in St. Louis, which for 10 years has worked with partner institutions around the world to meet our energy needs without adverse effects on the environment or human health.

## KEYNOTE SPEAKER



**BARBARA A. SCHAAL, PhD**  
WASHINGTON UNIVERSITY IN ST. LOUIS

Dean of the Faculty of Arts & Sciences  
Mary-Dell Chilton Distinguished Professor  
Department of Biology

Barbara Schaal was among the first plant scientists to use molecular biology-based approaches to understand evolutionary processes in plants, and she has worked to advance understanding of plant molecular systematics and population genetics. Her recent work includes researching the evolutionary genetics of plants. A member of the National Academy of Sciences since 1999, she was elected vice president of the academy in 2005 and 2009. President Barack Obama appointed Schaal to the President's Council of Advisors on Science and Technology in April 2009, and in 2012 she was appointed as one of three new science envoys to advise the White House, the U.S. Department of State, and the U.S. scientific community.

## KEYNOTE SPEAKER



**WILLIAM G. POWDERLY, MD**  
WASHINGTON UNIVERSITY IN ST. LOUIS

Larry J. Shapiro Director, Institute for Public Health  
Co-Director, Division of Infectious Diseases  
Dr. J. William Campbell Professor of Medicine

William Powderly conducts groundbreaking research to translate significant advances in biomedical science into improvements in population and community health. He has been actively involved in HIV-related clinical research for almost 30 years and has been a member of numerous advisory groups on infectious diseases for the National Institutes of Health, the U.S. Centers for Disease Control and Prevention, the Canadian Institutes of Health Research, and the European Medicines Agency. A fellow of the Royal College of Physicians of Ireland and the American Association for the Advancement of Science, he is also president of the Infectious Diseases Society of America.



**HSUNLING BAI**  
NATIONAL CHIAO TUNG UNIVERSITY

Professor, Institute of Environmental Engineering

Dr. Hsunling Bai currently works as a professor at the Institute of Environmental Engineering, National Chiao Tung University. She served twice as the Chairperson for her Institute. She has over 25 years R&D experience in the fields of air pollution control, catalysts and adsorbents manufacture, and waste resource recovery. Her current research areas include (1) Energy efficient-low temperature catalysts for air pollution controls, (2) Ecological uses of biochar as adsorbent, catalyst support and soil amendment for agriculture, and (3) Intelligent sensor network for air quality monitoring. She has served as the Associate Editor of the Journal of the Air & Waste Management Association since 2008, and she is the Fellow and Honorary president of the Taiwan Association for Aerosol Research. She published over 95 referred journal papers and 4 patents.



**WENJIA CAI**  
TSINGHUA UNIVERSITY

Associate Professor in Global Change Economics, Department of Earth System Science

Wenjia Cai received her Bachelor's degree in Environmental Economics and Management from Renmin University (China) in 2005 and PhD in Environmental Engineering from Tsinghua University (China) in 2010, and has been with the Department of Earth System Science, Tsinghua University since 2012, where she is now an associate professor of Global Change Economics. Her main research interest is the modeling and evaluation of the implications of mitigation to sustainable development. She received "Young Researcher Award" in the field of climate science by Scopus China in 2010. She was the co-lead of working group 4 (Finance, Economics and Policy) in the Lancet Commission Paper - Health and climate change: policy responses to protect public health. She is the co-author of two other Lancet Commission Papers related to climate change and health.



**PAUL Kay Sheung CHAN**  
THE CHINESE UNIVERSITY OF HONG KONG

Chairman, Department of Microbiology, Faculty of Medicine

Professor Paul Chan is Clinical Professor and Chairman of the Department of Microbiology, and Deputy Director of the Stanley Ho Centre for Emerging Infectious Diseases, Faculty of Medicine, The Chinese University of Hong Kong. He is also an Honorary Consultant in Microbiology for the New Territories East Cluster Hospitals of the Hong Kong Hospital Authority. Professor Chan is a renowned clinical virologist with special interest in tumour virology and human respiratory viruses. He serves many key professional bodies in Hong Kong, including the Scientific Committee on Emerging and Zoonotic Diseases of the Centre for Health Protection, the Grant Review Board for Medical and Health Research Fund. Professor Chan is Editor-in-Chief of the Journal of Virological Methods. He has published 14 book chapters and more than 330 scientific papers, and attained an H-index of 51.



**BAO-JI CHEN**  
NATIONAL TAIWAN UNIVERSITY

Professor, Department of Animal Science and Technology, College of Bioresources and Agriculture

Professor Chen is currently Professor in the Department of Animal Science and Technology, College of Bioresources and Agriculture at National Taiwan University (NTU). He served as Minister for the Council of Agriculture, Executive Yuan from 2012 to 2016. Professor Chen was also Dean of the College of Bioresources and Agriculture at NTU from 2005 to 2011 and Chairman of the Department of Animal Science and Technology at NTU from 2002-2005. He also served as Special Assistant of the President, Office of National Taiwan University. Professor Chen has received multiple awards: The Special Contribution Award from Taiwan Provincial Government; Outstanding Achievement Award from Council of Agriculture; and Academic Award from the China Animal Science Association. Professor Chen is currently President of the National 4-H Club Association, ROC; served as President of the Agricultural Association of Taiwan; was Senior Vice President, Asian-Pacific Poultry Federation, World Poultry Science; and Club Leader of the Cornell Alumni Association of Taiwan. Professor Chen received his PhD in Animal Science – Poultry Nutrition at Cornell University in 1989 and received Master's and Bachelor's degrees in the Department of Animal Husbandry at National Taiwan University.



**DAVID TUAN-HUA HO**  
WASHINGTON UNIVERSITY IN ST. LOUIS AND ACADEMIA SINICA IN TAIPEI

Distinguished Research Fellow, Institute of Plant and Microbial Biology, Academia Sinica, Professor Emeritus, Department of Biology; McDonnell Academy Ambassador to National Taiwan University and National Chiao Tung University, Washington University in St. Louis

Tuan-hua David Ho is currently a Distinguished Research Fellow, Institute of Plant and Microbial Biology, Academia Sinica, Taipei, Taiwan. He is also a professor emeritus in the Department of Biology at Washington University in St. Louis. He earned his BS in botany from National Taiwan University in Taipei, and a PhD in biochemistry from Michigan State University. Professor Ho joined the faculty of Washington University in 1984 as an associated professor and later promoted to professor and associate chair of the Department of Biology. He also served as Director of the Plant Biology Program, Division of Biology and Biomedical Sciences. Professor Ho's research is focused on the hormonal regulation of seed germination process and on plant responses to environmental stresses, such as drought and high salinity. His current work also includes studies of microbial enzymes capable of converting agricultural wastes, such as rice straws, into fermentable sugars for the production of biofuels. He is an elected Academician, Academia Sinica, a Fellow of the American Association for the Advancement of Science, a Fellow of the American Society of Plant Biologists, and a member of the Academy of Sciences for the Developing World.



**JINGKUN JIANG**  
TSINGHUA UNIVERSITY

Associate Professor, Division of Air Pollution Control, Department of Environmental Science and Engineering

Dr. Jingkun Jiang is a professor in the School of Environment, Tsinghua University. He received a BS and a MS in Environmental Science and Engineering from Tsinghua University. He holds a PhD degree in Energy, Environmental and Chemical Engineering from Washington University in St. Louis. Prior to joining Tsinghua in 2010, he served as a Postdoctoral Research Associate in the Particle Technology Laboratory of Mechanical Engineering Department, University of Minnesota. Dr. Jiang's research activities involve various topics in aerosol science and technology: aerosol charging, classification, and detection; atmospheric new particle formation; air pollution in China and characterizing PM emission from stationary and mobile sources; synthesis and application of aerosol nanoparticles; aerosol nanotoxicology; metagenomics of airborne microorganism. He has published 90 peer-reviewed journal articles with more than 4000 citations in Web of Science. He received a number of awards including 2015 Asian Young Aerosol Scientist Award, 2009 A&WMA Doctoral Dissertation Award, 2014 NSFC Excellent Young Scientist Award, 2015 Second-Class National Science and Technology Progress Award by the State Council of China. He is serving as an editor for Aerosol Science & Technology, a guest editor for Atmospheric Chemistry & Physics, an editorial board member for Journal of Aerosol Science, and the deputy director for State Key Joint Laboratory of Environment Simulation and Pollution Control, the oldest state key laboratory in the field of environmental science and engineering in China.



**HUU-SHENG LUR**  
NATIONAL TAIWAN UNIVERSITY

Dean, College of Bioresources and Agriculture, Department of Agronomy

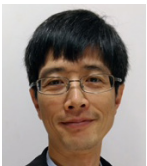
Professor HUU-SHENG LUR is a tenured member of the National Taiwan University. He received his PhD in crop and soil science from Cornell University, USA in 1990, and now is a distinguished professor at the National Taiwan University. After dedicating himself in agriculture research for several years, he was recruited by the Taiwan government as the Director General of the Department of Science and Technology of the Council of Agriculture under the Executive Yuan in Taiwan from 2014 to 2016. Professor HUU-SHENG LUR's current research interests lie in the area of climate change and crop production, ranging from the fundamental physiology of crop yield and the life cycle assessment (LCA) for crop production to the farming system management with a focus on the mitigation of climate pressures on rice grain quality and yield. He has established a set of analysis platform for the rice market in Taiwan, including analysis methods for rice quality, variety identification, and origin identification. He also participated in several international rice research projects, such as the global research alliance for heat stress in rice and the global rice market requirements investigation for breeders. In addition, he has been a key member in constructing governmental strategic plans including agriculture bio-economy and smart agriculture.



**CHUEN-JINN TSAI**  
NATIONAL CHIAO TUNG UNIVERSITY

Chair Professor, Institute of Environmental Engineering, National Chiao Tung University

Dr. Chuen-Jinn Tsai is Chair Professor of the Institute of Environmental Engineering, National Chiao Tung University, Taiwan. He received his BS degree from the Mechanical Engineering Department, National Taiwan University, MS and PhD degrees in the Mechanical Engineering Department, University of Minnesota. Since 1990, Professor Chuen-Jinn has joined the Institute of Environmental Engineering, National Chiao Tung University, Taiwan, for over 27 years, conduct research on aerosol sampling and transport, aerosol instrumentation, aerosol physics and chemistry, aerosol and air pollution control devices. Because of his outstanding academic achievements and technical developments, he won distinguished research awards three times from Taiwan Ministry of Science and Technology. Professor Chuen-Jinn was one of the key founding members of the TAAR (Taiwan Association for Aerosol Research in Taiwan), and the AARA (Asian Aerosol Research Assembly). TAAR has published AAQR (Aerosol and Air Quality Research) SCI journal since 2001, for which he has served as the Co-Editors-in-Chief and editor for a long time. He received the 2006 International Aerosol Fellow (IAF) award from the IARA, 2015 Asian Aerosol Fellow and 2015 Fellow of Taiwan Association for Aerosol Research to recognize his outstanding research, technical development, education and service contributions to aerosol science and technology.



**CHANG-FU WU**  
NATIONAL TAIWAN UNIVERSITY

Professor, Associate Dean, Department of Public Health, College of Public Health

Dr. Wu obtained his doctoral degree from the Department of Environmental Health of the University of Washington in 2002. He joined the Department of Public Health of the National Taiwan University in 2004 and is now a professor with an adjunct appointment in both the Institute of Environmental Health and Institute of Occupational Medicine and Industrial Hygiene. His current research topics cover the following areas: source apportionment of air pollutants; source-specific exposure and health risks assessment; source characterization with optical remote sensing techniques. He is a Certified Industrial Hygienist (CIH) which is issued by the American Board of Industrial Hygiene.



**JAMES V. WERTSCH**  
WASHINGTON UNIVERSITY IN ST. LOUIS

David R. Francis Distinguished Professor  
Vice Chancellor for International Affairs  
Director, McDonnell International Scholars Academy  
Professor, Department of Anthropology

James V. Wertsch is the David R. Francis Distinguished Professor, Vice Chancellor for International Affairs, Director of the McDonnell International Scholars Academy, and Professor of Anthropology at Washington University in St. Louis. His research is concerned with language, thought, and culture, with a special focus on national narratives and identities. Wertsch is the author of over 200 publications appearing in over a dozen languages. These include the volumes *Voices of the Mind* (Harvard University Press, 1991), *Mind as Action* (Oxford University Press, 1998), and *Voices of Collective Remembering* (Cambridge University Press, 2002).

After finishing his Ph.D. at the University of Chicago in 1975 Wertsch was a postdoctoral fellow in Moscow at the USSR Academy of Sciences and Moscow State University. Wertsch has held faculty positions at Northwestern University, the University of California at San Diego, Clark University, and now Washington University in St. Louis. In addition he has been a visiting professor at the University of Utrecht, Moscow State University, the University of Seville, the Swedish Collegium for Advanced Study in Social Sciences, Bristol University, and the University of Oslo. Wertsch is a Fellow of the American Academy of Arts and Sciences, holds honorary degrees from Linköping University and the University of Oslo, and is an honorary member of the Russian Academy of Education. He currently serves as a guest professor at the University of Oslo in Norway, Tsinghua University in Beijing, and at Fudan University in Shanghai.



**MARK S. WRIGHTON**  
WASHINGTON UNIVERSITY IN ST. LOUIS

Chancellor

Dr. Mark S. Wrighton is Chancellor and Professor of Chemistry at Washington University in St. Louis since July 1, 1995. Since his arrival, Washington University has made unprecedented progress in campus improvements, resource development, curriculum, international reputation, and especially in undergraduate applications and student quality.

Chancellor Wrighton served as a presidential appointee to the National Science Board (2000-06). He is a past chair of the Business-Higher Education Forum and the Association of American Universities.

Wrighton has received many awards for his research and scholarly writing, including the distinguished MacArthur Prize. He is also the holder of an honorary doctorate from Fudan University. He is the author of over 300 articles in professional and scholarly journals, is the holder of 16 patents, and co-author of a book, *Organometallic Photochemistry*.

Wrighton received his B.S. degree with honors in chemistry from Florida State University in 1969 and his Ph.D. in chemistry from the California Institute of Technology in 1972.



**Thank You!**



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