



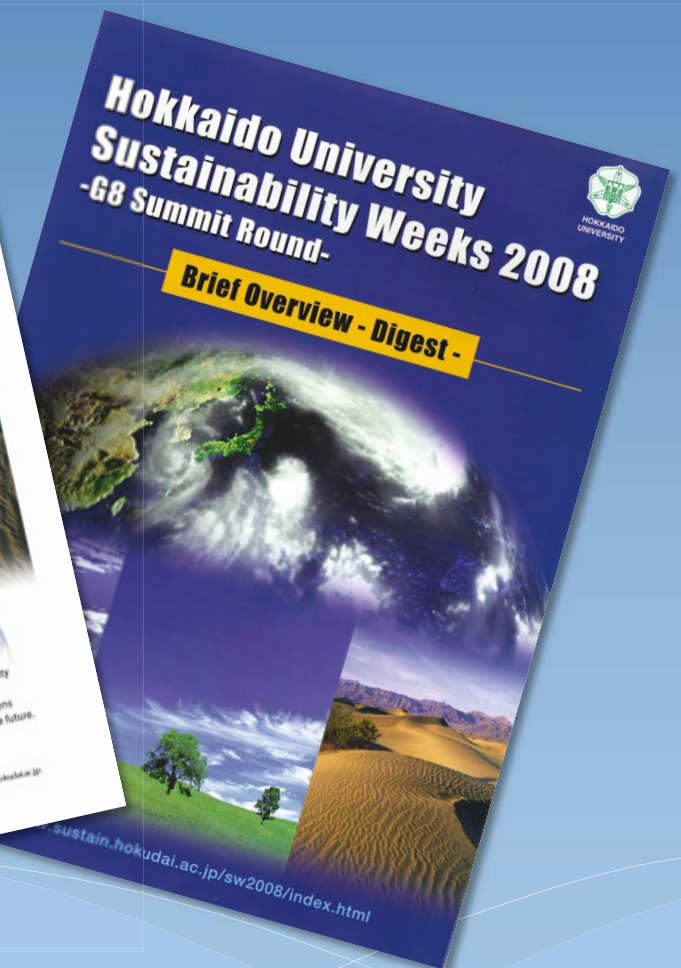
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# Hokkaido University Sustainability Weeks 2008

Annual Report



**Secretariat of Sustainability Weeks  
Hokkaido University  
March, 2017**

## About This Document

This is the annual report of the Sustainability Weeks which is a campaign Hokkaido University launched in 2007 to promote research and education for the realization of a sustainable society. This mainly consists of PDF files converted from the website of the Sustainability Weeks 2008.

To keep the records as of when the events were held, some pages include out-of-date information, website links, and contact information which is not valid currently.

This is the English annual report of Sustainability Weeks 2008. Its Japanese version and other years' annual reports of Sustainability Weeks are available on the website as well. We are glad if you refer to them for your better understanding.

Also, please understand that it is difficult to answer inquiries about the event details since the only event planners and host members at that time have detailed information. We hope this document helps you somehow to contribute to achieve a sustainable society.

Secretariat of Sustainability Weeks

Hokkaido University

March, 2017

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# **1. Overview of Sustainability Weeks 2008**



## Features of This Year

- Theme : **G8 Summit Round**
- Core period : Mon, June 23 – Fri, July 11, 2008
- Number of events : 50
- Event period : Sat, May 17 – Fri, July 11, 2008
- Number of participants : 26,436
  - Number of symposia and project lecture participants: 6,399
  - Number of museum visitors: 20,037
- Points worth special mention:
  - Timed to coincide with the G8 Hokkaido Toyako Summit, at which the leaders of the Group of Eight major economies met from July 7 to 9 to discuss global challenges such as the environment and climate change as well as the United Nations Millennium Development Goals (MDGs), Hokkaido University hosted a series of events to provide information on and discuss related issues within the campus-wide framework of the Sustainability Weeks 2008.
  - The Promotion Committee for the Hokkaido University Initiative for Sustainable Development (HUISD), headed by the University's president, launched the Sustainability Marathon, a campaign to promote research and education in sustainability, from September 2007 to July 2008. The Sustainability Weeks (SW) 2008 program was held as part of the campaign.
  - The world's first G8 University Summit was held in Sapporo from June 29 to July 1. It brought together representatives from 35 leading institutions of higher education in 14 countries, including G8 nations and emerging economies. The representatives held discussions on the theme of Global Sustainability and the Role of Universities and adopted the Sapporo Sustainability Declaration (SSD).
  - The first General Assembly, signing ceremony and inaugural international symposium of the Promotion of Sustainability in Postgraduate Education and Research network (ProsPER.Net) were held from June 19 to 21. ProsPER.Net is a consortium of the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) and leading higher education institutions in the Asia-Pacific region.

- The United Nations Secretary-General gave a lecture entitled Challenge to Global Food Crisis on Hokkaido University Sapporo Campus on July 8. It was attended by 330 students.
- To off-set the approximately 350 tons of carbon dioxides (CO<sub>2</sub>) estimated to have been emitted from SW 2008 within several years, trees were thinned and selectively felled in approximately 10 hectares of land in Hokkaido University's experimental forests.

## President's Message

December 2007

Global warming and other environmental issues have become a matter of serious concern. Now researchers and educators are more strongly expected than ever to contribute to the realization of "Sustainable Development," which seeks to create a society that balances the economy and natural environment.

Since its inception as the Sapporo Agricultural College in 1876, Hokkaido University has pursued the ideal of harmonious coexistence between the natural environment and mankind. In 2005, we established the Hokkaido University Initiative on Sustainable Development (HUISD) based on the research and educational foundations cultivated at the university and renewed our determination to make contributions on a global scale more aggressively than ever with the goal of realizing a sustainable society. In 2006, we hosted the International Symposium on Sustainable Development, where we disclosed the results of the research and educational activities we had accumulated over the previous decades. We have thus been picking up speed in reinforcing our network with overseas universities and international institutions.



Hiroshi Saeki  
President  
Hokkaido University

We look at the G8 Hokkaido Toyako Summit 2008 as a tremendous opportunity to gather momentum in realizing a sustainable society. Prior to the G8 Summit to be held in July 2008, one of main themes of which is the environment, Hokkaido University will host a series of events concerning sustainability. Through symposia, outreach programs, special exhibitions, workshops and other events, we strive to further promote research and education in the concerned field in the name of the "Sustainable Promotion Marathon," which aims to rouse people's interest in making our society sustainable.

During the starting event "Sustainability Weeks 2007" (October 20-30, 2007), we made public Hokkaido University's research results at outreach programs and shared our awareness about sustainability through our discussions with citizens.

In late June 2008, immediately before the G8 Summit, we will host related events intensively in cooperation with domestic and overseas universities and international institutions under the title of "**Sustainability Weeks 2008 – G8 Summit Round**".

We hope that the knowledge sharing and discussions among researchers, educators, students and citizens taking place during these events will help pave the way for the realization of sustainability in the future.

Hiroshi Saeki  
President  
Hokkaido University

## About Sustainability Weeks 2008

### What is the Sustainability Weeks 2008?

"Sustainability Weeks 2008" refers to a campaign Hokkaido University, Japan will hold in late June to early July 2008 just prior to the G8 Hokkaido Toyako Summit. HU is a leading comprehensive university in Japan which places significant emphasis on research and education for the realization of sustainable development. As the G8 summit will be held in Hokkaido, HU will initiate an intensive campaign officially named, "Sustainability Weeks 2008 – G8 Summit Round." During the campaign, HU will intensively hold over 20 international symposia and outreach programs thereby providing researchers, educators, students and citizens around the world with opportunities to bring together their knowledge and wisdom to address challenges for the creation of a sustainable society. In addition, HU will redouble our efforts to contribute to society by extensively making public the results of the research and educational activities Hokkaido University has tackled thus far. Through these events, HU will deepen our partnerships with the individuals and organizations that will assemble here and take a step toward the future.

### History of the Sustainability Weeks

- Hokkaido University established the Initiative on Sustainable Development (HUISD) in 2005, picking up speed in research and education that will contribute to the realization of sustainable development.
- HUISD hosted the Hokkaido University International Symposium on Sustainable Development in 2006 with the participation of approximately 1,000 people, resulting in a proposal for the continuity of the Symposium from participants.
- As a result, a campaign to strengthen research and education in the field of sustainable development was planned and the project named "Sustainability Weeks" has been held since 2007.
- Sustainability Weeks 2007 was held from October 20 through October 31, 2007. During this period, three outreach programs, two international symposia and the opening ceremony for a new research building were held, and the total number of participants exceeded 800.

## What is the Sustainability Promotion Marathon?

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The Sustainability Marathon refers to a promotion campaign hosted by Hokkaido University from September 2007 through July 2008, and is officially named the "Sustainability Research and Education Promotion Marathon." HU initiated the campaign with the objective of accelerating research and education around the world to realize a sustainable society, on the occasion of the G8 Hokkaido Toyako Summit 2008 whose main theme will be countermeasures for global warming and environmental problems. During the Sustainability Promotion Marathon, over 30 symposia, workshops and outreach programs in environment-related fields will be continuously held. Through these events, HU provides opportunities to researchers and educators to share their recognition of the challenges we are facing in terms of sustainability. Furthermore, HU is disseminating research results to the public to provoke an interest and understanding of the issues universities around the world are tackling.

# Hokkaido University Sustainability Weeks 2008-G8 Summit Round

June 23—July 11, 2008



Hokkaido University looks at G8 Hokkaido Toyako Summit 2008 as a tremendous opportunity to gather momentum in realizing a sustainable society. HU will host a series of events under the title of "Sustainability Weeks 2008". Researchers, educators, students and citizens from around the globe will assemble here, share their wisdom, and take a step forward to the future.

**Hokkaido University Secretariat for Sustainability Weeks 2008**

North8, West5, Sapporo, 060-0808, Japan Phone: +81-(0)11-706-2093 FAX: +81-(0)11-706-4796 E-mail: office2@sustain.hokudai.ac.jp

■ For more information, please visit our website: <http://sw2008.jp>



# Activities in Sustainability Weeks 2008

A remarkable opportunity for you to contribute to sustainable future.

## [LEGEND]

33 **G R C** **JP** May 17 13:00—16:30

Language: **CN** Chinese, **EN** English, **JP** Japanese, **KR** Korean, **RU** Russian

Title: □□□□□□  
 Outline: a: □□□□□□  
 Venue: b: □□□□□□  
 Registration: c: □□□□□□  
 URL: d: □□□□□□  
 Contact: e: □□□□□□

Symbols below denote intended audience.

- G** General Public   **R** Researchers   **C** College Students   **H** High School Students  
**J** Junior High School Students   **P** Primary School Students   **E** Educators

- Climate & Environment Change   Technological Innovation, Social Change   Biodiversity, Nature Conservation   Food, Water, Health   Education, Communication   Human Rights, Culture, Peace

For more information, please visit Hokkaido University's website: <http://sw2008.jp>

**1** **G R C** **JP** May 17 13:00—16:30

**Being Indigenous & Woman: Gender History for Self-Reliance & Borderless Development**

a: In regard to gender equality, a prerequisite for a sustainable society, the actual situation of women and the problems they face will be discussed. Examples of the Native Americans and Ainu will be introduced.

b: Humanities and Social Sciences Classroom Bldg.  
 c: Not required (Charge-free)  
 d: <http://sw2008.jp/marathon/img/gender0517.pdf>  
 e: PHONE: +81-(0)11-706-4085, [june@let.hokudai.ac.jp](mailto:june@let.hokudai.ac.jp)

**6** **G R** **JP** Jun 14 13:00—17:00

**Environmental Forum in Lake Toya**

a: Lake Toya has been subject to both natural and human disturbance. Governments and researchers will discuss environments and resources of Lake Toya and Mt. Usu in the past, present and future.

b: Toya Sogo Center (Toyako-cho [Toyako Town])  
 c: Not required (Charge-free)  
 d: To be prepared  
 e: PHONE: +81-(0)11-706-2598, [hueda@fsc.hokudai.ac.jp](mailto:hueda@fsc.hokudai.ac.jp)

**11** **G R C** **JP** Jun 21 13:00—16:30

**Environmental Leadership Initiative for Asian Sustainability (ELIAS)**

a: Representatives of higher education institutions promoting Education and Research for Sustainable Development in the Asia-Pacific Region will share their knowledge of curricula and teaching materials. They will also exchange views regarding the potential for human resource development through cooperation by various stakeholders.

b: Sapporo Dome (Integrated Exhibition of the Environment 2008)  
 c: Required (Charge-free)  
 d: <http://sw2008.jp/english/weeks/ELIAS>  
 e: PHONE: +81-(0)11-706-2093, [office2@sustain.hokudai.ac.jp](mailto:office2@sustain.hokudai.ac.jp)

**2** **G R C** **JP RU** May 22 10:00—12:30

**Neighbors must share the Environment that links them: Dialogue with the Youth Delegation from Russia**

a: Together with 50 elite youths from Russia invited to Japan, we will hear reports on the leading-edge achievements of Japan's environmental research.

b: Conference Hall  
 c: Not required (Charge-free)  
 d: <http://src-h.slav.hokudai.ac.jp/jp/seminars/archive/conf2008.html#5-22>  
 e: PHONE: +81-(0)11-706-2388, FAX +81-(0)11-706-4952

**7** **G R C** **JP** Jun 15 10:00—17:00

**Human Dimensions of Invasive Alien Species Issues**

a: Social consensus-building, an essential part of addressing major environmental issues caused by non-native species such as stag beetles and raccoons, as well as ideal forms of future measures will be discussed from the viewpoints of humanities and social science.

b: Conference Hall  
 c: Not required (Charge-free)  
 d: <http://www.hokudai.ac.jp/letters>  
 e: PHONE: +81-(0)11-706-4163, [tikeda@let.hokudai.ac.jp](mailto:tikeda@let.hokudai.ac.jp)

**12** **R C** **EN** Jun 23 9:00—18:00

**Sustainability Weeks 2008 Opening Symposium "Toward a Sustainable Low Carbon Society"**

a: Officially opens Sustainability Weeks 2008, which will discuss the topic of what we can do now for future generations from various perspectives such as those of natural science, social reform and technological innovation.

b: Conference Hall  
 c: Required (Charge-free)  
 d: <http://sw2008.jp/english/weeks/opening>  
 e: PHONE: +81-(0)11-706-2093, [office2@sustain.hokudai.ac.jp](mailto:office2@sustain.hokudai.ac.jp)

**3** **G C H** **JP** May 24 14:00—15:30

**Science Café Event: The Bio-diversity & Sapporo Maruyama Zoo**

a: A specialist on birds of prey will elaborate on a Sapporo Maruyama Zoo project to breed Steller's sea eagles and return them to the wild. The importance of rare animal protection will also be considered.

b: Sapporo55 Bldg. (N5, W5, Sapporo)  
 c: Not required (Charge-free)  
 d: <http://costep.hucc.hokudai.ac.jp/sw2008>  
 e: PHONE: +81-(0)11-706-3276, [office@costep.hucc.hokudai.ac.jp](mailto:office@costep.hucc.hokudai.ac.jp)

**8** **R C** **EN** Jun 16—17

**Int'l Symposium on "Nanotoxicology Assessment & Biomedical, Environmental Application of Fine Particles & Nanotubes" (ISNT2008)**

a: The biological implications and safety of applying nanotechnologies (such as carbon nanotubes, photocatalysts and biomimetic nanocomposites) to biomedicine on levels of DNA, cells and tissues will be discussed.

b: Conference Hall  
 c: Required (Charged)  
 d: <http://sw2008.jp/nano>  
 e: PHONE: +81-(0)11-706-4251, [nano@den.hokudai.ac.jp](mailto:nano@den.hokudai.ac.jp)

**13** **R C** **EN** Jun 24 9:00—17:30

**How to make Sustainable Low Carbon Society—Synergy of Social & Engineering System—**

a: The question of how to produce synergistic effects from the science of public policy, which seeks to reorganize social systems, and engineering, which pursues technical solutions, will be discussed with the aim of accelerating a shift toward a sustainable low-carbon society.

b: Conference Hall  
 c: Required (Charge-free)  
 d: <http://sw2008.jp/english/weeks/carbon>  
 e: PHONE: +81-(0)11-706-2093, [office2@sustain.hokudai.ac.jp](mailto:office2@sustain.hokudai.ac.jp)

**4** **G R C** **JP** May 27

**University-led Ventures Business Hokkaido Forum**

a: Venture business managers, the Japan Venture Capital Association Chairman and the Yomiuri Shinbun's Science Division Director will discuss the environmental contribution and growth strategy of university-led ventures with unique environmental technologies and business models.

b: Clark Memorial Student Center  
 c: Not required (Charge-free)  
 d: <http://www.hkd.meti.go.jp/hokid/bmcontest2/index.htm>  
 e: PHONE: +81-(0)11-706-2959, [k-sato@cast.hokudai.ac.jp](mailto:k-sato@cast.hokudai.ac.jp)

**9** **G C H** **JP** Jun 19 15:00—17:00

**Changing Polar Regions—Research Frontier & Its Education—**

a: Researchers on cold areas covered with snow and ice, such as the North and South Poles, will shed light on the global environmental changes currently taking place, their possible causes and future problems through visual presentation.

b: Sapporo Dome (Integrated Exhibition of the Environment 2008)  
 c: Not required (Charge-free)  
 d: <http://www.earth.ees.hokudai.ac.jp/IAI>  
 e: FAX: +81-(0)11-706-7142, [iai@lowtem.hokudai.ac.jp](mailto:iai@lowtem.hokudai.ac.jp)

**14** **R C** **EN** Jun 24 9:30—17:10

**Drastic Change in the Earth System during Global Warming**

a: Young and established researchers will clarify global warming through discussion in order to overcome the uncertainties included in the IPCC Fourth Assessment Report for more accurate prediction of temperatures, sea level rise and sea ice disappearance.

b: Conference Hall  
 c: Required (Charge-free)  
 d: <http://ees.hokudai.ac.jp/coe21/dc2008/index.htm>  
 e: PHONE: +81-(0)11-706-2093, [office2@sustain.hokudai.ac.jp](mailto:office2@sustain.hokudai.ac.jp)

**5** **R** **EN** Jun 11—13

**JST Presto Symposium on Mathematical Sciences towards Environmental Problems**

a: In this symposium, researchers from various disciplines discuss how mathematical approaches contribute to environmental problems through presentation of their recent research developments and poster sessions.

b: Faculty of Science Bldg. #8, Room 309  
 c: Not required (Charge-free)  
 d: <http://www.math.sci.hokudai.ac.jp/sympo/080611/index.html>  
 e: [cri@math.sci.hokudai.ac.jp](mailto:cri@math.sci.hokudai.ac.jp)

**10** **G R C** **JP RU** Jun 19 13:00—17:00

**Hokkaido & Far-east Russia Environment Forum for Sustainable Development**

a: Tackling environmental questions concerning the Okhotsk Sea and its shores requires international and interdisciplinary cooperation. Our forum will integrate not only nature and social science scholars, but those engaged in administration from Russia's Far East and Hokkaido.

b: Sapporo Dome (Integrated Exhibition of the Environment 2008)  
 c: Required (Charge-free)  
 d: <http://sw2008.jp/english/weeks/forum>  
 e: PHONE: +81-(0)11-706-2093, [office2@sustain.hokudai.ac.jp](mailto:office2@sustain.hokudai.ac.jp)


**15** **R C** **EN** Jun 24 10:00—17:00

**2008 Int'l Workshop on Multi-Media Signal Processing**

a: An international workshop on the realization of high-quality, high-efficiency multimedia information and communication based on broadband networks, high-speed wireless LAN, mobile systems (ultra-low power systems), etc.

b: Graduate School of Information Science & Technology  
 c: Not required (Charge-free)  
 d: [http://www.gcoe.ist.hokudai.ac.jp/index.php?ml\\_lang=en](http://www.gcoe.ist.hokudai.ac.jp/index.php?ml_lang=en)  
 e: PHONE: +81-(0)11-706-6489, [miya@ist.hokudai.ac.jp](mailto:miya@ist.hokudai.ac.jp)




Sustainability Weeks 2008

**16** **G EN JP** Jun 25 13:30—16:30 

**Global Warming — Messages from Scientists**

Ⓐ: The Japanese science community will report on urgent issues caused by global warming, and discuss with citizens how such problems should be dealt with.


Ⓑ: Conference Hall  
 Ⓒ: Required (Charge-free)  
 Ⓓ: <http://www.scj.go.jp/event>  
 Ⓔ: FAX: +81-(0)3-3403-6224, p228@scj.go.jp

**22** **G C H JP** Jun 28 9:00—17:00   

**Sustainability Sciences for Protecting Aquatic Ecosystem & Marine Food**

Ⓐ: Human beings have no other choice to lean on marine food resource, because the human population is growing faster than terrestrial food production. In this forum, a new sustainable marine resource management based on the ecosystem approach will be proposed for children in the future.


Ⓑ: Conference Hall  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://sw2008.jp/fish>  
 Ⓔ: PHONE: +81-(0)138-40-5605, FAX: +81-(0)138-40-5605

**28** June 29—July 1 

**G8 University Summit**

Ⓐ: Presidents of prominent universities around the world will assemble before the Hokkaido Toyako Summit and make proposals from academia for the realization of a sustainable society.


Ⓒ: Seats are restricted to invitees  
 Ⓓ: <http://www.g8u-summit.jp> (To be prepared)  
 Ⓔ: PHONE: +81-(0)11-706-2916, kokuryu@general.hokudai.ac.jp

**17** **R C EN** Jun 25 9:00—17:00 

**Dynamics & Pathways of Land Systems Change**

Ⓐ: Efforts will be made to predict the future of the terrestrial environment and to avoid environmental degradation by clarifying effects of different types of land use on elements of the terrestrial environment such as soil, ground, water and ecosystems.


Ⓑ: Conference Hall  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm>  
 Ⓔ: PHONE: +81-(0)11-706-2260, kohyama@ees.hokudai.ac.jp

**23** **G C H JP** Jun 28 14:00—15:30 

**Science Café Event "Outreach for the Most Recent Information on Global Warming"**

Ⓐ: The most recent research results on global warming will be discussed with citizens by inviting experts who will participate in an international climate change symposium to be held in Sapporo in the run-up to the Hokkaido Toyako Summit.


Ⓑ: Sapporo55 Bldg. (N5, W5, Sapporo)  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://costep.hucc.hokudai.ac.jp/sw2008>  
 Ⓔ: PHONE: +81-(0)11-706-3276, office@costep.hucc.hokudai.ac.jp

**29** **G JP** Jul 2 18:00—19:30 

**Toward Stronger Ties between Agricultural and Medical Sciences**

Ⓐ: When we think about the most immediate issues of food and health, we need to learn from the past and re-establish a philosophy of harmony between agriculture and medicine. We will consider this important theme.


Ⓑ: Sapporo55 Bldg. (N5, W5, Sapporo)  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://www.sgp.hokudai.ac.jp/SGP.html>  
 Ⓔ: PHONE: +81-(0)11-706-4530, jimu@sgp.hokudai.ac.jp

**18** **G R C EN** Jun 25 12:00—17:30 

**Environmental Monitoring for Conservation of Ecosystems**

Ⓐ: To help understand the current situation and mechanisms of abnormal weather conditions observed globally. The latest results of atmospheric, meteorological and hydrological observation and research at the South Pole as well as in tropical and temperate zones will be reported.

Ⓑ: Conference Hall  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm>  
 Ⓔ: PHONE: +81-(0)11-706-2200, iwakuma@ees.hokudai.ac.jp

**24** **G R C JP** Jun 28—29 9:00—17:00 

**Efforts on Energy Service Company & Garbage Reduction in Hokkaido University**

Ⓐ: To promote sustained environmental activities, the ESCO project and garbage reduction campaign being conducted as part of the Hokkaido University Environmental Burden Reduction Measures will be presented using display panels and leaflets.

Ⓑ: Conference Hall  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: PHONE: +81-(0)11-706-3193, h-kacho@facility.hokudai.ac.jp

**30** **R C EN** Jul 2—6 9:00—18:00  

**Int'l Conference on Sustainable Agriculture & Environment**

Ⓐ: We will review modern agriculture as developed by heavy machinery and tremendous input of resources (petroleum, fertilizers, agrichemicals, water), and discuss a new system for the sustainable production of food, fiber and bio-energy.


Ⓑ: Conference Hall  
 Ⓒ: Required (Charged)  
 Ⓓ: <http://www.agr.hokudai.ac.jp/ICSA08/framepage1.html>  
 Ⓔ: PHONE: +81-(0)11-706-4170, icsa08@chem.agr.hokudai.ac.jp

**19** **R C EN** Jun 26—27 9:00—18:00 

**Northeast Asia in the Cold War: New Evidence & Perspectives**

Ⓐ: This symposium will bring new international documents and comparative regional perspectives to the study of the very meaning of "ending of the Cold War".



Ⓑ: Conference Hall  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://src-h.slav.hokudai.ac.jp>  
 Ⓔ: PHONE: +81-(0)11-706-4809, ses-coe@slav.hokudai.ac.jp

**25** **G R C JP** Jun 28 13:00—17:00   
**EN** Jun 29 10:00—15:00

**Taxonomy Returns ! —For the Better Understanding of our Mother Nature—**

Ⓐ: Although biodiversity is an important area of research worldwide, researchers cannot answer the simple question of how diverse life on Earth is. The present situation in research circles will be analyzed, and countermeasures will be considered.


Ⓑ: The Hokkaido University Museum  
 Ⓒ: Required (Charge-free)  
 Ⓓ: <http://museum-sv.museum.hokudai.ac.jp/activity/seminar>  
 Ⓔ: PHONE: +81-(0)11-706-2750, shunfm@sci.hokudai.ac.jp

**31** **G R C JP EN** Jul 3 13:00—18:30, Jul 4 9:30—16:30  

**Environment & Health; Human Life in Changing Global Environments**

Ⓐ: The effects on health from changes in the natural environment and the social environment caused by round-the-clock economic activity will be highlighted. Measures to recover a rich natural environment and reclaim lifestyles will be proposed.


Ⓑ: Conference Hall  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://www.med.hokudai.ac.jp/news/2007/1221/ProgramE.pdf>  
 Ⓔ: PHONE: +81-(0)11-706-6058, sathonma@med.hokudai.ac.jp

**20** **G R C JP** Jun 27 10:00—15:30 

**Neo-Science of Natural History: Origin & Evolution of Natural Diversity**

Ⓐ: Introduces the allure of the Neo-Science of Natural History, a new discipline created at Hokkaido University to explore how the history of the Earth and the evolution of life affect each other.



Ⓑ: The Hokkaido University Museum  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://nature.sci.hokudai.ac.jp/symposium/sw2008/program.html>  
 Ⓔ: FAX: +81-(0)11-706-4851, horig@sci.hokudai.ac.jp

**26** **R C E JP** Jun 29 13:00—18:00 

**School Education for Establishing Sustainable Society in Hokkaido**

Ⓐ: How should environmental education be positioned in the school curriculum? Discussions will be held in the following three areas: environmental education as a separate school subject; environmental education within existing school subjects; teacher communities for the creation of environmental education.


Ⓑ: Humanities and Social Sciences Classroom Bldg.  
 Ⓒ: Required (Charge-free)  
 Ⓓ: <http://sw2008.jp/weeks/education>  
 Ⓔ: PHONE: +81-(0)11-706-3100, seess629@edu.hokudai.ac.jp

**32** **G R C JP** Jul 5 14:00—16:30  

**Symposium on Sustainable Management for Culture & Communities**

Ⓐ: In establishing museums, halls, etc. within communities, we have to consider how to gain the cooperation of that community. Managerial approaches to the long-term maintenance and development of cultural facilities will be examined using examples from Hokkaido.


Ⓑ: Clark Memorial Student Center  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: [http://www.jace.gr.jp/taikai\\_ronbun.html](http://www.jace.gr.jp/taikai_ronbun.html)  
 Ⓔ: PHONE: +81-(0)11-706-3067, sasaki@let.hokudai.ac.jp

**21** **G H JP** Jun 28 13:30—15:30 

**Fuel Cell Experiments—Environment-Friendly Energy—**

Ⓐ: Fuel cells have great potential as an environmentally friendly energy source. A short lecture and experiment on fuel cells in science laboratory will be given. Participants will learn basic mechanism, function and energy efficiency of electric power generation by fuel cells.




Ⓑ: Center for Research and Development in Higher Education  
 Ⓒ: Required (Charge-free)  
 Ⓓ: <http://gelens.high.hokudai.ac.jp/class2008/lec0806.pdf>  
 Ⓔ: FAX: +81-(0)11-706-5288, webmaster@gelens.high.hokudai.ac.jp

**27** **G EN** Jun 29 

**The Present & Future of Ainu Studies, Part I**

Ⓐ: A series of symposiums will look back on the history of research into the Ainu with an eye to ideal research methods for the future, with the first symposium featuring history, archaeology and linguistics.

Ⓑ: Conference Hall  
 Ⓒ: Not required (Charge-free)  
 Ⓓ: <http://www.cais.hokudai.ac.jp>  
 Ⓔ: PHONE: +81-(0)11-706-2859, ainu@let.hokudai.ac.jp


**33** **C H JP** Jul 5 13:30—16:30   

**Let's talk about "Health of the Earth & People"**

Ⓐ: Around the world, 2.2 million infants die annually from unsafe water. Of the one billion people infected with largely preventable tropical diseases, 500 thousand die. Let's share our ideas regarding these challenges.

Ⓑ: Conference Hall  
 Ⓒ: Required (Charge-free)  
 Ⓓ: <http://ghe.med.hokudai.ac.jp/ghentd>  
 Ⓔ: FAX: +81-(0)11-706-7374, ghentd@ghe.med.hokudai.ac.jp



**34** **R** **EN** Jul 5-7 9:00-17:00 

**Int'l Symposium: Sentinel Earth, Detection of Environmental Change**


Ⓐ: Global environmental predictions will be made using satellite and field observation data. In addition, policy exploration will be conducted for "sentinels for the global environment" for prompt control of environments from the North Pole to tropical zones according to prediction results.

Ⓑ: Conference Hall, Clark Memorial Student Center

Ⓒ: Required (Charge-free)

Ⓓ: <http://sw2008.jp/SEarth>

Ⓔ: PHONE: +81-(0)11-706-6784, hhaya@eng.hokudai.ac.jp

**40** **R C** **EN** Jul 11 13:45-16:00 

**Beyond the Double Helix~Life Science for the Disease Free Society~**



Ⓐ: Professors Lewis Cantley (Harvard Medical School) and Tadimitsu Kishimoto (Osaka University) will give us a lecture as to provide future directions of the life science of the 21st century.

Ⓑ: Institute for Genetic Medicine

Ⓒ: Not required (Charge-free)

Ⓓ: <http://sw2008.jp/doublehelix>

Ⓔ: PHONE: +81-(0)11-706-5070, doublehelix@igm.hokudai.ac.jp

**46** **G** **JP** Jul 3-31  

**Sustainable Society & Hokkaido: The Changing Environment & People's Lives**


Ⓐ: How is global warming related to our lives in Hokkaido? We will consider the possibilities of the region of Hokkaido in terms of the relationship between human beings and the environment.

Ⓑ: Multimedia Education Bldg.

Ⓒ: Required (Charged)

Ⓓ: <http://www.hokudai.ac.jp/bureau/gakumu/koukai20.html#1>

Ⓔ: PHONE: +81-(0)11-706-5252, FAX: +81-(0)11-706-7854

**35** **R** **EN** Jul 6 9:00-13:00 

**Int'l Symposium on Sanitation in Hokkaido University**


Ⓐ: Aiming to overturn the current situation in which unsanitary water causes 2.2 million infant deaths annually, the functioning of public health systems will be discussed from the viewpoints of both public health policy and engineering.

Ⓑ: Conference Hall

Ⓒ: Not required (Charge-free)

Ⓓ: To be prepared

Ⓔ: PHONE: +81-(0)11-706-6270, funamizu@eng.hokudai.ac.jp

**41** **G R C** **JP** Jul 11 14:00-16:30 (Tentative) 

**Sustainability Weeks 2008 Closing Symposium**


Ⓐ: The results of the Sustainability Weeks will be shared, and will include the announcement of a sustainability project plan to be implemented in earnest.

Ⓑ: Clark Memorial Student Center (Tentative)

Ⓒ: Not required (Charge-free)

Ⓓ: To be prepared

Ⓔ: PHONE: +81-(0)11-706-2093, office2@sustain.hokudai.ac.jp

**47** **C** **EN** **JP** Jun 28-29 10:00-16:00 (Tentative) 

**International Student Summit "UNI.SUMMIT2008"**


Ⓐ: At the same time as the Toyako Summit, Hokkaido University will hold the International Students' Summit, in which university students from all over Japan will present their activities through exhibition booths and engage in exchanges of opinion.

Ⓑ: Jun 28: Faculty of Science Bldg. #5, Jun 29: Clark Memorial Student Center

Ⓒ: Not required (Charge-free)

Ⓓ: <http://circle.cc.hokudai.ac.jp/unisummit08>

Ⓔ: unisummit2008@gmail.com

**36** **R** **JP** **EN** Jul 7 9:00-17:00 

**Catalysis Leading to a Sustainable Society**



Ⓐ: Proposals will be made to the G8 nations for new environmental policies and frameworks toward international cooperation based on catalysts, which are indispensable to the innovative development of environmental and energy technologies.

Ⓑ: Conference Hall

Ⓒ: Not required (Charge-free)

Ⓓ: <http://www.cat.hokudai.ac.jp/ueda/summit/index.htm>

Ⓔ: PHONE: +81-(0)11-706-9164, ueda@cat.hokudai.ac.jp

**42** **P** ~ **R** **EN** **JP** Jun 15-Jul 31 9:30-16:30  

**Museum Exhibit "Knowledge of University for All the People!"**

Ⓐ: A variety of research results and materials collected by researchers at Hokkaido University during its 130-year history will be exhibited for the enjoyment of people from around the world.

Ⓑ: The Hokkaido University Museum

Ⓒ: Not required (Charge-free)

Ⓓ: <http://museum-sv.museum.hokudai.ac.jp>

Ⓔ: PHONE: +81-(0)11-706-2658, museum-jimu@museum.hokudai.ac.jp

**48** **G** **JP** **EN** Ealy Jul - Jul 9 


**Team Sapporo Omotenashi**

Ⓐ: Through their hospitality, the university students are planning programs to promote links between visitors and local citizens so that they can experience each other's cultures.

Ⓑ: Sapporo City (Sapporo Station, Odori Park, Tanukikoji Shopping Street)

Ⓒ: Not required (Charge-free)

Ⓓ: omotenashi08@yahoo.co.jp

**37** **G R C** **JP** **EN** Jul 9 10:00-21:00 

**Int'l Symposium "Peace, Reconciliation & Civil Society: Toward a Sustainable Peace in East Asia & Europe"**





Ⓐ: Wars and colonial rule have caused many wounds throughout history. Reconciliation seeks to heal those wounds. This symposium aims to consider the power of citizens to promote reconciliation and peace. Prominent experts from around the world will join us in discussing how reconciliation and peace may be achieved.

Ⓑ: Sapporo L-PLAZA

Ⓒ: Not required (Charge-free)

Ⓓ: <http://sw2008.jp/reconciliation>

Ⓔ: PHONE: +81-(0)11-706-4082, odahiroshi@hotmail.com

**43** **P** ~ **R** **EN** **JP** Jun 17-Aug 30 9:30-16:30    

**Museum Exhibit "Environment & Resources of Lake Toya & Usu Volcano Area"**


Ⓐ: An exhibition on the relationships between natural disasters and human culture/history of Lake Toya and Usu Volcano area featuring the natural environment and diverse resources.




Ⓑ: The Hokkaido University Museum (3rd fl.)

Ⓒ: Not required (Charge-free)

Ⓓ: <http://museum-sv.museum.hokudai.ac.jp>

Ⓔ: PHONE: +81-(0)11-706-2658, museum-jimu@museum.hokudai.ac.jp

 **Radio Program**

Sapporo Community FM 76.2 MHz   

**49** **P** ~ **G** **JP** May 31, Jun 21, Jul 19 17:00-18:00

**"Creating a Sustainable Society"**

Ⓐ: Feature segments called "Creating a Sustainable Society" will be broadcast as part of a popular weekly radio program.

Ⓑ: Not required

Ⓓ: <http://costep.hucc.hokudai.ac.jp/sw2008>

Ⓔ: PHONE: +81-(0)11-706-3276, office@costep.hucc.hokudai.ac.jp

**38** **R C** **EN** Jul 10 9:00-17:00 (Tentative)  

**This symposium has been canceled.**

**Strategy of Social Inclusion for Sustainable Development**


Ⓐ: Aiming to overcome problems caused by exclusionary social structures such as poverty and discrimination, the future of a new policy development known as social inclusion will be discussed by featuring European policy makers and researchers who have made pioneering achievements in the field.

Ⓑ: Clark Memorial Student Center

Ⓒ: Not required (Charge-free)

Ⓓ: <http://www.csdemocracy.com/> (From June)

Ⓔ: PHONE: +81-(0)11-706-3798, globalg@juris.hokudai.ac.jp

**44** **G** **JP** **EN** Jun 23-Jul 11 Mon. - Fri. 9:00-20:00 


**Photo Summit "Planet Aqua" Photographic Exhibition**

Ⓐ: The photographic works by the members of Hokkaido University Photographic Association and by the group of several photographers from Germany aims to show the audience to think together about various faces of water by visual and artistic interpretation of the nature, not by the language and scientific data.

Ⓑ: Faulty House "Trillium"

Ⓒ: Not required (Charge-free)

Ⓓ: PHONE: +81-(0)144-33-2171, photocl@jimu.hokudai.ac.jp

**39** **R** **EN** Jul 10-12 9:00-17:00 

**Sustainable Should Be Female Scientists' Career! Environments for Gender Equality & Work-Life Balance in Science**



Ⓐ: Improvement of the environment for female researchers to continue careers with vision even during milestone periods in life, such as childbirth, child rearing and nursing care, will be discussed from the viewpoints of gender equality and work-life balance.

Ⓑ: Centennial Hall, Faulty House "Trillium"

Ⓒ: Required (Charge-free)

Ⓓ: [http://freshu.ist.hokudai.ac.jp/english/sw\\_2008.html](http://freshu.ist.hokudai.ac.jp/english/sw_2008.html)

Ⓔ: PHONE: +81-(0)11-706-3625, freshu@jimu.hokudai.ac.jp

**45** **G R** **CN** **EN** **JP** **KR** Jun 30-Jul 11  

**Citizens Media Center Sapporo**

Ⓐ: The Research Faculty of Media and Communication will establish the Citizens' Media Center, a place for disseminating information on citizens activities and opinions, in cooperation with the Citizens' Media Center Preparatory Working Group.

Ⓑ: Clark Memorial Student Center

Ⓒ: Required (Charge-free)

Ⓓ: <http://imc-sapporo.blogspot.com>

Ⓔ: PHONE: +81-(0)11-807-7975, IMCsapporo@gmail.com









# Calendar

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
May	11	12	13	14	15	16	17 <b>1</b>
	18	19	20	21	22 <b>2</b>	23	24 <b>3</b>
	25	26	27 <b>4</b>	28	29	30	31 <b>49</b>
June	1	2	3	4	5	6	7
	8	9	10	11 <b>5</b>	12 <b>5</b>	13 <b>5</b>	14 <b>6</b>
	15 <b>7</b>	16 <b>8</b>	17 <b>8</b>	18	19 <b>9 10</b>	20	21 <b>11 49</b>
	22	23 <b>12</b>	24 <b>13 14 15</b>	25 <b>16 17 18</b>	26 <b>19</b>	27 <b>19 20</b>	28 <b>21 22 23 24 25 47</b>
	29 <b>24 25 26 27 28 47</b>	30 <b>28</b>					
July			1 <b>28</b>	2 <b>29 30</b>	3 <b>30 31</b>	4 <b>30 31</b>	5 <b>30 32 33 34</b>
	6 <b>30 34 35</b>	7 <b>34 36</b>	8	9 <b>37</b>	10 <b>38 39</b>	11 <b>39 40 41</b>	12 <b>39</b>
	13	14	15	16	17	18	19 <b>49</b>

May	June	July	August
		<b>42</b> ————— <b>42</b>	Jun 15—Jul 31
		<b>43</b> ————— <b>43</b>	
		<b>44</b> ————— <b>44</b>	Jun 23—Jul 11
		<b>45</b> ————— <b>45</b>	Jun 30—Jul 11
		<b>46</b> ————— <b>46</b>	Jul 3—31
		<b>48</b> ————— <b>48</b>	Ealy Jul — Jul 9

## Events Categories

 Climate & Environment Change	 Technological Innovation, Social Change	 Biodiversity, Nature Conservation	 Food, Water, Health	 Education, Communication	 Human Rights, Culture, Peace
<b>2</b> May 22	<b>4</b> May 27	<b>3</b> May 24	<b>8</b> Jun 16—17	<b>3</b> May 24	<b>1</b> May 17
<b>9</b> Jun 19	<b>5</b> Jun 11—13	<b>6</b> Jun 14	<b>12</b> Jun 23	<b>7</b> Jun 15	<b>19</b> Jun 26—27
<b>10</b> Jun 19	<b>8</b> Jun 16—17	<b>7</b> Jun 15	<b>22</b> Jun 28	<b>9</b> Jun 19	<b>27</b> Jun 29
<b>12</b> Jun 23	<b>12</b> Jun 23	<b>10</b> Jun 19	<b>29</b> Jul 2	<b>11</b> Jun 21	<b>32</b> Jul 5
<b>14</b> Jun 24	<b>13</b> Jun 24	<b>20</b> Jun 27	<b>30</b> Jul 2—6	<b>24</b> Jun 28—29	<b>37</b> Jul 9
<b>16</b> Jun 25	<b>15</b> Jun 24	<b>22</b> Jun 28	<b>31</b> Jul 3—4	<b>26</b> Jun 29	<b>38</b> Jul 10
<b>17</b> Jun 25	<b>16</b> Jun 25	<b>25</b> Jun 28—29	<b>33</b> Jul 5	<b>28</b> Jun 29—Jul 1	<b>45</b> Jun 30—Jul 11
<b>18</b> Jun 25	<b>21</b> Jun 28	<b>31</b> Jul 3—4	<b>35</b> Jul 6	<b>33</b> Jul 5	
<b>22</b> Jun 28	<b>30</b> Jul 2—6	<b>42</b> Jun 15—Jul 31	<b>40</b> Jul 11	<b>39</b> Jul 10—12	
<b>23</b> Jun 28	<b>32</b> Jul 5	<b>43</b> Jun 17—Aug 30	<b>43</b> Jun 17—Aug 30	<b>41</b> Jul 11	
<b>33</b> Jul 5	<b>36</b> Jul 7	<b>49</b> May 31, Jun 21, Jul 19	<b>44</b> Jun 23—Jul 11	<b>42</b> Jun 15—Jul 31	
<b>34</b> Jul 5—7	<b>38</b> Jul 10		<b>49</b> May 31, Jun 21, Jul 19	<b>43</b> Jun 17—Aug 30	
<b>43</b> Jun 17—Aug 30				<b>45</b> Jun 30—Jul 11	
<b>46</b> Jul 3—31				<b>46</b> Jul 3—31	
<b>49</b> May 31, Jun 21, Jul 19				<b>47</b> Jun 28—29	
				<b>48</b> Ealy Jul — Jul 9	

# Map of Venues



**A** Center for Research & Development in Higher Education  
21 Jun 28

**B** Multimedia Education Bldg.  
46 Jul 3–31

**C** Graduate School of Information Science & Technology  
15 Jun 24

**D** Institute for Genetic Medicine  
40 Jul 11

**E** Faculty House "Trillium"  
39 Jul 10–12  
44 Jun 23–Jul 11

**F** Faculty of Science  
5 Jun 11–13  
47 Jun 28

**G** The Hokkaido University Museum  
20 Jun 27  
25 Jun 28–29  
42 Jun 15–Jul 31  
43 Jun 17–Aug 30

**H** Humanities & Social Sciences Classroom Bldg.  
1 May 17  
26 Jun 29

**I** Centennial Hall  
39 Jul 10–12

**J** Clark Memorial Student Center  
4 May 27  
32 Jul 5  
34 Jul 5–Jul 7  
38 Jul 10  
41 Jul 11  
45 Jun 30–Jul 11  
47 Jun 29

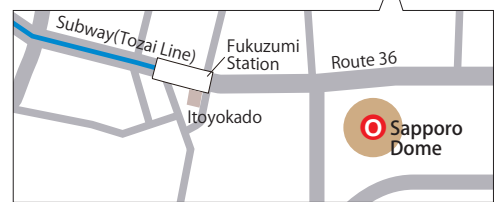
**K** Conference Hall  
2 May 22  
7 Jun 15  
8 Jun 16–17  
12 Jun 23  
13 Jun 24  
14 Jun 24  
16 Jun 25  
17 Jun 25  
18 Jun 25  
19 Jun 26–27  
22 Jun 28  
24 Jun 28–29  
27 Jun 29  
30 Jul 2–6  
31 Jul 3–4  
33 Jul 5  
34 Jul 5–7  
35 Jul 6  
36 Jul 7

**L** Sapporo L-PLAZA  
37 Jul 9

**M** Sapporo55 Bldg.  
3 May 24  
23 Jun 28  
29 Jul 2

**N** Sapporo Station, Odori Park, Tanukikoji Shopping Street  
48 Ealy Jul–Jul 9

**O** Sapporo Dome  
9 Jun 19  
10 Jun 19  
11 Jun 21



**P** Toya Sogo Center  
6 Jun 14



# Background of Sustainable Weeks 2008 by Prof. Hondoh

Date June 23, 2008 (Finished)

## Speech : Background of The Symposium Sustainability Weeks 2008-G8 Summit Round

Human beings are now facing various crises: climate change, food problems, energy crisis, the spread of new infectious diseases—all of which are closely related to our survival; they question the sustainability of human society. In 1987, the U.N. Brundtland Commission insisted that it was important to restrain the requirements of current generations so as not to spoil the potential of future generations. The 2000 UN Millennium Report raised an important question; can we ensure that the future generations survive on this planet? Under the circumstances, the United Nations and associated international organizations have been repeatedly appealing to institutions of all levels, nations occupying the top category, for the pursuit of sustainable development.

Universities are expected to play an important role both in research and education, for the realization of sustainable development. We, as a university, have the potential to contribute to comprehensive academic fields in relation to sustainability. In 2005, in order to meet the expectations of the global community, we established the Hokkaido University Initiative for Sustainable Development ([HUISD](#)). By taking up five fields, including global warming, integrated water management, recycling-oriented community, infectious diseases, as well as food and forests, the institute has developed a variety of international activities under the initiative of the university. A series of activities have developed into studies for the solution to concrete challenges that include regional problems such as environmental problems in Northeast Asia and the Sea of Okhotsk, or measures against infectious diseases in Africa and Southeast Asia. Meanwhile, on the educational front, we are involved with the international educational consortium in the capacity of a founding member of [ProSPER. Net](#) (The Promotion of Sustainability in Postgraduate Education and Research Network). Further, in April 2008, we established the [Center for Sustainability Science](#), Hokkaido University, in order to address sustainability-related research and education in an interdisciplinary manner.

Since 2006, the [HUISD](#) has organized symposia every year under the theme of sustainability. Above all, this year, the G8 Summit is scheduled to be held in Toyako, Hokkaido. Therefore, we have decided to convene a series of international conferences and symposia between June 23 through July 11, which includes the G8 Hokkaido Toyako Summit 2008 schedule, and the duration in which they will be held has been labeled "[Sustainability Weeks 2008 – G8 Summit Round.](#)" Moreover, since September 2007, we have continuously conducted a campaign called the Sustainability Marathon in order to raise awareness concerning sustainable societies. We regard this as a good opportunity to share latest achievements with researchers and educators all around the world as the world focuses its attention on Hokkaido during this time.

Today marks the long awaited opening of the [Sustainability Weeks 2008](#). The number of projects scheduled to occur during this time is thirty-six (fifty total if pre-events are included) and covers six categories: (i) climate changes, environmental changes, (ii) food, water, hygiene, health, (iii) intellectual innovations, technological innovations, social changes, (iv) natural history, biodiversity, nature preservation, (v) education, human resources development, enlightenment; and (vi) humanrights, culture, and peace. In today's opening symposium, discussions have been organized concerning the formation of a sustainable society from four perspectives—that of earth science, technological



Takeo Hondoh: Executive and Vice-President, Hokkaido University

innovation, social evolution, and infectious diseases. Tomorrow and the next day will focus on global warming as experts debate the ramifications of this phenomena

## Hokkaido University Sustainability Weeks 2008

Holding the [G8 University Summit](#) is another characteristic event of this period. It constitutes the very first attempt wherein university presidents from the G8 and emerging nations will convene. Under the theme of "Global Sustainability and Role of Universities," delegates from thirty-seven universities in fourteen countries will gather in Sapporo.

To implement such a large-scale project, we endeavored to reduce the environmental burden; however, due to unavoidable trips and conferences apx. 330 tons of carbon dioxide were emitted. In order to offset this we will improve the cutting and thinning of the university's research forest. ([Effor to offset carbon emission](#))

By means of the various endeavors mentioned, Hokkaido University transcends the framework of the university to provide citizens and administrative institutions with an opportunity to share the results of its state-of-the-art research and education. We anticipate that it will turn out to be a head start towards the realization of a sustainable society.

### Presentation Data

\*Presentation data is free to download through the database called, "Hokkaido University Collection of Scholarly and Academic Papers ([HUSCAP](#))"

#Link to the presentation data of [Background of Sustainable Weeks 2008 : G8 Summit Round](#).

Organization | [Sustainability Weeks 2008](#)

Category | [Conference/Symposium/Forum/Seminar](#)



## **2. Abstracts and Programs**



# Hokkaido University Sustainability Weeks 2008-G8 Summit Round

June 23 — July 11, 2008



Hokkaido University looks at G8 Hokkaido Toyako Summit 2008 as a tremendous opportunity to gather momentum in realizing a sustainable society. HU will host a series of events under the title of "Sustainability Weeks 2008". Researchers, educators, students and citizens from around the globe will assemble here, share their wisdom, and take a step forward to the future.

Hokkaido University Secretariat for Sustainability Weeks 2008

North8, West5, Sapporo, 060-0808, Japan Phone: +81-(0)11-706-2093 FAX: +81-(0)11-706-4796 E-mail: office2@sustain.hokudai.ac.jp

■ For more information, please visit our website: <http://sw2008.jp>

## Foreword



It is our great pleasure to hold “Sustainability Weeks 2008: G8 Summit Round” from June 23 through July 11 and to host various symposia and outreach programs in pursuit of a sustainable future.

Our world is home to a total of more than six billion people today, and the earth faces various environmental issues, including climate change and biodiversity degradation, as well as such problems as food and water resource shortages and the spread of poverty and infectious diseases.

With the hope that both people today and future generations can enjoy a healthy and comfortable life, entities on various levels need to make efforts toward resolving these common issues facing humanity as they work to build a sustainable society. Individual citizens, educational and other institutions and organizations, as well as local and national governments must work together toward the common goal of creating a sustainable society.

Hokkaido lies on the Sea of Okhotsk, the world’s lowest-latitude sea that freezes over, and is a region where the effects of global warming are readily apparent. Hokkaido University, one of Japan’s leading universities, has its campus and various research institutes in this geographically unique area. Taking advantage of this distinct feature, we have accumulated our university’s resources to contribute to the achievement of the goal of humankind to create a sustainable future, alongside our work to search for wisdom and create knowledge through education and research.

We are holding Sustainability Weeks 2008 as an opportunity to both further accelerate our efforts in this area and to call upon more people to become involved. During this three-week event, which should be called the “Campaign to Promote Research and Education to Create a Sustainable Society”, more than thirty international symposia and outreach programs will be held.

We are most honored to welcome to Sustainability Weeks distinguished speakers and participants from around the world who are working toward the creation of a sustainable society. We hope this unique opportunity will promote international collaboration in both education and research, transcending academic, national, and regional boundaries, so that more people will be encouraged to take steps to ensure a sustainable future for humankind.

**Hiroshi Saeki**  
President  
Hokkaido University



## Overview of Sustainability Weeks 2008-G8 Summit Round



Hokkaido University was founded in 1876 as Japan's first modern university. Over the past 130 years or so, HU have achieved many successes in our scientific, technological and academic efforts to forge a harmonious relationship between the natural environment and mankind. With twelve academic departments and eighteen graduate schools, HU has become one of the leading comprehensive universities in Japan. In 2005, we established the Hokkaido University Initiative for Sustainable Development (HUISD), which is dedicated to finding global solutions to various problems and thus adds even more impetus to research and education in this important field.

Since 2006, we have held annual international symposiums and outreach programs focusing on the theme of sustainability. In this, the third year of the program, we will hold "Sustainability Weeks 2008-G8 Summit Round" before and during the G8 Hokkaido Toyako Summit. While the G8 Summit itself will be held amidst increasing attention to international action against global warming, the Sustainability Weeks 2008 will focus not simply on this specific issue but also on the broader perspective of what we can do now to succeed an Earth that future generations will be healthy and comfortable to inhabit. For three weeks, a series of 30 programs, including international symposiums, special museum exhibitions, and outreach programs will focus intensively on various issues related to the sustainability of human society and nature.

In the series of symposia to be held the first week, the scientific aspects of climate change as well as the social reforms and technical innovations in the era of global warming will be discussed. An expert who has played a central role on the Intergovernmental Panel on Climate Change (IPCC) is invited. Experts from China and Europe who are active in fields related to alternative energy and environmental policy are also invited to engage in discussions with Hokkaido University researchers, with the aim of addressing, from a variety of angles, the true nature of the problems we confront.

In the following weeks, diverse issues will be discussed concerning food and water supply, and human health that are being threatened by the loss of biodiversity and environmental disturbances in addition to global warming itself. Unfairness and conflicts are problems based upon the conventional social structure which gives the top priority to a profit. Education and communication are another issues that cannot be avoided for realizing sustainable society. To address these issues, we must delve deeply into individual problems while remaining heedful of new issues that arise through the complex interaction of those problems. It is also important for all stakeholders, including ordinary citizens and students, to join in the effort to find solutions.

To make the Sustainability Weeks truly in tune with anti-global warming measures, Hokkaido University will offset the carbon dioxide emitted during the event by improving its expansive research forests and on-campus woods. This is the first time in Japan that a university attempts to absorb the carbon dioxide it emits, by means of its own grounds.

The G8 University Summit will be held in Sapporo during the Sustainability Weeks. This will be the first effort to have university presidents from G8 countries and plus meet to discuss under the theme, “Global Sustainability and the Role of Universities”. In contrast to the Sustainability Weeks, which will feature discussions about specific problems, the G8 University Summit will survey the overall picture of issues facing humanity with a view to sharing the basic philosophies necessary for higher education in the 21st century. As a member of the G8 University Summit’s board, Hokkaido University will play host to this important event.

The Sustainability Weeks 2008 will provide a unique opportunity for participants to discover what kinds of discussions are under way in various fields to tackle the issues we face. Participants will be exposed to leading-edge debates, including information that cannot be found in the mass media or the Internet, and will therefore have the opportunity to reconsider from a personal perspective what must be done for the sake of the future.

It is my hope that Sustainability Weeks will generate fruitful discussions and new human networking which accelerate efforts to create sustainable society.

**Takeo Hondoh**

Vice-president

Chairperson of the Committee for Sustainability Weeks 2008

Hokkaido University

# Calendar and Index I

## Hokkaido University Sustainability Weeks 2008 – G8 Summit Round

### Symposia and Workshops

June 23	<i>Sustainability Weeks 2008 Opening Symposium "Toward a Sustainable Low Carbon Society"</i>	Page. 9
	<i>Drastic Change in the Earth System during Global Warming</i>	Page. 25
June 24	<i>How to make Sustainable Low Carbon Society - Synergy of Social &amp; Engineering System -</i>	Page. 37
June 23-25	<i>Poster Session</i>	Page. 47
June 24	<i>2008 Int'l Workshop on Multi-Media Signal Processing</i>	Page. 65
	<i>Environmental Monitoring for Conservation of Ecosystems</i>	Page. 66
June 25	<i>Dynamics and Pathway of Land System Change</i>	Page. 67
	<i>Global Warming - Message from Scientists</i>	Page. 68
June 26-27	<i>Northeast Asia in the Cold War: New Evidence and Perspectives</i>	Page. 69
June 27	<i>Neo-Science of Natural History : Origin &amp; Evolution of Natural Diversity</i>	Page. 70
	<i>Science Café Events "Outreach for the Most Recent Information on Global Warming"</i>	Page. 71
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	<i>Fuel Cell Experiments - Environment-Friendly Energy-</i>	Page. 73
June 28-29	<i>Taxonomy Returns! -For the Better Understanding of our Mother Nature-</i>	Page. 74
June 29	<i>The Present &amp; Future of Ainu Studies, Part I</i>	Page. 75
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July 6	<i>Int'l Symposium on Sanitation in Hokkaido University</i>	Page. 84
July 7	<i>Catalysis Leading to a Sustainable Society</i>	Page. 85
July 9	<i>Int'l Symposium "Peace, Reconciliation &amp; Civil Society: Toward a Sustainable Peace in East Asia &amp; Europe"</i>	Page. 86
July 10-12	<i>Sustainable Should Be Female Scientists' Career! Environments for Gender Equality &amp; Work-Life Balance in Science</i>	Page. 87
July 11	<i>Beyond the Double Helix ~ Life Science for the Disease Free Society ~</i>	Page. 88
	<i>Sustainability Weeks 2008 Closing Symposium</i>	Page. 89

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June 17- Aug. 30	<i>Museum Exhibit "Environment and Resources of Lake Toya &amp; Usu Volcano Area"</i>	Page. 91
June 23- July 11	<i>Photo Summit "Planet Aqua" Photographic Exhibition</i>	Page. 92
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## Student Initiatives

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## Radio Program

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## Calendar and Index II

### Hokkaido University Sustainability Marathon

The "Sustainability Research and Education Promotion Marathon" refers to a campaign hosted by Hokkaido University from September 2007 through July 2008 with the objective of accelerating research and education around the world to realize a sustainable society.

The long-term Promotion Marathon contains a three-week intensive campaign named "Sustainability Weeks 2008 –G8 Summit Round" which starts on 23 June, just before the G8 Hokkaido Toyako Summit. A series of symposia, workshops and outreach programs, listed in the following table, initiated the Sustainability Weeks 2008.

\* S: Symposium P: Public Lecture O: Other Type of Event

2007		
	Category	Title
Sep.11-27	O	<i>Zoonosis Control Training Course for International Collaboration Centers 2007</i>
Sep.17- Oct.11	O	<i>Promoting Forest Ecotourism to Revitalize Regional Economies in Africa</i>
Sep.21-22	S	<i>In-situ Characterization of Catalyst -Presence and Future Aspects</i>
Sep.24-25	S	<i>Japan Russia Student Forum 2007</i>
Sep.25	S	<i>CRC International Symposium in Lyon on Cross-Coupling &amp; Organometallics (in France)</i>
Sep.25-26	S	<i>Plant Science for Biomass &amp; Food Production in Acid Soil</i>
Oct.1-5	S	<i>The Origin and Evolution of Natural Diversity</i>
<b>"Hokkaido University Sustainability Weeks 2007"</b>		
Oct.20	P	<i>Recovery of Deteriorated Nature and Community – Adaptive Management for Natural Environment and Society</i>
Oct.21	P	<i>How Global Warming Change Environment in Hokkaido</i>
Oct.24	P	<i>Sustainable Water Management</i>
Oct.24-25	S	<i>Sustainable Water Environment: Integrated Water Resources Management-New Steps</i>
Oct.27	P	<i>Imitation Problem of Indigenous Art</i>
Oct.30	O	<i>Opening Ceremony of Research Center for Zoonosis Control</i>
Oct.31	S	<i>Zoonosis Control – Prescription for Fighting against Zoonoses</i>
	P	<i>How Global Community Tackles Global Warming?</i>
Nov.17	P	<i>Significance of the adoption of the UN Declaration on the Rights of Indigenous People</i>
Nov.30	P	<i>Online materials for stimulating the use of indigenous languages: Example of Hawaiian</i>
Dec.15-16	S	<i>CAIS International Symposium – Ainu Culture Promotion Law : Its Past, Present and Future</i>

## 2008

Jan.16-24	S	<i>Regional Workshop for Avian Influenza Control</i>
Jan.23	S	<i>Frontiers of Gender Studies - Gender Medicine</i>
Jan.24-25	S	<i>Hokkaido University and Seoul National University Joint Symposium in Seoul</i>
Jan.30	S	<i>Pan-Okhotsk Region International Symposium</i>
Feb.12	S	<i>Climate Change and Human Security</i>
Feb.29- Mar. 3	S	<i>Tourism Creation Forum 2008; The Rise of Neo Tourism</i>
Mar.8-9	O	<i>Hokkaido University Days in Beijing</i>
Mar.23	P	<i>Outlook for the negotiations over the Global Warming - What should we do?-</i>

## Symposia and Workshops in Fiscal Year 2008

May 17	<i>Being Indigenous &amp; Women :Gender History for Self-Reliance and Borderless Development</i>	Page. 99
May 22	<i>Neighbors must share the Environment that links them: Dialogue with the Youth Delegation from Russia</i>	Page.100
May 24	<i>Science Café Events : The Bio-diversity and Sapporo Maruyama Zoo</i>	Page.101
May 27	<i>University-led Ventures Business Hokkaido Forum</i>	Page.102
June 11-13	<i>JST Presto Symposium on Mathematical Sciences towards Environmental Problems</i>	Page.103
June 14	<i>Environment Forum in Lake Toya</i>	Page.104
June 15	<i>Human Dimensions of Invasive Alien Species Issues</i>	Page.105
June 16-17	<i>Int'l Symposium on "Nanotoxicology Assessment &amp; Biomedical, Environmental Application of Fine Particles &amp; Nanotubes" (ISNT2008)</i>	Page.106
June 19	<i>Changing Polar Regions - Research Frontier &amp; Its Education -</i>	Page.107
June 19	<i>Hokkaido &amp; Far-east Russia Environment Forum for Sustainable Development</i>	Page.108
June21	<i>Environmental Leadership Initiative for Asian Sustainability (ELIAS)</i>	Page.109
June 23- July 11	<i>To be continued to "Hokkaido University Sustainability Weeks 2008"</i>	Page. 4

# **Programs, Profiles and Abstracts**

**Hokkaido University Sustainability Weeks -G8 Summit Round**

## **Opening Symposium**

**“Toward a Sustainable Low Carbon Society”**

**June 23 (Mon)**

**Venue :Conference Hall, HU**

**Main Organizer :Committee for Sustainability Weeks 2008**

**Supported by :Ministry of Education, Culture, Sports, Science and Technology**

**Hokkaido University Sustainability Weeks 2008 – G8 Summit Round  
Opening Symposium “Toward a Sustainable Low Carbon Society”  
-Program-**

Officially opens Sustainability Weeks 2008, which will discuss topics of what we can do now for future generations from various perspectives such as those of natural science, social reform and technological innovation.

**June 23(Mon); Main Conference Hall**

**Opening**

- |             |   |
|-------------|---|
| 0900 – 0905 | Opening Address<br>By Hiroshi Saeki, President of HU<br>* “HU” is an abbreviation of “Hokkaido University”. |
| 0905 – 0915 | Congratulatory Speech<br>By Kiyoshi Simizu, Higher Education Bureau   |
| 0915 – 0930 | Background of This Symposium<br>By Takeo Hondoh, Chairperson, Committee for Sustainability Weeks 2008, HU   |

**Plenary Session 1. Science Uncovering & Forecasting Global Change**

**Chairperson: Atsumu Ohmura, Professor, ETH Zürich**

- |             |   |
|-------------|---|
| 0930 – 1030 | “Climate and Environment Changes over Globe and China”<br>By Shi Guangyu, TAR Lead Author, IPCC<br>Professor, Institute of Atmospheric Physics, Chinese Academy of Sciences |
| 1030 – 1045 | Break   |
| 1045 – 1115 | “Drastic Change during Global Warming: What we know and don’t know”<br>By Motoyoshi Ikeda, Professor, Faculty of Environmental Earth Science, HU                            |
| 1115 – 1130 | Summary of This Session<br>By Atsumu Ohmura, Professor, ETH Zürich  |

**Lunch Break**

**1130 – 1300**

**Plenary Session 2. Accelerating Technological Innovation for Structural Change**

**Chairperson: Bunsho Ohtani, Professor, Catalysis Research Center, HU**

- |             |  |
|-------------|--|
| 1300 – 1400 | “Power from the Sun, the Advent of Mesoscopic Solar Cells”<br>By Michael Grätzel, Professor, Faculty of science, Swiss Federal Institute of Technology, Lausanne |
| 1400 – 1430 | “Green catalytic conversion of inedible biomass for sustainable development”<br>By Atsushi Fukuoka, Professor, Catalysis Research Center, HU                     |
| 1430 – 1445 | Summary of This Session<br>By Wataru Ueda, Professor, Director of Catalysis Research Center, HU  |
| 1445 – 1500 | Break  |



**Plenary Session 3. Necessary Policy for a Balanced Society -Pursuing Coexistence, Fairness & Development  
Chairperson: Kenichi Nakamura, Professor, Faculty of Public Policy, HU**

- 1500 – 1600 “Policies for a Low Carbon Society: Is the Industrialized World Doing Enough?”  
By Miranda Schreurs, Professor, Director of the Environmental Policy Centre, Free University of Berlin
- 1600 – 1630 “How to make a Sustainable Low Carbon Society in Asia -Japan’s Strategy on Climate Change- a critical analysis from environmental economics-”  
By Fumikazu Yoshida, Faculty of Public Policy, HU
- 1630 – 1645 Summary of This Session  
By Kenichi Nakamura, Professor, Faculty of Public Policy, HU
- 1645 – 1700 Break

**Plenary Session 4. Challenges as a Frontier of Protecting the Lives  
Chairperson: Jiro Arikawa, Professor, Graduate School of Medicine, HU**

- 1700 – 1750 “HOW ARE WE PREPARED FOR EMERGING ZOOLOSES?”  
By Ayato Takada, Professor, Research Center for Zoonosis Control Department of Global Epidemiology, HU
- 1750 – 1800 Summary of This Session  
By Jiro Arikawa, Professor, Graduate School of Medicine, HU
- 1800 Closing Remarks  
By Takeo Hondoh, Chairperson, Committee for Sustainability Weeks 2008, HU

**Reception hosted by the President of Hokkaido University**

**1900 - 2030**



Chairperson and Speaker

## Atsumu Ohmura

Professor  
ETH Zürich, Switzerland

- > **【Plenary Session 1】** Monday, June 23, 2008 / 9:30 - 11:30
- > **【Issue 2】** Tuesday, June 24, 2008 / 11:20 - 11:50

### **ABSTRACT :**

Decay of Greenland and Antarctic ice sheets, mountain glaciers and ice caps- especially the case of small glaciers and Greenland

The majority of the world glacier surface area (86%) and ice volume (90.9%) is held by the Antarctic ice sheet. The Greenland ice sheet has rather modest surface area (11%) and ice volume (8.8%) in comparison with the Antarctic. Total surface area and ice volume held by smaller mountain glaciers and ice caps outside Antarctica and Greenland account for only 3% and 0.3%, respectively. It is, however, these smaller glaciers that influenced the total mass balance of the glaciers most strongly during the second half of the 20th century. The smaller glaciers are estimated to have contributed about 5 cm of the sea-level rise during the 20th century, while the contribution from Greenland was probably around 2.5 cm. Theoretically there is a justified estimation for smaller glaciers to respond more quickly to climate changes in comparison with larger glaciers. These values can be compared with the sea-level contribution by thermal expansion of the ocean which is close to 3 cm. The mass balance of the Antarctic ice sheet is still shrouded with large uncertainty, but recent evidences tend to indicate a negative balance, although the range of the variation is large. These changes are the result of the ongoing climate change. The relationship between the observed climate change and mass balance will be brought together to estimate the effect of the climate change onto the glacier variations.

### **RESEARCH INTERESTS :**

Main interest lies in the global energy balance of the earth. Among various terms of energy exchange, the radiative terms have been the field of major engagement. The combination of the field observations and theoretical computations was used to cover the region from the Equator to the Polar regions. Further, the relationship between the energy balance of the earth and the change in the cryosphere has been pursued.

### **RESEARCH ACHIEVEMENTS :**

The main contribution is to have renewed the global energy balance which was stagnating at the level of the Budyko heat balance climatology. He is credited for discovery of the missing absorption, global dimming and global brightening. The important role played by infrared radiation for the glacier mass balance was also quantitatively clarified. He is the initiator of the Baseline Surface Radiation Network of the World Climate Research Programme, which has become the basis for the recent development of realistic GCMs.



Speaker and Moderator

## Motoyoshi Ikeda

Professor

Faculty of Environmental Earth Science, Hokkaido University, Japan

- > **【Plenary Session 1】** Monday, June 23, 2008 / 10:45 – 11:15
- > **【Issue 1】** Tuesday, June 24, 2008 / 9:40 – 10:40
- > **【Issue 3】** Tuesday, June 24, 2008 / 13:30 – 14:30

### **ABSTRACT :**

#### ① Drastic Change during Global Warming: What we know and don't know

Global warming seems to be recognized as a real phenomenon crucial to human being so that Nobel Peace Prize has been awarded to IPCC and Al Gore. Although someone might think that we well know about global warming, the uncertainty of the IPCC projection is larger than 50 % on the warming rate in this century. Therefore, scientific clarification is still required on many issues, which are essential for a more reliable prediction. A few hot issues will be presented for the scientists to focus their efforts on critical feedback mechanisms associated with global warming, and also for wider public to be aware of the on-going research activities for a more reliable projection.

#### ② Clarify causes and magnitude of sea level rise

Although a major component of the sea level rise in this century is considered to be a thermal expansion of the ocean, the other components such as glaciers and the huge ice sheets in Greenland and Antarctica might contribute significantly. If the latter components play an important role, the projected sea level rise would be much larger than 1 m, exceeding the IPCC Report prediction.

#### ③ When will summer Arctic sea ice disappear?

The sea ice cover in the Arctic Ocean is predicted to be a seasonal one and to disappear in summer near the end of this century. However, deviation is still very large among the global warming model experiments. The anomalously low record in last summer hit and convinced some modelers to believe the faster disappearance. The scientists should identify a positive feedback in the Arctic climate system and are responsible for the more comprehensive prediction.

### **RESEARCH INTERESTS :**

Polar climate, Natural-societal interaction

### **RESEARCH ACHIEVEMENTS :**

Mesoscale processes in the ocean, Ice-ocean modeling, Arctic climate, Climate-society modeling



Chairperson

## Bunsho Ohtani

Professor

Catalysis Research Center, Hokkaido University, Japan

> 【Plenary Session 2】 Monday, June 23, 2008 / 13:00 - 14:45

### RESEARCH INTERESTS :

Fundamental studies and applications of heterogeneous photocatalysis, design and development of highly active and selective solid photocatalysts, and development of solid particles of anisotropic morphology.

### RESEARCH ACHIEVEMENTS :

Bunsho OHTANI, Hikarishokubai Hyojun Kenkyuho (“Scientific Methods in Photocatalysis”), Tokyo Tosho (2005).

Bunsho OHTANI, “Preparing Articles on Photocatalysis–Beyond the Illusions, Misconceptions and Speculation”, Chemistry Letters, 37, 216 (2008).



Speaker

## Michael GRÄTZEL

Professor

Faculty of Science, Swiss Federal Institute of Technology, Lausanne

> [Plenary Session 2] Monday, June 23, 2008 / 13:00 - 14:00

### **ABSTRACT :**

#### **POWER FROM THE SUN, THE ADVENT OF MESOSCOPIC SOLAR CELLS**

Photovoltaic generation of electricity and hydrogen from the sun are an attractive option for an environmentally friendly solution of the energy problem. Learning from the concepts used by green plants in natural photosynthesis we have developed a molecular photovoltaic device whose overall efficiency for solar energy conversion to electricity has already attained over 11%. Impressive stability both under long-term light soaking and high temperature stress has been reached. First industrial production on a 120 MW scale has started. The newly developed mesoscopic oxides have meanwhile found are also use in tandem cells for the cleavage of water into hydrogen and oxygen by sunlight. These systems will promote the acceptance of renewable energy technologies, not least by setting new standards of convenience and economy.

### **RESEARCH INTERESTS :**

Artificial photosynthesis, Generation of electricity and hydrogen from sunlight. Photon capture and light-induced charge separation in mesoscopic systems. Electricity storage in nanocrystalline lithium ion batteries.

### **RESEARCH ACHIEVEMENTS :**

Professor Michael Grätzel's contributions to fundamental science are remarkably broad and include the invention of mesoscopic solar cells, which are presently investigated on a worldwide scale by a very large number of researchers. The prototype of this new photovoltaic family is the dye-sensitized solar cell (DSC), which employs molecular sensitizers in order to capture sunlight. Upon excitation they inject electrons into a network of oxide semiconductor nanoparticles which are conducting the charge carriers to the current collector. His revolutionary approach has allowed for the first time to reach very high efficiencies in a photovoltaic conversion process that separates solar light harvesting and charge carrier transport. His pioneering work on nanocrystalline junctions opened up a whole new research front that lead to important discoveries beyond the photovoltaic field, ranging from solar hydrogen generation from water to electrochromic as well as electroluminescent displays.



Speaker

**Atsushi Fukuoka**

Professor

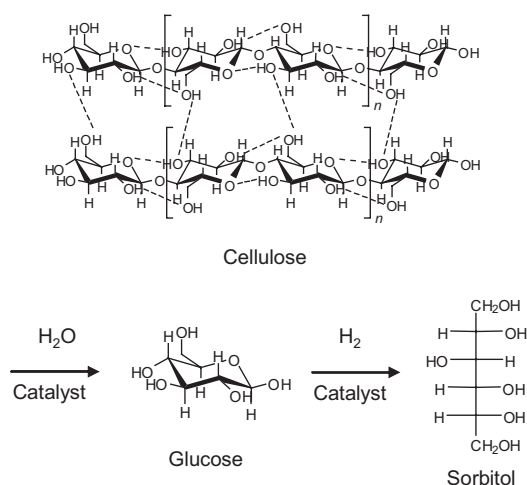
Catalysis Research Center, Hokkaido University, Japan

> [Plenary Session 2] Monday, June 23, 2008 / 14:00 - 14:30

**ABSTRACT :**

**Green catalytic conversion of inedible biomass for sustainable development**

Currently much attention has been focused on the synthesis of chemicals and fuels from renewable biomass. Inedible cellulose is the most abundant organic compound in nature as the main component of plants. However, the use of cellulose is limited, because cellulose is resistant to degradation due to its robust crystal structure with extensive hydrogen bonding. We have succeeded in the first catalytic conversion of cellulose into soluble sugar compounds. Under the hydrogenolysis conditions, cellulose is selectively converted into sorbitol and its derivatives over supported Pt or Ru catalysts (Figure 1: *Angew. Chem. Int. Ed.*, **45**, 5161 (2006).). This finding will open new opportunities for heterogeneous catalysis in the cracking of inedible biomass to soluble chemicals.



**Fig.1** Catalytic conversion of cellulose into sorbitol.

**RESEARCH INTERESTS :**

Molecular design of heterogeneous catalysts and development of new catalytic reactions.  
Catalytic conversion of inedible biomass into chemicals. Template synthesis and catalysis of metal nanoparticles in mesoporous materials

**RESEARCH ACHIEVEMENTS :**

First catalytic conversion of cellulose into soluble chemicals by supported metal nanoparticles.  
Synthesis of highly active and selective PROX catalysts for reforming of hydrogen for fuel cells.



Commentator

## Wataru Ueda

Professor

Director

Catalysis Research Center, Hokkaido University, Japan

> 【Plenary Session 2】 Monday, June 23, 2008 / 14:30 - 14:45

### **RESEARCH INTERESTS :**

The following three projects of environmental catalysis engineering are of my main research interests;

- 1) New catalytic process development for utilizing alkane resources in high efficiency,
- 2) Fabrication of catalytic oxidation filters which can adsorb and decompose organic wastes,
- 3) New type fuel cell systems and new devices which can convert catalytic oxidation energy to another type energy such as electromotive force.

### **RESEARCH ACHIEVEMENTS :**

The above research projects have been successfully done on the basis of solid-state nano-material structuring.



Chairperson

**Kenichi Nakamura**

Professor

Faculty of Public Policy, Hokkaido University, Japan

> 【Plenary Session 3】 Monday, June 23, 2008 / 15:00 - 16:45

**RESEARCH INTERESTS :**

- (1) International Relations
- (2) Globalization and Nationalism
- (3) Terrorism and Counter - Terrorism

**RESEARCH ACHIEVEMENTS :**

- (1) “How to Define Terrorism” (Japanese) proceedings of comparative Politics,  
(Waseda University Press, 2007)
- (2) “Peace”, “Wars”, (Japanese) in Dictionary of Social Thought,  
(Iwanami Book Publishers, 2008)
- (3) “Globalization and State” (Japanese), Kozo Ogawa (ed.) Plurality of Modern,  
(Hokkaido University Press, 2001)





Speaker

## Miranda Schreurs

Director, Environmental Policy Research Centre  
Free University of Berlin, Germany

> [Plenary Session 3] Monday, June 23, 2008 / 15:00 - 16:00

### **ABSTRACT :**

#### National, Regional, and International Efforts to Achieve a Low Carbon Society

This presentation will discuss and critique efforts underway to achieve low carbon societies. It will consider initiatives being taken in the European Union, within Germany, in the United States (especially in California), and at the local level. The presentation will consider the factors that are driving societies to make these changes and the obstacles that must be overcome to achieving the goals of a low carbon society. Consideration will also be given to ways to heighten international concern of the need to develop low carbon societies.

### **RESEARCH INTERESTS :**

Schreurs' work focuses on comparative environmental and energy politics and policy. Much of her work addresses questions of climate change politics and policies and regional environmental cooperation and conflict in Europe, Asia, and North America.

She has also studied environmental, development, and women's civil society groups in Europe, North America, and Asia.

### **RESEARCH ACHIEVEMENTS :**

Prior to becoming the director of the Environmental Policy Research Centre and Professor of Comparative Politics at the Freie Universität Berlin, Schreurs was Associate Professor in the Department of Government and Politics, University of Maryland. She was recently invited to join the German Advisory Council on the Environment. Schreurs has held fellowships from the SSRC-MacArthur Foundation Program on International Peace and Security Affairs, the Fulbright Foundation (Japan and Germany), and the National Science Foundation/Japan Society for the Promotion of Science.



## Speaker and Chairperson

# Fumikazu Yoshida

Professor

Faculty of Public Policy, Hokkaido University, Japan

- > **[Plenary Session 3]** Monday, June 23, 2008 / 16:00 - 16:30
- > **[Session 1]** Tuesday, June 24, 2008 / 9:15 - 12:30
- > **[Session 3]** Tuesday, June 24, 2008 / 16:20 - 17:30

### **ABSTRACT :**

#### How to make a Sustainable Low Carbon Society in Asia

–Japan’s Strategy on Climate Change- a critical analysis from environmental economics–

G8 summit will be held from 7<sup>th</sup> to 9<sup>th</sup> of July at Hokkaido Toyako. The main topic of the summit is the climate change and the post Kyoto agreement.

I will give a short perspective of Japan’s Strategy of Climate Change:

- 1, Long-Term Strategy,
- 2, Mid-Term Strategy,
- 3, Achieving Kyoto,

About the long-term strategy, Japan has proposed a plan sharing the long-term target of halving emissions by 2050 as a common global goal by developing innovative technologies and building a low carbon society.

About the mid –term strategy, Japan is suggesting three principles for establishing an international framework to address climate change beyond 2012:

- (1) all major emitters must participate, moving beyond the Kyoto Protocol,
- (2) the framework must be flexible and taking into the circumstances of each country,
- (3) the framework must achieve compatibility between environmental protection and economic growth.

About the achieving Kyoto, Japan has launched a national campaign for achieving the Kyoto target. However it is very difficult to achieve Kyoto target.

I will present the reason of its difficulty and the perspective in Asian area including China.

### **RESEARCH INTERESTS :**

Environmental Economics, Waste Management, Cyclical Economy

### **RESEARCH ACHIEVEMENTS :**

*The Economics of Waste and Pollution Management in Japan*, Springer Verlag, Tokyo, 204p., 2002.

*The Cyclical Economy of Japan*, Hokkaido University Press, Sapporo, 144p,2005



Chairperson

**Jiro Arikawa**

Professor

Graduate School of Medicine, Hokkaido University, Japan

> **【Plenary Session 4】** Monday, June 23, 2008 / 17:00 – 18:00

**RESEARCH INTERESTS :**

Laboratory animal studies, Applied veterinary science ,Virology

**RESEARCH ACHIEVEMENTS :**

“A new model of Hantaan virus persistence on mice: the balance between HTNV infection and CD8+ T-cell responses.” *Virology*,322,318-327 (2004)

“A pseudotype vesicular stomatitis virus containing Hantaan virus envelope glycoproteins G1 and G2 as an alternative to hantavirus vaccine in mice.”  
2005 Elsevier.doi:10.1016/j.vaccine.2005.12.040 (2005)

“Geographical distribution of Hantaviruses in Thailand and Potential Human health significance of Thailand Virus”: *Am J,Trop.Med,Hyg.*,75(5),2006,pp.994-1002  
American Society of Tropical Medicine and Hygiene (2006)

“Analysis of the immune response of Hantaan virus nucleocapsid protein-specific CD8+T cells in mice.” 2007 Elsevier Inc,doi:10.1016/j.virol.2007.02.039 (2007)

“Development of Serological Assays for Thottapalayam Virus,an Insectivore-borne Hantavirus” *Clinical and Vaccine Immunology*.Feb.2007 Vol.14 No.2 (2007)



Speaker

## Ayato Takada

Deputy Director and Professor

Research Center for Zoonosis Control, Hokkaido University, Japan

> [Plenary Session 4] Monday, June 23, 2008 / 17:00 – 17:50

### ABSTRACT :

#### HOW ARE WE PREPARED FOR EMERGING ZOOSESES?

Almost all of the newly emerging infectious diseases are zoonoses caused by agents that were originally harmless in their wild natural host animals and occasionally transmitted to other animal species, including humans, causing infectious diseases. Changes in the global environment and human behavior contribute to the emergence of new diseases by changing transmission dynamics and bringing people into closer and more frequent contact with pathogens.

We are facing a lack of research and educational basis directly involved in the control of zoonoses. One of the reasons is that research and education in medicine is aimed at maintaining and improving human and public health, while that in veterinary medicine is designed for infectious-disease prevention and clinical treatment of livestock and pet animals. Administrative barriers are also crucial.

Zoonoses are not eradicable infections since most of the causative pathogens are introduced from wildlife in nature. Such zoonotic infections can be controlled only by taking preemptive measures to predict and prevent their outbreaks. Thus, there is an urgent need to create a novel pioneering scientific discipline conducting the research and educational activities for the control of zoonoses.

### RESEARCH INTERESTS :

Host-virus relationship, Epidemiology of zoonoses, Virulence and tissue tropism of viruses, Pathogenesis of viral infections, Mucosal immunity and vaccines

### RESEARCH ACHIEVEMENTS :

“The pathogenesis of Ebola hemorrhagic fever” *Trends Microbiol.* 9, 2001; “Antibody-dependent enhancement of viral infection: molecular mechanisms and in vivo implications” *Rev. Med. Virol.* 13, 2003; “Intranasal immunization with formalin-inactivated virus vaccine induces a broad spectrum of heterosubtypic immunity against influenza A virus infection in mice” *Vaccine* 21, 2003; “A human macrophage C-type lectin specific for galactose and N-acetylgalactosamine promotes filovirus entry” *J. Virol.* 78: 2943-2947, 2004; “Enhanced virulence of influenza A viruses with the haemagglutinin of the 1918 pandemic virus” *Nature* 431, 2004.

# **Programs, Profiles and Abstracts**

**Hokkaido University Sustainability Weeks -G8 Summit Round**

## **Drastic Change in the Earth System during Global Warming**

**June 24 (Tue)**

**Venue** :Conference Hall, HU

**Main Organizer(s)** :Hokkaido University Initiative for Sustainable  
Development; Faculty of Environmental Earth Science, HU;  
Institute of Low Temperature Science, HU

## **Drastic Change in the Earth System during Global Warming -Program-**

Young and established researchers will clarify global warming through discussion in order to overcome the uncertainties included in the IPCC Fourth Assessment Report for more accurate prediction of temperatures, sea level rise and sea ice disappearance.

### **June 24(Tue); Main Conference Hall**

#### **Opening**

- |             |   |   |
|-------------|---|---|
| 0930 – 0935 | 5 | Opening Address<br>By Takeo Hondo, Chairperson, Committee for Sustainability Weeks 2008, HU   |
| 0935 – 0940 | 5 | Background of This Symposium<br>By Motoyoshi Ikeda, Professor, Faculty of Environmental Earth Science, HU<br>* Please refer to the page 15 for the profile of Motoyoshi Ikeda |

#### **Issue 1. “Clarify causes and magnitude of sea level rise”**

**Moderator: Motoyoshi Ikeda, Professor, Faculty of Environmental Earth Science, HU**

- |             |    |  |
|-------------|----|--|
| 0940 – 1010 | 30 | Presentation<br>By John Church, Chair, JSC of the World Climate Research Programme |
| 1010 – 1040 | 30 | Discussion   |
| 1040 – 1120 | 40 | Coffee Break and Poster Session  |

#### **Issue 2. “Deterioration of Greenland and Antarctic ice sheets plus glaciers and ice caps”**

**Moderator: Ralf Greve, Professor, Institute of Low Temperature Science, HU**

- |             |    |   |
|-------------|----|---|
| 1120 – 1150 | 30 | Presentation<br>By Atsumu Ohmura, Professor, ETH Zürich<br>* Please refer to the page 13 for the profile of Atsumu Ohmura |
| 1150 – 1220 | 30 | Discussion  |

#### **Lunch Break**

**1220 – 1330**

#### **Issue 3. “When will summer Arctic sea ice disappear?”**

**Moderator: Motoyoshi Ikeda, Professor, Faculty of Environmental Earth Science, HU**

- |             |    |  |
|-------------|----|--|
| 1330 – 1400 | 30 | Presentation<br>By Wieslaw Maslowski, Professor, Naval Postgraduate School |
| 1400 – 1430 | 30 | Discussion   |
| 1430 – 1440 | 10 | Break  |

**Issue 4. “Carbon uptake or emission by terrestrial ecosystem”****Moderator: Toshihiko Hara, Professor, Institute of Low Temperature Science, HU**

		Presentation	
		By Trofim Chr. Maximov, Research Associate Professor, Institute for Biological Problems of Cryolithozone, Russian Academy of Sciences	
1440 – 1530	50		
		Presentation	
		By Akihiko Itoh, Research Associate, National Institute for Environmental Studies	
1530 – 1600	30	Discussion	
1600 – 1610	10	Break	

**Issue 5. “Marine ecosystem change resulting in carbon emission”****Moderator: Yutaka Watanabe, Associate Professor, Faculty of Environmental Earth Science, HU**

		Presentation	
		By Michio Kawamiya, Group Leader, Japan Agency for Marine-Earth Science and Technology	
1610 – 1640	30		
1640 – 1710	30	Discussion	



Speaker

## John Church

Chair

JSC of the World Climate Research Programme, Switzerland

> [Issue 1] Tuesday, June 24, 2008 / 9:40 - 10:10

### **ABSTRACT :**

#### Sea level rise during global warming

At the end of the WCRP Workshop held two years ago, we recommended the following actions:

- \* Further attention to the 50-year record is needed to estimate the trend and uncertainty in global ocean heat content and steric sea level.
- \* Studies of thermosteric sea level for 1993-2003 using different techniques should be repeated with a common dataset, in order to understand differences in interannual variability and in 10-year changes.
- \* Continued measurement is essential of sea surface height (altimetry + SL gauges) and its steric (Argo) and eustatic (GRACE) components long enough to understand the error budgets of the individual elements and the capabilities of the combined system.
- \* Investigation is needed of the other synergies between Argo, altimetry, and GRACE, related to sea level.

### **RESEARCH INTERESTS :**

Climate Change, Sea Level, Physical Oceanography

### **RESEARCH ACHIEVEMENTS :**

The 2006 Roger Revelle Medal by the Intergovernmental Oceanographic Commission

A CSIRO Medal for Research Achievement in 2006

The 2007 Eureka Prize for Scientific Research

Chair -The Joint Scientific Committee of the World Climate Research Programme from 2006–08

Oceanographer -The Centre for Australian Weather and Climate Research and the Antarctic Climate and Ecosystems Cooperative Research Centre

Co-convening lead author - The chapter on sea level in the IPCC Third Assessment Report and co-chaired the WCRP Understanding Sea-level Rise and Variability Workshop

Co-Chair - The international Scientific Steering Group for the World Ocean Circulation Experiment 1994–98





Moderator

## Ralf Greve

Professor

Institute of Low Temperature Science, Hokkaido University, Japan

> **【Issue 2】** Tuesday, June 24, 2008 / 11:20 - 12:20

### RESEARCH INTERESTS :

*Motto: To study the state and evolution of ice sheets and glaciers on Earth and elsewhere in past, present and future climates by means of mathematical modelling and computer simulations.*

Inland ice sheets and glaciers are an important dynamic part of the Earth's climate system on time-scales of decades and more. More than 90% of the terrestrial freshwater reserves are stored in these ice masses, which amounts to ~70 meters of sea-level equivalent. Against the background of future global climate warming, research into the behaviour of ice sheets and glaciers is of great relevance. I conduct dynamic/thermodynamic simulations on the glaciation of the northern hemisphere during past glacial-interglacial cycles, on the past and present state of the Greenland and Antarctic ice sheets and on possible melting/decay of these ice sheets in future climate-warming scenarios. Further, I study large-scale instabilities of the glacial Laurentide ice sheet (Heinrich events) and the evolution and dynamics of the Martian polar caps during the last millions of years.

### RESEARCH ACHIEVEMENTS :

Seddik, H., R. Greve, L. Placidi, I. Hamann and O. Gagliardini. 2008. Application of a continuum-mechanical model for the flow of anisotropic polar ice to the EDML core, Antarctica. *J. Glaciol.* 54 (in press).

Greve, R. and S. Otsu. 2007. The effect of the north-east ice stream on the Greenland ice sheet in changing climates. *The Cryosphere Discuss.* 1 (1), 41-76.

Greve, R., R. Takahama and R. Calov. 2006. Simulation of large-scale ice-sheet surges: The ISMIP HEINO experiments. *Polar Meteorol. Glaciol.* 20, 1-15.

Greve, R. 2005. Relation of measured basal temperatures and the spatial distribution of the geothermal heat flux for the Greenland ice sheet. *Ann. Glaciol.* 42, 424-432.

Greve, R. and R. A. Mahajan. 2005. Influence of ice rheology and dust content on the dynamics of the north-polar cap of Mars. *Icarus* 174 (2), 475-485. doi: 10.1016/j.icarus.2004.07.031.

Greve, R., T. Zwinger, O. Gagliardini, E. Isenko, E. Edelmann and H. Seddik: Dynamic/thermodynamic modeling of the Gorshkov crater glacier at Ushkovsky volcano, Kamchatka. Invited presentation, AGU Fall Meeting, San Francisco, 2007.12.10-14.

Co-convenor of session JMS030 "Extraterrestrial Ice", 24th IUGG General Assembly, Perugia, Italy, 2007.07.02-13 (together with Prof. M. Lange, Munster, Germany).

Convenor of session IWG04 "Open Session on Glacier and Ice Sheet Research", AOGS 3rd Annual Meeting, Singapore, 2006.07.10-14 (together with Dr. S. Sugiyama, Sapporo, Japan).



Speaker

## Wieslaw Maslowski

Professor

Naval Postgraduate School, USA

> [Issue 3] Tuesday, June 24, 2008 / 13:30 - 14:00

### ABSTRACT :

#### On Recent Rate of Decline of the Arctic Sea Ice Cover

We use output from the Naval Postgraduate School (NPS) coupled ice-ocean model of the pan-Arctic region (Maslowski et al., 2004) and validate it against several data sets. While many previous studies have analyzed changes in ice extent and concentration, this research focuses on ice thickness and volume as it gives a better indication of the total sea ice cover variability and rates of change. Our analyses of combined sea ice and ocean model results suggests that the oceanic heat, in addition to atmospheric radiative and sensible heat input, contributes to sea ice melt, especially in regions coincident directly downstream of oceanic heat advection from the Pacific and Atlantic oceans (Serreze et al., 2007; Stroeve and Maslowski, 2007). The NPS model indicates an accelerated thinning trend in Arctic ice during the last decade. This trend is robust and independent of timescales for surface temperature and salinity relaxation in the ocean model (Maslowski et al., 2007). Validation of model output with submarine and satellite sea ice thickness data gathered during the last three decades supports this result. This lends credence to the postulation that the Arctic not only might (Maslanik et al., 2007), but is likely to be ice-free during the summer in the near future.

### RESEARCH INTERESTS :

Arctic Oceanography  
Sea Ice Dynamics and Thermodynamics  
Numerical Ocean and Sea Ice Modeling  
Ocean General Circulation  
Climate Change and Prediction

### RESEARCH ACHIEVEMENTS :

Maslowski, W., J.L. Clement Kinney, D.C. Marble, J. Jakacki (2008), Towards eddy-resolving models of the Arctic Ocean, in AGU book volume on "Ocean Modeling in Eddying Regime", M. Hecht and H. Hasumi eds., in print.

Maslowski, W., R. Roman, J. Clement Kinney (2008) Effects of mesoscale eddies on the flow of the Alaskan Stream. *J. Geophys. Res.*, in print.

Maslowski, W., J.L. Clement, J. Jakacki (2007), Towards Prediction of Environmental Change, *Computing in Science and Engineering*, vol. 9, no. 6, pp. 29-34.

Maslowski, W., D. Marble, W. Walczowski, U. Schauer, J. L. Clement, and A. J. Semtner, (2004), On climatological mass, heat, and salt transports through the Barents Sea and Fram Strait from a pan-Arctic coupled ice-ocean model simulation, *J. Geophys. Res.*, 109, C03032, doi:10.1029/2001JC001039

Maslowski, W., W.H. Lipscomb: High-resolution Simulations of Arctic Sea Ice During 1979-1993, *Polar Research*, 22, 67-74, 2003.

Maslowski, W., D.C. Marble, W. Walczowski, A.J. Semtner: On Large Scale Shifts in the Arctic Ocean and Sea Ice Conditions during 1979-1998, *Annals of Glaciol.*, V. 33, pp. 545-550, 2001.

Stroeve, J., and W. Maslowski, (2007). Arctic Sea Ice Variability during the last half century, in 'Climate Variability and Extremes During the Past 100 Years', Eds. S. Bronniman et al., Springer.



Moderator

## Toshihiko Hara

Professor

Institute of Low Temperature Science, Hokkaido University, Japan

> **【Issue 4】** Tuesday, June 24, 2008 / 14:40 - 16:00

### RESEARCH INTERESTS :

Ecology and physiology of boreal forests  
Modeling atmosphere-vegetation interactions

### RESEARCH ACHIEVEMENTS :

Watanabe T., Yokozawa M., Emori S., Takata K., Sumida A., & Hara T. (2004) Developing the multilayered integrated numerical model of surface physics-growing plants interaction, MINoSGI. *Global Change Biology* 10: 963-982.

Tripathi S.K., Sumida A., Shibata H., Ono K., Uemura S., Kodama Y. & Hara T. (2006) Leaf litterfall and decomposition of different above- and belowground parts of birch (*Betula ermanii*) tree and dwarf bamboo (*Sasa kurilensis*) shrub in a young secondary forest of Northern Japan. *Biology and Fertility of Soils* 43: 237-246.

Okuda M., Sumida A., Ishii H., Vetrova V.P. & Hara T. (2008) Establishment and growth pattern of *Pinus pumila* under a forest canopy in central Kamchatka. *Ecological Research* 23: doi: 10.1007/s11284-007-0445-1.



Speaker

## Trofim Chr. Maximov

Head, Dr. Sci. (Biology)

Plant Ecological Physiology and Biochemistry Lab,  
Institute for Biological Problems of Cryolithozone,  
Siberian Branch of Russian Academy of Sciences

> [Issue 4] Tuesday, June 24, 2008 / 14:40 - 15:30

### ABSTRACT :

#### THE CARBON CYCLE OF PERMAFROST-DOMINATED ECOSYSTEMS

This issue of carbon uptake of main Siberian permafrost forests and tundras has direct economic implications under the Kyoto Protocol. Not only can the uptake by permafrost ecosystems be used to counter industrial emission, but any surplus uptake capacity may be sold by emission trading. Large reservoirs of carbon have been accumulated in the ecosystems of this region over many centuries. We estimate that carbon stock in the soils of forest and tundra ecosystems of Yakutia is 17 *Gt C*.

The results of statistically reliable data on eddy-covariance (1996-2007), obtained at 12 stations, allowed us to quantitatively assess annual carbon fluxes in four representative biomes of the Russian Federation. It has been established that carbon sink significantly dominates in the permafrost forests of Yakutia compared to other investigated biomes of Russia. The sink here is greater than in the meadows and tundras of Russia by 1.5 and 4.5 times respectively. In total, all the territory of the Russian Federation is an area of considerable carbon sink equaling 1.9 *Gt C yr<sup>-1</sup>*. Largest carbon sink belongs to forests, followed by meadows, and then come bogged territories.

### RESEARCH INTERESTS :

Studies of biogeochemical cycles and its components in permafrost ecosystems. To develop flux tower networks in representative permafrost territories for continental and global upscaling.

### RESEARCH ACHIEVEMENTS :

“Influence of climatic and ecological changes on permafrost ecosystem” Yakutsk, 2003 and 2007

“Net Ecosystem Exchange of Carbon Dioxide and Water of Far Eastern Siberian Larch (*Larix Gmelinii*) on Permafrost” Biogeosciences, 2004. No1.

“High methane flux from an arctic floodplain” J. Geophys. Res., 2005, Vol.110

“Terrestrial Ecosystems in a Changing World” Cambridge University Press, 2007



Speaker

## Akihiko Ito

Research Associate

National Institute for Environmental Studies, Japan

> **【Issue 4】** Tuesday, June 24, 2008 / 14:40 - 15:30

### **ABSTRACT :**

Model analysis of plant and soil carbon response to elevated atmospheric CO<sub>2</sub> level and global warming

Carbon budget of terrestrial ecosystems would play a unique and important role in the regulation of atmospheric greenhouse gas concentration. Net ecosystem carbon dioxide (CO<sub>2</sub>) budget is determined by photosynthetic uptake and respiratory release, both of which are interactively affected by environmental conditions. During over the last 10 years, I have developed a terrestrial carbon cycle model called VISIT (formerly called Sim-CYCLE), which has been included in the integrated Earth-system model for long-term climatic change. Currently, I am analyzing the range of uncertainty in terrestrial carbon cycle feedback (i.e. net uptake and release) to global change on the basis of multiple climate scenarios from the IPCC AR4. There remain, however, large uncertainties in both empirical and model-based evaluation of regional carbon budget, leading to low reliability of global warming prediction. Through several projects, we have made efforts to integrate observations and modeling to reduce the uncertainty and improve our understanding.

### **RESEARCH INTERESTS :**

Terrestrial biosphere is expected to exert influences on atmospheric chemistry and physics through the exchange of various kinds of trace gases including greenhouse gases. Development of an integrated model for the atmosphere-ecosystem exchange is necessary to make prediction of global warming, and a remarkable challenge for ecologists and biogeochemists.

### **RESEARCH ACHIEVEMENTS :**

“The regional carbon budget of East Asia simulated with a terrestrial ecosystem model and validated using AsiaFlux data” *Agricultural and Forest Meteorology*, in press, (2008).

“Climate-related uncertainties in projections of the 21st century terrestrial carbon budget: off-line model experiments using IPCC greenhouse gas scenarios and AOGCM climate projections” *Climate Dynamics*, Vol 24, pp 435-448, (2005).



Moderator

## Yutaka Watanabe

Associate Professor

Faculty of Environmental Earth Science, Hokkaido University, Japan

> [Issue 5] Tuesday, June 24, 2008 / 16:10 - 17:10

### **RESEARCH INTERESTS :**

Geochemistry, Climate Change, Chemical Oceanography

### **RESEARCH ACHIEVEMENTS :**

Evidence of change in oceanic fixed nitrogen with decadal climate change in the North Pacific subpolar region. *Geophysical Research Letters*, 35, L01602, doi:10.1029/2007GL032188.

Spatiotemporal decreases of nutrients and chlorophyll-a in the western North Pacific surface mixed layer from 1971 to 2000. *Journal of Oceanography* 61, 1011-1016.

Synchronous bidecadal periodic changes of oxygen, phosphate and temperature between the Japan Sea deep water and the North Pacific intermediate water. *Geophysical Research Letters* 30(24), 2273, doi:10.1029/2003GL018338.

Probability of a reduction in the formation rate of the subsurface water in the North Pacific during the 1980s and 1990s. *Geophysical Research Letters* 28(17), 3289-3292, doi:10.1029/2001GL013212.



Speaker

## Michio Kawamiya

Group Leader

Japan Agency for Marine - Earth Science and Technology

> **【Issue 5】** Tuesday, June 24, 2008 / 16:10 – 16:40

### **ABSTRACT:**

#### Changes of the ocean carbon cycle and ecosystems

The ocean is, along with the dynamics of cloud etc., a key factor for global environmental changes, absorbing a half of the anthropogenic carbon emitted so far, and 80% of the heat consequently accumulated near the earth's surface. When it comes to projection of carbon and heat uptake, however, models do not agree each other; for instance, difference between the lowest and highest estimate of oceanic carbon uptake at 2100 is almost 100% when one sees results of the experiment under the S650 scenario (stabilization at 650ppm) coordinated under the Ocean Carbon Cycle Model Intercomparison Project. To narrow the range of uncertainty, or at least to identify the cause for the difference, it is important to estimate the present strength and future changes of vertical mixing and the biological pump operating in the ocean. Understanding on the ocean does affect the projection of future changes. On the other hand, the ocean is and will continue to be affected by global changes. The phenomenon called ocean acidification is an example. Also, a recent report revealed that the anoxic layers, existing in tropical subsurface of the Indian Ocean, Pacific and Atlantic, are expanding their thickness due to recent warming. These interactions between global climate and the oceanic system will be demonstrated in the presentation.

### **RESEARCH INTERESTS:**

Earth system modeling, Global carbon cycle, Ocean ecosystem.

### **RESEARCH ACHIEVEMENTS:**

Geographical distribution of the feedback between future climate change and the carbon cycle (2008) C. Yoshikawa, M. Kawamiya, T. Kato, Y. Yamanaka and T. Matsuno, J. Geophys. Res., in press.

# **Programs, Profiles and Abstracts**

**Hokkaido University Sustainability Weeks -G8 Summit Round**

## **International Symposium**

**How to make Sustainable Low Carbon Society**

**- Synergy of Social and Engineering System -**

**June 24 (Tue)**

**Venue** :Conference Hall, HU

**Main Organizer(s)** :Hokkaido University Initiative for Sustainable  
Development; Faculty of Engineering, HU; Faculty of Public  
Policy, HU



**International Symposium**  
**How to make Sustainable Low Carbon Society - Synergy of Social and Engineering System -**

Motive force is essential to make a transformation toward Sustainable Low Carbon Society. When Public Policy for creating new social system and innovative effort in engineering turn their faces to the same future perspective, spectacular synergy would come into the world. We believe the synergy would accelerate the motive force to change the conventional social system to the new one. Now, Hokkaido University Faculty of Public Policy and Engineering will jointly challenge to fulfill the expectation in order to make a Sustainable Low Carbon Society.

**June 24(Tue); Conference Room 1**

**Opening**

0900 – 0905	5	Opening Address
0905 – 0915	10	Presentation/The purpose of the meeting

**Session 1. “Social System Transformation towards a Low Carbon Society”**

**Chairperson : Fumikazu Yoshida, Professor, Faculty of Public Policy, HU**

\* Please refer to the page 22 for the profile of Fumikazu Yoshida.

0915 – 1000	45	“Development and Transfer of ESTs: A Pillor of the International Climate Regime post 2012” By Zou Ji, Vice Dean, School of Environment and Natural Resources, Renmin University, China
1000 – 1010	10	Question and Answers
1010 – 1055	45	“French Perspective in EU for Low Carbon Society” By Thierry Hommel, Professor, Sciences Po, France
1055 – 1105	10	Question and Answers
1105 – 1120	15	Break
1120 – 1205	45	“Environmental Governance and Economics for Sustainable Low Carbon Society” By Kazuhiro Ueta, Professor, Graduate School of Economics and Graduate School of Global Environmental Studies, Kyoto University
1205 – 1215	10	Question and Answers
1215 – 1230	15	Summary By Fumikazu Yoshida, Professor, Faculty of Public Policy, HU

**Lunch Break**

**1230 – 1400**

**Session 2. “Challenges in Water System as a Fundamental System of Sustainable Human Society”  
Chairperson : Naoyuki Funamizu, Professor, Faculty of Engineering, HU**

1400 – 1445	45	“Water, Sustainable Development, and Climate Change” By Taikan Oki, Professor, Institute of Industrial Science, the University of Tokyo
1445 – 1455	10	Question and Answers
1455 – 1540	45	“Wise Use of WATER” By Yasumoto Magara, Professor, Research Center for Environmental Nano and Bio Engineering, HU
1540 – 1550	10	Question and Answers
1550 – 1605	15	Summary by Naoyuki Funamizu, Professor, Faculty of Engineering, HU
1605 – 1620	15	Break

**Session 3. Panel Discussion “How to make synergy by Social System Reform and Technical Solution”  
Chairperson : Fumikazu Yosida, Professor, Faculty of Public Policy, HU  
Naoyuki Funamizu, Professor, Faculty of Engineering, HU**

1620 – 1730	70	Panel Discussion
1730		Closing Address



Speaker

**Zou Ji**

Vice Dean

School of Environment and Natural Resources, Renmin University,  
China

> **【Session 1】** Tuesday, June 24, 2008 / 9:15 – 10:00

**Speech Title:**

Development and Transfer of ESTs: A Pillor of the International Climate Regime post 2012

**RESEARCH INTERESTS :**

- (1) Environmental Economic Systems Analysis and Modeling
- (2) Economic Analysis on the Issues of Urban and Industrial Environment Protection
- (3) Economic Analysis on the Issues of Energy and Environment (including Climate Change)

**RESEARCH ACHIEVEMENTS :**

Professor Zou is leading a study on China's national strategy on energy and greenhouse gases control jointly sponsored by State Environmental Protection Administration (SEPA, now Ministry of Environment) and Chinese Academy of Engineering (CAE). He is also working on the design of China's proposal on technological cooperation in the context of international regime of climate beyond 2012.



Speaker and Panelist

## Thierry Hommel

Professor  
Sciences Po, France

- > [Session 1] Tuesday, June 24, 2008 / 10:10 - 10:55
- > [Session 3] Tuesday, June 24, 2008 / 16:20 - 17:30

### **ABSTRACT :**

#### French Perspective in EU for Low Carbon Society

Carbon free society is the ultimate goal beyond 2050. Key choices in the next 5 years will shape ability to meet 2050 goals. From this viewpoint, a sequential approach is needed: goals for 2020 are designed to “keep in play” the potential to achieve reasonably the 450 ppm goal by 2050. EU credibility is at stake, support is needed for technological innovation and for avoiding lock-in of current high carbon technologies. The EU commitment to transform Europe into a highly energy-efficient, low-carbon economy meet a context of high energy prices and increasing global competition for fossil-based energy resources. In this context, EU propose a package, which covers Energy Transformation Systems (ETS) and non ETS sectors while improving energy security. This politics provides predictability and visibility for investment decisions whether an international agreement is concluded or not. This creates incentives for other Parties to join in an international agreement on climate change. Nevertheless, the EU perspective cannot be efficient without the implication of member states and proactive support of the citizens: the EU has a legislative power, but states keep prerogatives and sovereignty. If objectives are settled at EU levels, some instruments will be EU wide, while compliance will also depend on national policies. According to national circumstances, French policies will develop specific instruments to ensure a coordination of innovations, the implication of all industrial sectors and the support of the civil society.

### **RESEARCH INTERESTS :**

Firms strategies on sustainable development, Corporate social responsibilities, Public policies.

### **RESEARCH ACHIEVEMENTS :**

Contestation sociale et organisation de l'expertise scientifique des risques environnementaux et sanitaires, Thierry Hommel, Olivier Godard. n°26, 2007

Expertise scientifique et gestion de la contestabilite sociale, Thierry Hommel, Olivier Godard, Ignace Adant. La lettre du management responsable, n°8, 2007

La construction incomplete du marche europeen des OGM, Thierry Hommel, EgizioValceschini.2007



Speaker and Panelist

## Kazuhiro Ueta

Professor

Graduate School of Economics and Graduate School of Global  
Environmental Studies, Kyoto University, Japan

> 【Session 1】 Tuesday, June 24, 2008 / 11:20 – 12:05

### **ABSTRACT :**

#### Environmental Governance and Economics for Low Carbon Society

It will not be possible to arrest climate change without qualitative change in economies.

We must tackle the prevention of climate change not as a defensive reaction but as a form of “environmental economic strategy.” When we frame the issue in this way, we should be able to see the way forward to the achievement of our goals. Among the environmental policy tools available are an emissions-trading system and a carbon tax (environment tax). Arranged in some suitable combination, such tools can serve usefully in tapping the creativity of businesses and communities and providing clear signals of the direction in which to proceed.

### **RESEARCH INTERESTS :**

Multi-level environmental governance for sustainable development. Public policy and ecological tax reform for sustainable development. Environmental economics and policy studies for low carbon materials cycles society.

### **RESEARCH ACHIEVEMENTS :**

Environmental Governance for Sustainable Development in East Asia, *Kyoto Economic Review*, Vol.76, No.2, pp.165-179

Site Location of Projects in China by Clean Development Mechanism: An Input Output Analysis, *Interdisciplinary Information Sciences*, Vol.14, No.1, pp.77-87

Sulphur Emission Control in China: Domestic Policy and Regional Cooperative Strategy, *Energy and Environment*, Vol.18, No.2, pp. 195-206



Chairperson

## Naoyuki Funamizu

Professor,

Faculty of Engineering, Hokkaido University, Japan

> 【Session 2】 Tuesday, June 24, 2008 / 14:00 – 16:05

> 【Session 3】 Tuesday, June 24, 2008 / 16:20 – 17:30

### RESEARCH INTERESTS :

His main research topics are wastewater reclamation and reuse, and sustainable sanitation system. His research work on human health risk analysis of wastewater reclamation reuse is cited in the textbook titled *Wastewater Reclamation and Reuse* edited by Professor Asano. Currently he is studying new sanitation system extensively and he is a leader of the big project on sustainable sanitation system based on the concept, “don’t mix” and “don’t collect” wastewater supported by Japan Science and Technology Agency, CREST.

He is also working on international collaboration program on sustainability education. He is a course leader of the JICA training course on urban water and wastewater management. He is working on education program on sustainability in Hokkaido University. He is a chair person of working group of Hokkaido University Inter-Department Graduate Program on Sustainability. In this program, approximately 50 master and Ph.D course students from several graduate schools in Hokkaido University are learning.

He also has an experience to work in the international water association (IWA). He was a secretary of the specialist group on wastewater reclamation and reuse of IWA from 2004 to 2005. He is a director of Japan Society on Water Environment and also a secretary general of the division Environmental Engineering, Japan Society of Civil Engineer.

### RESEARCH ACHIEVEMENTS :

He has published more than 100 papers in the international journals and book chapters. The book he contributed include *Encyclopedia of Life Support Systems* (EOLSS)(Developed under the Auspices of the UNESCO, Eolss Publishers); *Water Reuse: An International Survey Contrasts, issues and needs around the world* (IWA press, London); *Water resources and water supply in the 21<sup>st</sup> century* (Hokkaido University Press); *Biotechnological Applications of Cold Adapted Organisms*,(Verlag, Berlin); *Wastewater Reclamation and Reuse* (Technomic Publishing Company, Inc. Lancaster, PA, USA).

He was also invited more than 30 international conferences as a keynote speakers. The conferences include

- The 2<sup>nd</sup> International Forum of Water Environment Partnership in Asia, Beppu, Japan, 2007
- 2nd Inter. Cong. on Wastewater Treatment in small communities, SmallWat07, Seville, Spain, 2007
- 3rd South east Asian Water Forum (Kuala Lumpur, Malaysia, Oct. 22, 2007)
- 7<sup>th</sup> Conference of the Asian Council of Science (Japan, June 15, 2007) (招待)
- The 2<sup>nd</sup> international dry toilet conference, Tampere, Finland, Aug. 17, 2006 (基調)
- International East Asia Regional Workshop of International Academy Panel (IAP) on the water security to climate change and human activity, June, 12, 2006, Beijing, China (招待)



Speaker and Panelist

## Taikan Oki

Professor

Institute of Industrial Science, the University of Tokyo, Japan

> 【Session 2】 Tuesday, June 24, 2008 / 14:00 – 14:45

### **ABSTRACT :**

#### Water, Sustainable Development, and Climate Change

Water is a naturally circulating resource that is constantly recharged. Therefore, even though the stocks of water in natural and artificial reservoirs are helpful to increase the available water resources for human society, the flow of water should be the main focus in water resources assessments. The climate system puts an upper limit on the circulation rate of available renewable freshwater resources (RFWR). Although current global withdrawals are well below the upper limit, more than two billion people live in highly water-stressed areas because of the uneven distribution of RFWR in time and space. Climate change is expected to accelerate water cycles and thereby increase the available RFWR globally. This would slow down the increase of people living under water stress; however, changes in seasonal patterns, enhancement of uneven distribution of regional RFWR, and increasing probability of extreme events may offset this effect. Implementing adaptation measures and reducing current vulnerability will be the first step to prepare for such anticipated changes.

### **RESEARCH INTERESTS :**

Global water balance and world water resources, Climatic Variation and the Asian Monsoon, Land-atmosphere interaction and its modelling, Remote sensing in hydrology, Temporal and spatial distribution of rainfall

### **RESEARCH ACHIEVEMENTS :**

Solicited review article “Global Hydrological Cycles and World Water Resources” published on *Science* in 2006. Lead author for the WGII/Chapter 3 “Freshwater resources and their management” of the IPCC AR4. JSPS (Japan Society for the Promotion of Science) Prize, the Japan Academy Medal, and Science and Technology Prize, Ministry of Education, Culture, Sports, Science & Technology in 2008.





Speaker and Panelist

## Yasumoto Magara

Professor

Research Center for Environmental Nano and Bio Engineering,  
Hokkaido University, Japan

> [Session 2] Tuesday, June 24, 2008 / 14:55 - 15:40

> [Session 3] Tuesday, June 24, 2008 / 16:20 - 17:30

### **ABSTRACT :**

#### Wise Use of WATER

Water is used for various kinds of purposes: in daily life, agriculture, industry, and fishery. Water is supplied from the ocean to the atmosphere through evaporation and comes back to the ground surface as rainfall. It supports various kinds of human activities and nature and the global ecosystem as well. While water flows over the ground surface and becomes available as a resource in rivers, lakes/marshes, underground water, and coastal water, it contains inorganic substances from the soil, and organic substances and microorganisms generated by living organisms and human activities.

Impurities which exist in water include not only essential substances necessary for supporting the life of living creatures, such as nitrogen, phosphorus and iron, but also hazardous substances, such as arsenic and mercury, which are not just unnecessary for living creatures, but cause health problems. Water also contains parasites, infectious microorganisms, and chemical substances such as agricultural chemicals, which may cause health problems to humans or other living creatures. It can also contain other substances which do not cause any hazard to humans or living creatures, but disturbs proper use of water, such as silt and sand which make water turbid. It is therefore necessary to consider the wise use of water according to the purpose of consumption.

### **RESEARCH INTERESTS :**

Environmental engineering and have included advanced water purification for drinking water, control of hazardous chemicals in drinking water, planning and treatment of domestic waste including human excreta, management of ambient water quality, and mechanisms of biological wastewater treatment system performance.

### **RESEARCH ACHIEVEMENTS :**

The member of task force group of WHO drinking water quality guidelines since 1984 (the first edition). The author or co-author of 33 papers of Encyclopedia of Life Sciences (EOLSS) published by UNESCO. The author or co-author of more than 100 research articles.

# **Poster Abstracts**

**Hokkaido University Sustainability Weeks -G8 Summit Round**

**Researches for Sustainable Society**

**June 23 (Mon) - June 25 (Wed)**

**Venue :Conference Hall, HU**

**Main Organizer :Committee for Sustainability Weeks 2008**

### Assessment of Mass Transfer Coefficient for Volume Reduction of Urine

Pahore Muhammad Masoom

*Laboratory of Engineering for Sustainable Sanitation, Built Environment Div. Hokkaido University, Japan*

In the Onsite Differentiable Wastewater Treatment System (ODWTS) wastewater streams are collected separately and each stream is treated properly at household level. Urine Diverting Toilet is used for separate urine collection and subsequent treatment. One of the advantages of urine separation would be saving energy cost in composting of feces. As urine contains high concentration of nutrients (N, P, K) but is in small quantity (1% of wastewater flow), therefore, low cost but sustainable onsite System for volume reduction may be needed for pollution control. This research work is based on following 2 Questions whose replies are discussed subsequently: i): How much volume of urine should be reduced? ii): How to reduce volume of urine? i) HOW MUCH VOLUME OF URINE SHOULD BE REDUCED? To find out answer to this question, we carried out a Case Study of Southern Pakistan, where cotton is one of major crops requiring 90 kg of N Fertilizer /ha, while its cost is 16 US \$. Farmland is located 60 kms away from urban area. Transportation cost of 24,000 L is 1.60 US \$ /km. (as per market rates). Smaller trucks with capacity of 2600 L charge 0.16 US\$/km. Although urine contains high concentration of nutrients as compared to feces, however, large amount of urine is required to meet crop requirement, for example, for cotton 10,000 L/ha of (=90 kg of N) is required. According to estimates transportation cost of raw urine proportionate to transportation distance, while it is equal to the cost of commercial fertilizer at 20 km distance. When the volume of urine is reduced to 50% then required volume to transport gets 5000 L /ha, which is equal to the cost of commercial fertilizer at 40 km. Therefore, higher volume reduction of 80% would be desired for offering incentives to farmers. With 80% volume reduction, we can obtain densified 2000 L out of 10,000 L of urine. Thus we can recover N (100% = 90 kg), P (3%= 2 kg/ha) and K (20%=10 kg/ha), thereby saving 20% cost/ha, if farmers apply urine based fertilizer (plus commercial. fertilizer = 58 kg P + 40 kg K) instead of total commercial fertilizer alone. ii) HOW TO REDUCE VOLUME OF URINE? There are various methods to reduce urine volume such as reverse osmosis, freezing and thawing and conventional evaporation with heating, but they require high operation cost and energy supply. Here, Southern Pakistan has a hot and dry climate and poor piping system, so urine drying with natural energy like sun drying of laundry is expected in that area. Therefore, we proposed the onsite urine volume reduction system with wind energy. We designed a closed wind tunnel having a long shallow tank (made of PAC), vertical cloth sheet and a fan (capacity of 30 m<sup>3</sup> /min), as shown in Figure-3. Constant Temperature Humidity Chamber is connected to wind tunnel to maintain constant boundary conditions. The humidity and temperature sensor is placed on the wall to check the air condition. The tank weight is automatically measured every 10 minutes to evaluate Evaporation Rate (ER) of sample in the tank through the Sheet. From drying theory the Drying Rate (DR) of sample is calculated by the following equation using mass transfer coefficient (K<sub>y</sub>):  $DR = \frac{M(Air) K_y (H_i - H)}{A}$  Eqn (1) Where M(Air) is Molecular Weight of dry air, (H<sub>i</sub>-H) is difference of dry humidity and saturated humidity and A is effective drying area. The effective drying area is estimated from the sheet width and water height to the sheet with 3 hours intervals. Gauze was preferred over towel and paper sheets as rate of water rising (cm / 30 min) to gauze was found higher than other sheets by an experiment. The boundary conditions for our proposed experiments are : Wind Velocity: 1~6 m/s, Air Temperature: 20~4°C and Relative Air Humidity: 40~70%. Evaporation Rate of de-ionized water was around 36 g/hr while one of synthetic urine was 25 g/hr but slightly decreased with time. ER of tap water showed similar behavior until 7 hours then slowly decreased to same level of synthetic urine. From equation 1, effective evaporation area is one of the most important factors for Evaporation Rate. Then the effective evaporation area was estimated every 3 hr. The area quickly increased to 90 cm<sup>2</sup> in 10~20 minutes owing to quite new cloth sheet. Then the area for de-ionized water becomes constant value of 75 cm<sup>2</sup> because of the balance between water rising by capillarity and evaporation. The area for synthetic urine was lower than de-ionized one, while one for tap water changed from level of de-ionized to one of synthetic urine. This indicates that salts dissolved in sample accumulate into the sheet resulting in retarding water rising. Salt accumulated to sheet was measured by washing used sheet in de-ionized water and measuring its TDS. Figures 6 show relationship between amount of water evaporated on y-axis and residue / salt accumulation on x-axis. The rate of salt rising is 0.10~0.12 g/hr against supply of 16 g/hr water. However, during initial 10~20 minutes, water carries salt to 3.0 cm in sheet with salt rising 0.45 cms in first hr., owing to new cloth sheet. Salt rising decreased water rising to sheet in synthetic urine, whereas in case of de-ionized water sample, constant supply of water to sheet was maintained. Used Sheet was cut into 5 pieces of 3 cm each and TDS of each portion was measured to know in which area does salt accumulate. The first portion of the sheet (0-3 cm) inside tank contained low salt. Maximum salt was found in second portion (3~6 cms). During first 10~20 min, salt reached to 6 cms, later on salt remained in 3~5 cms. After 24 hrs, salt fell back to tank as some salt was found on cover during 48 hr experiment. Some salt also settled to bottom of the tank. Time course of MTC was found 1.9 g mole/(cm<sup>2</sup>.hr) in all three cases under 5 m/s wind velocity with constant temperature and humidity. This is because of different drying area and ER in each case. On basis of MTC 1.9 g. mol/(cm<sup>2</sup>hr), under 5 m/s wind velocity, 40°C temperature and 40% humidity, we require drying area of 120 cm<sup>2</sup>. We propose to use 6 sheets each having 20 cm length and 1 cm. height. For a unit of about 10 persons can generate 7.2 liters of urine /day if each person stays 70% of time at residence (keeping in view that each person generates 1.2 liters /day). We

need to evaporate 5.8 Liters in 24 hrs (80% volume reduction) out of 7.2 L/day. However, since we propose to keep 4-5 cms of sheet inside the tank, so we need total sheet area of 720 cm<sup>2</sup>. A long shallow evaporation tank with capacity of 80 L and dimensions 200 cms x 80 cms x 5 cms may be needed for above conditions. Concentrated urine be decanted from tank to Cans/Drums (60 L) and further stored for 3 months, since farmers transport urine twice a year due to two crop seasons. Storage may also be needed from hygiene point of view to ensure that microorganisms are inactivated during 4-5 months storage period. Mass Transfer Coefficient is sufficient to obtain 80% volume reduction of urine / day. Salt accumulation decreased Effective Drying Area (decreasing water height), therefore, smaller heights (1~2 cms) may be proposed. Salts eventually fallen back to tank after some time thus evaporation continues.

P-2

### **Toxicity assessment of reclaimed wastewater**

Mokhtar Guizani , Naoyuki Funamizu

*Built Environment Dept., Faculty of Engineering, Hokkaido University*

In order to reduce water scarcity all over the world, a big shifting in nowadays water management plans is taking place. It consists on the reuse of reclaimed wastewater. Continuous pressure on water resources, indicates that planned direct or indirect reuse of reclaimed water is a common trend. However, previous studies indicate that toxicity was already detected in reclaimed water, which will constitute a risk for human health. toxicants in reclaimed water are of 3 types. Pollutants coming with the influent and chemicals used for treatment and their by-products constitute the first and second types and they could be reduced by their control at the source. However, the third type constituted by the byproducts of dead bacteria and known as endotoxins is not controllable at the source and it is probably one of the toxic substances and whose toxicity is not confirmed. The bacteria ensuring the biodegradation of organic matter and converting it to acceptable end products are themselves producing the LPS endotoxins during their decay process. In this research, a study of the effectiveness of treatment processes for endotoxin control and removal will be investigated. The objective is to evaluate the LPS contribution to the toxicity of reclaimed water, and then set the optimum control conditions within the appropriate treatments, in order to improve the reuse of treated water for planned direct or indirect potable issues.

P-3

### **Descending water at the Antarctic marginal ice zone and its contribution to the Intermediate Water using an ice-ocean model**

Yuri Hiraike

*Graduate School of Environmental Science*

The descending water at the marginal ice zone (MIZ) and its contribution to the Antarctic Intermediate Water (AAIW) are examined. The AAIW plays an important role in global climate by transporting heat and salt all over the Southern Ocean from high latitude. Understanding its formation process is crucial for prediction of future climate change under global warming. The main concern in this study is given to the surface water at the MIZ. A potential importance of the surface water input at the MIZ is suggested for formation and property of the denser AAIW, especially in the Atlantic Ocean.

P-4

### **Modeling of methane bubbles released from seafloor gas hydrate : Condition required for methane emission to the atmosphere**

Yamamoto. A<sup>1</sup>, Yamanaka. Y<sup>1</sup>, Tajika. E<sup>2</sup>

*1/Graduate School of Environmental Science, Hokkaido University,*

*2/Department of Earth and Planetary Science Graduate School of Science The University of Tokyo*

The massive methane release due to decomposition of methane hydrate in seafloor potentially causes global warming (such as Paleocene/Eocene thermal maximum). However, the degree of caused global warming is not estimated due to uncertainty of methane flux from seafloor to reach the atmosphere. We estimated a ratio of methane released into the atmosphere to that inputted from the seafloor using numerical model for predicting evolutions of methane bubble and concentration of methane in seawater. Our results suggest that the massive methane bubble released from the seafloor does not reach the atmosphere directly but dissolved into the seawater in most cases.

P-5

**Oceanic mechanisms that nourishes Indian Coastal fisheries**

Prescilla Kurien

*Graduate School of Environmental Science*

As India is going to be the world-most populated country, we should be aware of fisheries resource. Remote-sensing data exhibited mesoscale features along Indian coast matching with the productive areas. We have set up a higher resolution OGCM to study the generation mechanism of mesoscale features associated with the coastal currents. The mechanisms will be explained on the basis of linear theory. This study will reveal the role of seasonally generating mesoscale eddies associated with the coastal currents along Indian coast on supporting the country's marine resource. The effect of interannual variability like Elnino will be analyzed.

P-6

**Reconstruction of Past Environment for the Prediction of Future's Climate**

Ho Sze-ling

*Graduate School of Environmental Science*

In order to build a sustainable world, a reliable model-based prediction of future's environment is indispensable. However, due to the complexity and chaotic nature of the climate, model needs climatic data over a very long term to attain the required robustness. Hence, reliable reconstruction of past climate is of paramount importance for model validation. In this research, the oceanic environment in the mid-latitude of southwest Pacific is reconstructed based on a multi-proxy approach, which compensates for the inherent limitations of each proxies. Our findings show that Subtropical Front could migrate southward in warm intervals, in contrary with previous works that suggested northward migration in cold intervals and no migration in warm intervals. This result indicates the possibility of a change in meridional heat transport in warm intervals that might have global significance.

P-7

**Kuroshio Extension low-frequency variability**

Yousuke Nishihama

*Faculty of Environmental Earth Science*

Since the mesoscale variability (such as eddy formation and latitudinal movement) in the KE region is most vigorous, it affected to the heat transport between atmosphere and ocean. Thus, we reconstructed the mesoscale variability using assimilation of altimeter data which exhibited an elongated (ES) and a contracted (CS) state of the KE region into a three-layer quasi-geostrophic model. The baroclinic instability occurred only in the midstream KE and strongly (weakly) in ES (CS) and the shiftsynchronized with the transition between them. The Shatsky Rise played an important role of necessary condition for the instability as a topographic barrier. This result iscompared with the other model simulation (OFES) and the assimilation solution (JCOPE2).

P-8

**Land Use and Land Cover Change in the Nepal Siwaliks: It's**

Motilal Ghimire

*Graduate School of Environmental Science*

Analyzing time series satellite (Landsat Multi-spectral Scanner: MSS, and Thematic Mapper: TM) data using Geographical Information System, the paper revealed that the Siwaliks Hills, which is characterized by a very fragile ecosystem, has experienced tremendous change in land use and land cover during the 1970s and 2001. This change, however, was in lesser scale during 1991 and 2001. Conversion of forest to cultivated land has been the main pathway of land use and land cover change. The conversion was more pronounced in the hill slopes and flood-prone river valleys. Seemingly, significant expansion of cultivated land in steep slopes and marginal areas is an indicative to an environmental and livelihood risk.

P-9

**Shifts in Interannual Sea-Ice Patterns in the Southern Ocean in Association with Large-Scale Atmospheric Modulation**

Yusuke Udagawa<sup>1</sup>, Yoshihiro Tachibana<sup>2</sup>, Koji Yamazaki<sup>3</sup>  
1/ Graduate School of Environmental Science,  
2/ Liberal Arts Education Center, Tokai University,  
3/ Faculty of Environmental Earth Science, Hokkaido University

We verified the persistence of the Antarctic circumpolar wave with 4-year cycles of eastward synchronous propagations of the spatial patterns of sea-ice concentration (SIC), sea surface temperature, sea level pressure, and meridional wind stress of wavenumber 2 around the Antarctic. Empirical orthogonal function (EOF) analysis of satellite data for 1979-2003 objectively demonstrates that the spatial pattern of SIC with wavenumber 2 propagated eastward only in 1984-1994. In other years, no significant eastward propagating features were identified. The results show differences in the dominant large-scale atmospheric patterns in association with variations in sea-ice patterns.

P-10

**Drought risk over Nepal; An environmental perspective**

Madan Sigdel  
Graduate School of Environmental Science

Drought is the most complex and least understood of all natural hazards, affecting more people than other hazard (Whilite, 2000). Climatological drought is defined as in terms of magnitude and duration of precipitation. McKee et al (1993) developed the standardized precipitation index (SPI) for the purpose of defining and monitoring drought. The present study is based on SPI for drought monitoring around Nepal. The SPI series computed from major climate stations in Nepal from January 1971 to December 2003 at a temporal scale of 3, 6 and 12 months. And Temporal drought patterns is analyzed using Principal component analysis (EOF). The preliminary results shows that drought are more frequent for 3 months time scale and longer duration for 12 months time scale and Both pattern shows the drought evolution strong for south-central Nepal.

P-11

**Mapping of soil moisture distribution for the atoca - sphagnum cover class in Sarobetsu mire using ALOS/PALSAR and AVNIR-2 data**

Rei Sonobe<sup>1</sup>, Masayuki Takada<sup>2</sup>, Hiroshi Tani<sup>3</sup>, Xiufeng Wang<sup>3</sup>, Kazufumi Kobayashi<sup>2</sup>  
1/ Graduate school of Agriculture,  
2/ Hokkaido Institute of Environmental Sciences,  
3/ Research Faculty of Agriculture

In this study, a soil moisture estimation model was developed for the atoca - sphagnum cover class in Sarobetsu mire, using ALOS/PALSAR and AVNIR-2 imagery. PALSAR data is affected by the vegetation besides soil moisture, and the magnitude of the effect is different among vegetation cover classes. Therefore firstly we classified the vegetation in the mire using PALSAR polarimetric mode data. Next, NDVI was calculated from AVNIR-2 data as a vegetation indicator. Then we obtained a soil moisture estimation model by multiple linear regression analysis among PALSAR data, NDVI and measured volumetric soil moisture. The model estimated the soil moisture in the mire with RMSE of 8.2%.

P-12

**Removal of hexavalent chromium and phosphate by alginate gel beads prepared with ferric ion.**

Yoshihiro Mihara  
Graduate School of Environmental Science

Alginate gel beads containing Fe(III) were prepared by two different process. One is a direct method; alginate solution was introduced directly into the solution of ferric ions. Another is the ion-exchange method; Ca(II) ions in Ca-AG gel beads were exchanged with ferric ion to form Fe(III)-AG gel beads. Hexavalent chromium and phosphate ion adsorbed well on Fe(III)-AG gel beads and the accumulation of Cr and P on Fe(III)-AG gel beads was confirmed by EDX-ray Spectroscopy. Therefore, Fe(III)-AG gel beads showed the possibility of the removal of anionic species from aquatic environment. The adsorption mechanism of anion was discussed from the point of view electrostatic interaction between anion and Fe(III)-AG.



P-13

**Recruitment pattern of the short neck clam, *Ruditapes philippinarum*, in Hichirippu lagoon, Hokkaido, Japan**

Tomohiro Komorita <sup>1</sup>, Hiroaki Tsutsumi <sup>2</sup>, Seiichiro Shibamura <sup>1</sup>, Toshiro Yamada <sup>3</sup>, Rumiko Kajihara <sup>1</sup>,  
Natsumi Ishimaru <sup>1</sup>, Shiomi Hatanaka <sup>1</sup>, Shigeru Montani <sup>1</sup>

*1/ Graduate School of Environmental Science, Hokkaido University,*

*2/ Faculty of Environmental and Symbiotic Science, Prefectural University of Kumamoto,*

*3/ Nishimuragumi Co Ltd, 133 Sakaemachi, Yubetsu, Monbetsu, Hokkaido 099-6404*

Recruitment processes of clam (*Ruditapes philippinarum*) were studied in Hichirippu lagoon, Hokkaido, Japan. The larval density showed condensed distribution on the lagoon entrance (Maximum: ca. 14,000 inds. m<sup>-3</sup>). The most parts of settled population were determined by the larval supply. The abundances of the initial settlers ranged 0 to 301,000 inds. m<sup>-2</sup> and the linear regression mortality rates (first 6 months October 2006 to April 2007) ranged 0 to 1,619 inds m<sup>-2</sup> d<sup>-1</sup>. The mortality rates of the population were density-dependent (n = 15, r<sup>2</sup> = 0.948). It is certain that the abundant survivors converged by the definite density.

P-14

**Nitrogen dynamics of the water column in a subarctic brackish lagoon, Hichirippu-Numa, compared to eutrophic estuarine ecosystems**

Natsumi Ishimaru, Seiichiro Shibamura, Shigeru Montani

*Graduate School of Environmental Science, Univ.Hokkaido, N10W5, Sapporo, Hokkaido 060-0810, Japan*

Spatial and temporal distribution of particulate organic nitrogen (PON), dissolved organic nitrogen (DON), and dissolved inorganic nitrogen (DIN) were investigated in Hichirippu-numa, Hokkaido, Japan. Mean relative abundances of individual nitrogen forms (PON, DON, DIN) were 43%, 48%, 21%, respectively. Relative abundance of PON was 2 times higher than in eutrophic enclosed bay (e.g. Osaka Bay). The standing stock of DIN, estimated at 1.3-100 mg N/m<sup>3</sup>, was lower than that of eutrophic coastal area such as the Seto Inland Sea. However, the yield of catch of fish, shellfish, and seaweeds in Hichirippu at 35 ton/km<sup>2</sup>/yr was 1.5 times higher than that of Seto Inland Sea. This study suggests that we might be able to preserve their value as food source as well as their rich natural environment in Hichirippu.

P-15

**Characteristics of phytoplankton taxonomic composition in the northwest subtropical Pacific**

Young-joon Eum, Takafumi Kataoka, Koji Suzuki

*Graduate School of Environmental Science, Hokkaido University*

Photosynthetic picoplankton, whose cell size is smaller than 3 μm, numerically dominates the phytoplankton community and contributes significantly to primary production in most subtropical open oceans. Although recent molecular fingerprint techniques such as PCR-DGGE (denaturing gradient gel electrophoresis) enable us to identify even such tiny microbial organisms to some extent, information on phytoplankton taxonomic composition in the northwest subtropical Pacific is still very limited at present. Here we show characteristics of phytoplankton community composition in the area during early summer of 2006 as estimated by size-fractionated chlorophyll a (Chl a) measurement, HPLC pigment analysis, flow cytometry (FCM), and PCR-DGGE.

P-16

**Surface enhanced infrared absorption spectroscopic studies of adsorption and reduction of nitrite on a Pt electrode**

Farhana Rahman Rima <sup>1</sup>, Kou Nakata <sup>2</sup>, Katsuaki Shimazu <sup>2</sup>

*1/ Division of Materials Science, Graduate School of Environmental Science, Hokkaido University, Sapporo 060-0810, Japan,*

*2/ Graduate School of Environmental Science, Hokkaido University, Sapporo 060-0810, Japan*

Water contamination by nitrate is a worldwide problem because nitrate is reduced to toxic nitrite. In order to develop a new electrode for electrochemical denitrification it is necessary to know the adsorption state of nitrate and nitrite and the reduction of adsorbed species. In this study, the adsorption state of NO<sub>2</sub><sup>-</sup> and its reduction processes on a polycrystalline Pt electrode were examined by surface enhanced infrared absorption spectroscopy (SEIRAS) in neutral and acidic solutions. The band was found at 1310 cm<sup>-1</sup> in both solutions and assigned to a symmetric stretching mode of NO<sub>2</sub><sup>-</sup> attached to Pt



through a N-atom. This adsorbed species was reduced at < 200 mV and 400 mV vs Ag/AgCl in neutral and acidic solutions to form adsorbed NO.

P-17

**The possibility of sustainable pest management by re-introducing bio-diversity - Simulating pest mite outbreaks & regulation in Chinese Moso bamboo plantations -**

A. R Chittenden<sup>1</sup>, N Tsuji<sup>1</sup>, T Ogawa<sup>2</sup>, Y- X Zhang<sup>3</sup>, Y Saito<sup>1</sup>

*1/ Sustainability Governance Project (SGP) in the Center for Sustainability Science and Education, Hokkaido University, 060-0809, Sapporo, Japan,*

*2/ Laboratory of Animal Ecology, Research Faculty of Agriculture, Hokkaido University, 060-8589, Sapporo, Japan.,*

*3/ Institute of Plant Protection, Fujian Academy of Agriculture, Fuzhou, China.*

*Phyllostachys pubescens* (or moso bamboo) was introduced into Japan in 1736 from the Ryukyu Islands, and today more than 50,000 ha can be found growing in Southern Japan. The advent of cheap imported bamboo shoots from China have discouraged many Japanese moso farmers from maintaining their plantations, imperiling many traditional Japanese forests, or Sato-yama, as unattended moso plantations will eventually cover and eliminate other native plant species.

As part of a joint Japan-China project, we adopted a systems simulation approach to examine how pest mite population dynamics change when bamboo cultivation practices switch from polyculture to monoculture. In this study we identify the causal factors of pest out-breaks from the perspective of sustainable pest management using bio-diversity, and evaluate the effect of nursery plants on the predator-prey systems of *Moso* plantations to show how a “two-plant / two host specific pest species / single natural enemy” system can attain stability. We also address a biotic factor that may play a pivotal role in fostering sustainability of Chinese moso bamboo forests.

Ironically, even though we could provide a possible way to regulate pest mite outbreaks in Chinese moso plantations by introducing bio-diversity conservation, an underlying conflict between Chinese and Japanese bamboo plantations has become apparent. If Chinese plantations are rendered sustainable by the pest management system proposed in this study, it may well exacerbate the already adverse effects on the sustainability of Japanese Sato-yama.

P-18

**Selective elimination of lead (II) ions by polyurethane-alginate composite foams**

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A new type of adsorbent which is capable of selectively absorbing lead (II) ions ( $Pb^{2+}$ ) was developed. The adsorbent was generated by reaction of sodium alginate with NB-9000B, a polyisocyanate type of prepolymer of polyurethane. The adsorbent was a hydrophilic and flexible polyurethane/alginate foam (PUF/ALG) with the alginate chemically immobilized in the cell walls of the foam. Carboxyl groups on alginate are the functioning sites and the binding of  $Pb^{2+}$  ions was achieved based on the ion-exchange mechanism. The adsorption capacity was found to be highly sensitive to the pH of the sample solution. Competing ions such as  $Mg^{2+}$ ,  $Ca^{2+}$ , and  $Cd^{2+}$  have shown also some detrimental effects on selectivity and capacity for  $Pb^{2+}$  adsorption. Nevertheless, The PUF/ALG is highly stable, flexible and easy to use. The PUF/ALG is also reusable after regeneration with  $Na_2$ -EDTA. Due to these features, this adsorbent may be highly useful for elimination of  $Pb^{2+}$  ions from contaminated water.

P-19

**Effects of agricultural land use on water chemistry of mire pools in the Ishikari Peatland, northern Japan**

Toshikazu Kizuka, Hiroyuki Yamada, Masao Yazawa, Hoi-hoon Chung

*Graduate school of Agriculture*

Using spatial analysis methods with a geographic information system (GIS) and a statistical methodology, this study examined the effects of agricultural land use on the pool water chemistry in the Ishikari Peatland. The water chemistry variances were accounted for by the first two principal components: PC1 included farmland subsurface drainage containing nitrate nitrogen and mineral ions; PC2 included farmland surface drainage containing soil particles and ammonium nitrogen. These PC scores were also affected by the number of inflow ditches and the total area of farmland located within the drainage catchment of inflow ditches. Results suggest that farmland subsurface and surface drainage water flowing into the pools degraded the water chemistry.

P-20

**A study on the Land-use change and soil moisture in Sanjiang Plain, China using satellite data**

Tomoya Fukugawa<sup>1</sup>, Yang Liu<sup>1</sup>, Zhongxue Zhang<sup>2</sup>, Xiufeng Wang<sup>1</sup>, Hiroshi Tani<sup>1</sup>

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The Sanjiang Plain in northeastern China was once a famous wetland area. However, it has been remarkably decreased by development of farmland and rapid urbanization in recent years. The study using Landsat TM data and ALOS AVNIR-2 data revealed a relationship of land-use change and wetland area decreased over 20 years. Furthermore, it is important to investigate the adaptability of TVDI model resulting from the analysis of NDVI and surface temperature. With this model, the study comprehensively clarifies the effects of soil moisture reduction and aridification in Sanjiang Plain.

P-21

**The responses of alpine plants to the variations in snowmelt conditions**

Yuka Kawai

*Graduate School of Environmental Science*

In alpine environments, the time of snowmelt is the most important factor determining the flowering time and the available season length of plants. On going global warming is affecting snowmelt timing and, it should change the phenological schedules and reproductive success of alpine plants. To clarify the responses of alpine plants to the changes in snowmelt conditions, we examined the life-history traits of an alpine perennial herb, *Gentiana nipponica*, along the snowmelt gradients in the central part of the Taisetsu Mountains, Hokkaido. The results indicate that the reproductive size, growth, survival rate, and the thermal requirement for flowering are significantly different between the early and late snowmelt populations. It is suggested that genetic variations in the life-history traits exist among populations of different snowmelt conditions.

P-22

**Development of novel hormone-detecting system using transgenic plants expressing human hormone receptors.**

Takuto Tojo

*Graduate School of Environmental Science*

Hormones affect endocrine systems in animal, and regulate various physiological phenomena. Environmental pollution by hormone-like substances derived from industrial or domestic wastewater is serious problems, since a tiny amount of such chemicals can affect regulation systems of physiological phenomena in various organisms. On the other hand, many hormone-like substances are also used as drugs, and recently, hormone-like substances in food, such as isoflavone, have also attracted attention for our health and beauty. For these reasons, searching hormone-like substances in environment and natural compounds is very important. In this study, we have developed a novel detecting system of hormone-like substances using transgenic plants which express human hormone receptors. Our system is very easy to use and can detect a tiny amount of hormonal activities in environmental samples.

P-23

**Spatio-temporal changes of fish assemblage and their habitat with reference to river modification**

Shigeya Nagayama

*Faculty of Agriculture*

We examined spatio-temporal changes of fish community and their habitats with river channelization over the past 50 years in the Shibetsu River. Riverine landscape, consisting of a main stream and water bodies within floodplains, was classified into units representing various fish habitats. The river has been channelized with urban development and bridge was constructed across the river from 1947 to 1978. Some of the landscape units fostering fish communities were disappeared and fish groups were reduced more than by half. It is of great importance to understand structural and functional changes of river landscape with river modification, which provides beneficial information to devise a restoration strategy.

P-24

**Nitrogen dynamics of benthic ecosystem in subarctic brackish lagoon, Hichirippu-Numa, Hokkaido, Japan**

Rumiko Kajiwara

*Graduate School of Environmental Science*

Recently, most of the lagoon areas in the world have expanded its role as site for fish farming and human activities as well contributed in the deterioration of the environment. To address the restoration of the environment, natural processes in the ecosystem, particularly the behavior of nitrogen should be elucidated. This study examined the dynamics of nitrogen in a naturally productive brackish water lagoon, Hichirippu-Numa. Samples of suspended particulate organic matter, surface sediment, terrestrial soils, seagrass and macrobenthic animals were collected and analyzed for stable isotope ratios of carbon and nitrogen. Results showed that nitrogen was transported from sediments through advection from the sea and land, to macrobenthic animals via local primary producers.

P-25

**Vegetation change detection using thermal band emissivities over**

Kenta Ogawa

*Support Office for Femal researchers*

Multispectral thermal infrared remote sensing of surface emissivities can detect and monitor long-term land vegetation cover changes over arid regions. The technique is based on the link between emissivities within the 8.5-9.5  $\mu\text{m}$  and density of sparsely covered terrains. The link exists regardless of plant color, which means that it is often possible to distinguish bare soils from senescent and non-green vegetation. This capability is typically not feasible with vegetation indices. The method is demonstrated using ASTER remote sensing observations between 2001 and 2003 in a semi-arid site in southern New Mexico, USA. A compilation of 27 scenes revealed spatially coherent patterns of spectral emissivities decreasing at rates of 3% per year. These patterns are interpreted as regions of decreased vegetation densities, a view supported by ground-based data. Comparable NDVI images do not detect the long-term spatially coherent changes in vegetation. These results show

P-26

**Detail information of past atmospheric aerosols composition from bipolar ice sheets**

Toshimitsu Sakurai <sup>1</sup>, Yoshinori Iizuka <sup>2</sup>, Shinichiro Horikawa <sup>2</sup>, Sigfus Johnsen <sup>3</sup>, Dorthe Dahl-jensen <sup>3</sup>,  
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Detailed information of environment change for glacial interglacial cycle is obtained from the ice core in the top of the bipolar ice sheets. Especially, clarifying the change of the transition period that the climate changes rapidly from the glacial maximum to interglacial period and gradually from interglacial to glacial period will lead to the forecast in the future of today's rapid global warming. However, there are difficulties in clarifying the change of the transition period, because of the racked information of radiative forcing of water soluble aerosols which has a negative and positive radiative forcing. We show details of past atmospheric water soluble aerosols information from bipolar ice cores, Dome Fuji ice core, Antarctica and GRIP ice core, Greenland.

P-27

**Membrane bioreactor as treatment facility for graywater discharges**

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Water resources had decreased their qualities through the years and clean water is expected to be a scarce resource in the near future. So recently, decentralized treatment is widely investigated as new trend to solve the arising water issues. Graywater treatment has been a focus when topics on decentralized wastewater treatment are discussed. In this paper the higher-load graywater, a mixture of washing machine and kitchen sink wastewater, was treated using submerged membrane bioreactor (subMBR). Ultrafilter-hollow fiber membrane and microfilter-flat plate membrane configurations were investigated. The result of the later configuration, which is presented here, was more promising than the other type

in terms of operation and maintenance without compromising the effluent quality. A 10L-lab scale subMBR was operated with a microfilter-flat plate membrane for 87 days. Permeate was intermittently withdrawn at constant TMP induced by water level difference and without pump requirement. Effluent quality and membrane performance were monitored. The COD removal and total LAS removal was around 96% and 99%, respectively. The subMBR was operated at almost stable and constant flux of 0.22 m<sup>3</sup>m<sup>-2</sup>d<sup>-1</sup> giving a mean HRT of 13.6 hours. Therefore, subMBR could be a promising technology for graywater treatment.

P-28

**A signal of climate change in the Arctic Ocean shown in geochemical, physical, and model data**

Hiroyasu Yamaguchi

*Graduate School of Environmental Science*

When we think about a global change, the Arctic Ocean reflects sensitively an influence of climate change such as global warming shown in ocean variability (e.g. the sudden increase and decrease of sea ice); therefore, the Arctic Ocean is an important climatic component that conveys an effect of the variability to the whole earth. It is important to estimate quantitatively the variability of atmosphere, sea ice, and ocean in the Arctic Ocean to clarify a role of the Arctic Ocean in global climate change, and to understand the change process. In this study, I verified ocean variability by using geochemical, physical, and model data responding to atmospheric variability and analyzed the interannual and decadal variability in the Arctic Ocean.

P-29

**Modeling of a water balance for agricultural production responding to climate change in Bangladesh**

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In Bangladesh Agricultural yield is highly dependent upon the availability of optimum amount of water at proper growing season. Here water deficiency (or drought) is considered as one of major climatic restraints for winter crop production. To better understand the crop responses to moisture variation, a quantitative description is shown for water balance components and their changes during the season. The water balance is an accounting of the inputs and outputs of water. The major input of water is from precipitation and output is evapotranspiration. With the input of temperature and precipitation data, water balance is estimated for eight different districts of Bangladesh representing the north, central, southern & coastal zone. Weather, as a dominant factor influencing the agricultural operations through its effects on soil and plant growth. Hence any changes in regional climate could have significant effect on crop production in Bangladesh. Responding to climate change predictions, actual evapotranspiration (AE), soil moisture storage (ST), water deficiency (WD) and water surplus (WS) are discussed annually and seasonally using the Thornthwaite monthly water balance program. Annual moisture index is also analyzed to determine the climatic type. The pattern of water deficiency in northern region of Bangladesh, obtained from the procedure, provides preliminary estimates of the amount of water required for supplemental irrigation at different times and reflects its worst situation among all other regions.

P-30

**Land Use Changes of Tokyo and Osaka Metropolitan Areas- Visualization by grid data -**

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The purpose of this study is to create land use data by 500m grid in Tokyo and Osaka metropolitan areas based on the topographical maps in 1927, 1967 and 2001, and to analyze land use changes during the periods. As a method, firstly, land use was classified into nine items; forest, grassland and wild land, paddy field, farmland except paddy field, industrial area, urban area, water and swamp areas, Others, and Sea. Secondly, the most dominant item was made out by 500m grid. Finally, the land use data maps were visualized and analyzed spatially and quantitatively by GIS.

P-31

**Mono-dispersed single-walled carbon nanotubes as the key-elements for creation of environmental-friendly, transparent and electrical-conductive films**

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*2/ Faculty of Environmental Earth Science*

Transparent and electrical-conductive films are the key-materials of flat panel displays (FPD), light-emitting diodes (LED), solar cells and electro-chromic devices. ITO (indium tin oxide) has long been the key-element for building up the transparent and electrical-conductive films for these applications; but having several drawbacks: 1) ITO is chemically reactive, which can lead to corrosion during the practical applications; 2) ITO is rather brittle, which can degrade the performance of the flexible devices; and 3) ITO is expensive because of the limited availability of indium. Herein, we report on a simple yet practicable approach to establishing the transparent, electrical-conductive yet environmental-friendly films by using mono-dispersed single-walled carbon nanotubes (SWCNTs) as the key-elements. Aggregates of the as received, pristine SWCNTs were firstly dispersed into individual tubes by using n-dodecanol itaconic anhydride (DI) as the dispersant; these resulting mono-dispersed SWCNTs were then used as the key-element to create the interconnected nano-nets via a transcription-printing method. Films obtained under optimized conditions are transparent (with the light transmittance of 75 ~ 83 %) yet electrical-conductive (with the homogeneous conductivity of 180  $\Omega$  / cm<sup>2</sup>). Our dispersion method, which is capable of providing the mono-dispersed SWCNTs having the longer lengths, is the key-technique considerably to achieve this goal.

P-32

**Removal of bacteriophages and norovirus virus-like particles by coagulation-sand filtration process**

Nobutaka Shirasaki

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Norovirus (NV) is important human pathogens that cause epidemic and acute gastroenteritis. Although it has been 30 years since NV was first identified, the study of this virus, including experiments in the field of drinking water treatment, is still hampered by the lack of a cell culture-system. In recent years, expression of the NV genome in a baculovirus expression system results in the production of the recombinant NV virus-like particles (NV VLPs) that are morphologically and antigenically similar to native NV virions. In this study, we tried to investigate the removal of NV during coagulation-sand filtration process by using NV VLPs. Additionally, the behaviors of 4 types of bacteriophage (Q $\beta$ , MS2, f1 and f2) were also investigated to compare with that of NV VLPs. The coagulation-sand filtration experiments with NV VLPs revealed that removal of NV VLPs was 1 log. The similar removals were observed for NV-VLPs, Q $\beta$  and MS2 in the coagulation process but the removal of NV-VLPs was poor in the sand filtration process. This result indicates the possibility that the native NV are also more difficult to remove by the coagulation-sand filtration process than the major bacteriophages.

P-33

**Sea cucumber larval metamorphosis by neurotransmitters**

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Larval settlement and metamorphosis of marine invertebrates is known to be induced by natural cues and chemical cues. Chemical inducer of sea cucumber larval metamorphosis has not been searched to date. To search for inducers of sea cucumber (*Apostichopus japonicus*), 45 compounds which induce metamorphosis of other invertebrate larvae were tested. As a result, 90 % of larvae completed their metamorphosis 120 hours later by 5-10  $\mu$ M of dopamine and L-DOPA, and 50  $\mu$ M of L-adrenalin and L-noradrenalin. After doliolaria larvae were exposed to dopamine for 24h, and transferred to into fresh sea waters, 77 % of larvae metamorphosed to juvenile in 72 hours.

P-34

**Habitat selection of three sympatric Myotis species in agricultural landscape**

Takumi Akasaka

*Graduate School of Agriculture*

To clarify foraging habitat selection of three sympatric Myotis species (*Myotis daubentonii*, *Myotis gracilis*, and *Myotis frater*), we radio tagged twelve breeding female of each species in an agricultural landscape of Hokkaido, northern Japan. The bats were tracked for five days per individual on average. *M. daubentonii* more frequently selected stream and riparian habitat than any other habitats in foraging area, whereas *M. gracilis* selected stream and shelter belt forests. In contrast, *M. frater* used a wide range of habitats including stream and riparian habitat. Although each species showed various habitat selections, our study demonstrated an importance of stream and riparian habitat for all species.

P-35

**Tree Selection for Tree Selection for Nests and Roosts of the Japanese Pygmy Woodpecker *Dendrocopos kizuki***

Kanomi Shiina

*Graduate School of Environmental Science*

This study examined the tree selection usage of nests and roosts of the Japanese pygmy woodpecker *Dendrocopos kizuki*, which is the smallest of all Japanese woodpecker species and has intensive selection because of their body size and ability of excavation and to reduce predation risk. Forty-four cavities were measured and availability of tree species was examined at the study site. DBH, decay stage and tree species were selected by GLMs as factors that influenced tree selection usage. Ivlev's electivity test indicated a strong preference for *Alnus hirsuta* and *Populus maximowiczii*, suggesting that these trees, which are within their excavation ability, may have been selected to lower predation risk, and thus, leading to a higher reproduction success.

P-36

**Importance of rpoS in *Escherichia coli* biofilms**

Akinobu Ito

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Rather than existing as planktonic isolated cells, most bacteria live attached to surfaces as sessile communities often referred to as biofilms. These sessile communities pose serious problems for human health and are of concern in medical, environmental and industrial settings. For the biofilm formation, the creation of starved, stationary phase-like zones seems to be an important factor, and the importance of the rpoS gene in the biofilm formation has been suggested. However, the mechanisms of the rpoS contribution to biofilm formation have not been understood in details. In this study, the roles of the rpoS gene have been investigated. Our study revealed that *Escherichia coli* didn't form mature biofilms without rpoS gene, and the gene expression patterns of wild type biofilms were different from that of rpoS mutant biofilms. In the mature biofilms by the wild type strain, genes involved in energy metabolism and flagella synthesis showed decreased expression, while genes involved in stress responses showed increased expression. These results strongly suggest that the rpoS gene is significant for the formation of the *E. coli* biofilms.

P-37

**Importance of a natural F-plasmid in *Escherichia coli* biofilm formation**

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Several studies have shown that *Escherichia coli* harboring an engineered de-repressed conjugative F-plasmid forms a dense biofilm using the piliation. However, the detailed mechanisms of biofilm formation by *E. coli* harboring a natural F-plasmid, in which pili formation and conjugation are repressed, remains poorly understood. In this study, we provided experimental evidence that the mating pili between F+ cell pairs of *E. coli* harboring a natural F-plasmid was required for 3D mushroom-type architecture of biofilms by stimulating the curli and colanic acid production. The step-wise biofilm formation was proposed base on microscopic observations with the mutants. Pili were the only adhesion factor to make cell-to-cell contact at the initial biofilm development, and the stimulated helical curli production helped cell-to-surface interaction at the late stages of biofilm development. The presence of curli played an important role in the maturation



process and designed the structure of mature biofilms. These data provided new insights into the role of F-plasmid during the development of *E. coli* biofilms.

P-38

#### **Characteristics of nitrogen removal and microbial community in an up-flow granular bed anammox reactor**

Sunja Cho , Naoki Fujii , Yoshitaka Takahashi , Masaki Shimokawa , Satoshi Okabe

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The anammox brings us innovative conversion in nitrogen removal from wastewater owing to its lower oxygen demand and no requirement for external carbon sources. However the process has several difficulties; anammox bacteria have extremely slow growth rate comparing to other co-existence bacterial groups and anammox reaction demands not only ammonia but nitrite which is rare in general wastewater. Moreover we have to retain a sufficient amount of anammox bacteria in a reactor for effective anammox activity. For effective emission of final N<sub>2</sub> gas, effective substrate transportation and prevention of washing-out anammox biomass, an up-flow granular bed anammox reactor was applied in this study. The objectives of this study are to development and investigate nitrogen removal performance of an up-flow granular bed anammox reactor. In addition, we investigated the microbial community characteristics of anammox granules established in the reactor. Anaerobic ammonium oxidizing (anammox) granules were cultivated with a synthetic nutrient medium in a column reactor with sampling ports (inside diameter 2 cm). The real working volume of the reactor was 1,250 cm<sup>3</sup> (length 44.2 cm, diameter 6 cm). The reactor was maintained at 37°C. Nonwoven fabric sheet (0.8 cm thickness, length 3 cm, and width 3 cm) was used for carrier materials of biofilms. The hydraulic retention time (HRT) of the reactors was set between from 0.5 to 6.0 h. The synthetic nutrient medium was composed of 8-25 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 7-20 mM NaNO<sub>2</sub>, 1.0 mM KHCO<sub>3</sub>, 0.2 mM KH<sub>2</sub>PO<sub>4</sub>, 1.2 mM MgSO<sub>4</sub> 7H<sub>2</sub>O, 1.2 mM CaCl<sub>2</sub> 2H<sub>2</sub>O, and 1 ml of trace element solutions I and II (Van de Graff, 1996). The medium was flushed with N<sub>2</sub> gas for at least 0.5 h to achieve the concentration of dissolved oxygen below 0.5 mg/L. For analysis of the microbial community, genomic DNA was extracted from anammox granules and amplified by PCR for 16S rRNA gene clone analysis with a combination of two universal bacteria-specific primers, 27F (5-AGAGTTTGATCCTGGCTCAG-3) and 1492R (5-GGTTACCTTGTTACGACTT-3). All sequences were compared with the similar sequences of the reference organisms by a BLAST search. FISH probes used in this research were chosen based on the results of phylogeny analysis. After about 8 month operation, the performance of the up-flow granular bed anammox reactor reached at steady state. Then, the maximum nitrogen removal rate of 17.4 Kg-N/m<sup>3</sup>/day (average 14.1 kg-N/m<sup>3</sup>/day) was obtained at HRT of 0.5 hr, corresponding to 0.34 g-N/ g dry VSS/day. By Analyzing samples derived from the different flow position, we could confirm that the nitrogen removal of the reactor was achieved evenly by the whole reactor. The shape of anammox granules was irregular, and the porous structure was well developed in the central part of the granules than outer part of the granules. From phylogeny analysis of 16S rRNA gene, the major anammox bacteria were closely related to the *Candidatus Brocardia anammoxidans* with the sequence similarity of 97%. The FISH results showed that the probe Amx820-hybridized bacteria accounted for more than 70% of total eubacteria. Besides, the bacterial clones belonging to Chloroflexi, beta-proteobacteria including of *Nitrosomonas* were detected. In addition Archaea, *Nitrobacter* and *Nitrospira* were also detected from samples of anammox granules. The co-existence bacterial groups except Archaea were mainly in the outer of anammox granules and spaces among sub-anammox granules. The bacteria of Archaea were no specified zone as a small size. In summary, the up-flow granular bed anammox reactor was successfully developed and operated with high nitrogen removal rate over 15 months. The granular bed anammox reactor allowed effective mass transfer as well as enrichment of anammox bacteria. By the microbial community analysis, the main anammox bacteria were proved as the *Candidatus Brocardia anammoxidans*. The Chloroflexi-like, beta-proteobacteria including of ammonia-oxidizing bacteria, nitrite-oxidizing bacteria are also detected.

P-39

#### **Performance and bacterial community structure of continuous two-chambered microbial fuel cells**

Kyungmi Chung<sup>1</sup>, Keiichi Kumano<sup>2</sup>, Satoshi Okabe<sup>2</sup>

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Converting biodegradable materials into electricity, microbial fuel cells (MFCs) present a promising technology for renewable energy production in specific applications. Using electrochemically active microorganisms as biocatalysts in an anode biofilm, MFCs can use any biodegradable resources and therefore have tremendous electron donor versatility. Biofilm formation of bacteria and their enrichment in the surface of anode electrode are very important for the better performance in MFCs. Substrate (e.g., glucose, acetate and lactate) types can affect the bacterial diversity in the anode biofilm in MFCs, but little studies were conducted. In addition, method of wastewater treatment containing acetate



or derivatives of glucose in the effluent of the reactor has not been discussed in previous study. Up to now, the above problems have not been systemically examined in MFCs. Therefore, the objectives of this study is to demonstrate a continuous power generation using two chambered MFCs and to identify key bacteria responsible for power generation on the anode electrode surfaces during over one year operation.

P-40

**Differentiation in crown architecture among 200 tree species in a lowland rainforest, Peninsula Malaysia**

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2/ Graduate School of Environmental Earth Science,  
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4/ University of Miami*

Tropical rainforests are characterized by wide array of species exhibiting complex three-dimensional canopy architecture leading to vertical and horizontal heterogeneity in light availability. In this study, we investigated differentiation in crown architecture at the whole tree community considering the effects of specific traits related to heterogeneity in light availability in Pasoh 50 ha plot, peninsula Malaysia. Our results suggest that specific adult size (e.g. emergent, canopy or understory species) affects differentiation in trunk diameter-height and height-crown length relationships, whereas shade-tolerance affects differentiation in trunk diameter-height and height-crown width relationships. We conclude that crown architecture is closely related to species-specific traits in tropical tree communities.

P-41

**Influence of operating conditions on physically irreversible fouling in submerged MBRs**

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In this study, continuous operation of pilot-scale MBR was conducted in order to investigate the influence of operating conditions on physically irreversible fouling. Analyses of organic matter contained in mixed liquor of MBRs and the foulant desorbed from fouled membrane were carried out to evaluate the nature and behavior of organic matter which contribute to the evolution of physically irreversible fouling. Physically irreversible fouling was enhanced when MBRs were operated with higher F/M ratio. Relative abundance of polysaccharide-like substance in the foulant increased with the rate of physically irreversible fouling observed in continuous operation. Regardless of F/M ratio change, there were significant similarities in the monosaccharide compositions of membrane foulants desorbed from fouled membranes. In addition, the monosaccharide compositions of foulants were considerably different from those of dissolved carbohydrate in the mixed liquor of MBRs. It is most likely that some specific carbohydrate cause physically irreversible fouling preferentially.

P-42

**Submicron powdered activated carbon effectively removes geosmin from water—effect of particle size on removal**

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Powdered activated carbon (PAC) adsorption is one of the best technologies for removing Earthy-musty odor substances such as geosmin from algae. First, we confirmed that submicron PAC (diameter through which 50 % of activated carbon particles by mass passes (D50): 1.0  $\mu\text{m}$ ) was much more effective for removing geosmin than normal PAC (D50: 14  $\mu\text{m}$  in batch adsorption experiments). The experimental results were well simulated by Branched-pore Diffusion Model (BPDM), in which the intraparticle diffusion through macropores was followed by diffusion from macropore to micropore. Those results suggested that D40, could be a representative diameter characterizing adsorption kinetics of activated carbon particles having a size distribution. Lastly, geosmin decay curves were simulated with different D40 values. As a result, the simulation revealed that particle size reduction to 1-2  $\mu\text{m}$  is effective in improving geosmin removal rate, but no further removal enhancement is expected when activated carbon is further pulverized down to less than 1  $\mu\text{m}$ .

P-43

**A signal of climate change in the Arctic Ocean shown in geochemical, physical, and model data**

Hiroyasu Yamaguchi , Motoyoshi Ikeda , Takayoshi Ikeda

*Faculty of Environmental Earth Science*

When we think about a global change, the Arctic Ocean reflects sensitively an influence of climate change such as global warming shown in ocean variability (e.g. the sudden increase and decrease of sea ice); therefore, the Arctic Ocean is an important climatic component that conveys an effect of the variability to the whole earth. It is important to estimate quantitatively the variability of atmosphere, sea ice, and ocean in the Arctic Ocean to clarify a role of the Arctic Ocean in global climate change, and to understand the change process. In this study, I verified ocean variability by using geochemical, physical, and model data responding to atmospheric variability and analyzed the interannual and decadal variability in the Arctic Ocean.

P-44

**Toxicity of herbicide glyphosate to HepG2 cell line by using Human DNA Microarray analysis.**

Jintana Wongta

*Department of Urban and Environmental Engineering, Faculty of Engineering, Hokkaido University.*

Glyphosate (one common brand name is Roundup) is a kind of highly effective broad spectrum herbicide with the characteristics of broad spectrum, low toxicity and no residue. It is the best selling herbicide around the world. No matter crop or weed, generally, all green plants can be ruined after we spray Glyphosate over them. Glyphosate is mainly sold to United States of America, European Union, Argentina and other countries including Japan. Glyphosate occupies more than 30% of the herbicide sales volume all around the world and has the trend of continuous increase. Their environmental contamination are increasing while the human health effects is not exactly point out and still debate among the scientists. Nowadays, Microarray analysis is the high sensitivity tool to investigate underlying mechanism of toxicants. That's suitable to apply to evaluate the toxicity of undefined herbicide like glyphosate. The objective of this study was to assess the toxicity of glyphosate to human HepG2 cell by using Microarray technology. Cytotoxicity analysis have shown that glyphosate have less effect to human HepG2 cell. The cytoviability still 100% or more even if exposure dose up to 100mM. For selecting proper dose to DNA microarray analysis, our selection base on cytoviability result. But there is no significant changing in cytoviability for glyphosate. From these result, our study decided to use low dose of glyphosate are 50 $\mu$ M, 1mM and 10mM for DNA Microarray analysis. And using heavy metal (As, Cd and Cr) for combination experiment.

# **Programs**

**Hokkaido University Sustainability Weeks -G8 Summit Round**

**Symposia, Workshops and Other Events,  
June 24 (Tue) - July 11 (Fri)**

# 2008 International Workshop on Multi-Media Signal Processing

- Next Generation Digital Signal Processing for Low Power and Sustainability Systems -

**Date:** June 24 (Tue), 10:00-17:30

**Venue:** Conference Room (11-17), Graduate School of Information Science and Technology, HU

**Main Organizer(s):** MEXT Global COE Program,  
Center for Next-Generation Information Technology based on  
Knowledge Discovery and Knowledge Federation, HU

## Summary

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An international workshop on the realization of high-quality, high-efficiency multimedia information and communication based on broadband networks, high-speed wireless LAN, mobile systems (ultra-low power systems), etc.

## Programme

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### *Keynote Talk*

“Super-Resolution Imaging”

Dr. Kai-Kung Ma (Nanyang Technological University, Singapore)

### *Keynote Talk*

“Efficient Semi-structured Data Mining Algorithms: Towards Knowledge Discovery in the Cyberspace”

Dr. Hiroki Arimura (HU, Japan)

### *Invited Talk*

“Nonlinear denoising filter for images with interactive evolutionary computing considering the subjective assessment”

Dr. Kaoru Arakawa (Meiji University, Japan)

### *Invited Talk*

“Enhancement of MPEG/JPEG Images Based on Histogram Equalization Without Gamut Problem”

Dr. Akira, Taguchi (Musashi Institute of Technology, Japan)

### *Invited Talk*

“Design of parallel FFT with block floating point arithmetic”

Dr. Hiroshi Ochi (Kyusyu Institute of Technology, Japan)

### *Invited Talk*

“Efficient Method of Large-Scale Data Analysis Using BDD-based Data Compression”

Dr. Shinichi Minato (HU, Japan)

## GENERAL SESSION

Accepted papers will be presented in this session.

Inquiry: Graduate School of Information Science and Technology, HU TEL: +81-(0)11-7066489 E-mail: miya@ist.hokudai.ac.jp URL: <a href="http://sw2008.jp/english/weeks/opening/">http://sw2008.jp/english/weeks/opening/</a>
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# Environmental Monitoring for Conservation of Ecosystems

**Date:** June 25 (Wed), 12:00-17:30

**Venue:** Conference Hall, HU

**Main Organizer:** Faculty of Environmental Earth Science, HU

**Co-Organizers:** Research Faculty of Agriculture, HU; Institute of Low Temperature Science, HU

## Summary

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Extreme weather conditions observed globally have recently caused abnormal changes in ecosystems. To help understand the current situation and mechanisms of these abnormal changes to the Earth, the latest results of atmospheric, meteorological and hydrological observation and research at the South Pole as well as in tropical and temperate zones will be reported.

## Programme

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“Activities of Ministry of Education, Culture, Sports, Science and Technology on climate change and global warming”

Naoko Okamura (Ministry of Education, Culture, Sports, Science and Technology)

“A new scientific scheme to promote social/academic benefits: Hydrometeorological Array for ISV-Monsoon Automonitoring (HARIMAU)”

Manabu D. Yamanaka (JAMSTEC-IORGC/Kobe University)

“The Project of the Antarctic Syowa MST/IS Radar (PANSY)”

Kaoru Sato (The University of Tokyo)

“The carbon budget of permafrost-dominated ecosystems”

Trofim C. Maximov (IBPC, Siberian Branch of Russian Academy of Sciences, Russia)

“Environmental and climate change in Mongolia”

Azzaya Dolgorsuren (Institute of Meteorology and Hydrology, Mongolia)

“Carbon dioxide balances of tropical and temperate forests”

Takashi Hirano (Hokkaido University)

Inquiry: Faculty of Environmental Earth Science, HU

TEL: +81-(0)11-7062200

E-mail: iwakuma@ees.hokudai.ac.jp

URL: <http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm>

# Dynamics and Pathways of Land Systems Change

**Date:** June 25 (Wed), 9:00-17:00

**Venue:** Century Royal Hotel (N5, W5, Sapporo)

**Main Organizer(s):** Sustainability Governance Project (SGP), HU

**Co-Organizer(s):** Faculty of Environmental Earth Science, HU

**Supported by:** Ministry of Education, Culture, Sports, Science and Technology

## Summary

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Efforts will be made to predict the future of the terrestrial environment and avoid environmental degradation by clarifying the effects of different types of land use on elements of the terrestrial environment such as soil components, ground, water systems and ecosystems, from the past to the present.

## Programme

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“Human-environment interactions: how to learn from the past Southampton”

John Dearing (University of Liverpool, UK)

“Spatio-temporal Land System Dynamics: Lessons from long-term studies of the Sahel”

Anette Reenberg (University of Copenhagen, Denmark)

“Land use dynamics in Nepal”

Teiji Watanabe (HU)

“Land-use change and unsustainable management of Malaysian tropical rain forest systems”

Toshinori Okuda (Hiroshima University, Japan)

“Integrated History for Identifying Path Dependency of Land Systems”

Billie Turner (Clark University, USA)

“Incremental change and path dependency in land systems - cases from East Africa”

Lowe Börjeson (Stockholm University, Sweden)

“Thresholds and Feedbacks in Human-Environment System Dynamics”

Sander van der Leeuw (Arizona State University, USA)

“Land Use Dynamics and Terrestrial Ecosystem Processes”

Hideaki Shibata (HU)

Inquiry: Faculty of Environmental Science, HU

TEL: +81-(0)11-7062260

E-mail: kohyama@ees.hokudai.ac.jp

URL: [http://www.gcoe.ist.hokudai.ac.jp/index.php?ml\\_lang=en](http://www.gcoe.ist.hokudai.ac.jp/index.php?ml_lang=en)

# Global Warming – Message from Scientists

**Date:** June 25 (Wed), 13:30-16:30

**Venue:** Conference Hall, HU

**Main Organizer(s):** Science Council of Japan; HU

**Supported by:** Ministry of Education, Culture, Sports, Science and Technology; Ministry of the Environment;  
Japan Geoscience Union; Meteorological Society of Japan

**Special Cooperation:** The Asahi Shimbun

## Summary

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To tackle global environmental issues, we must establish and promote comprehensive measures in a range of fields, including monitoring of unprecedented climate change, efforts to prevent such changes and to implement comprehensive climate change research, social structural reform, and education supporting the norm of a sustainable society. We will host a symposium open to the general public in cooperation with Hokkaido University and other institutes to consider these issues, which are currently generating deep social interest, with the citizens of Sapporo.

## Programme

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### *Opening Remarks:*

**Chair:** Teruyuki Nakajima, Center for Climate System Research, University of Tokyo

Hiroshi Saeki, Hokkaido University

Kojiro Irikura, Committee for Human-related Environmental Issues such as Global Warming

"Up-front reports from the Japanese science community"

1. Science of Climate Change

Seita Emori, National Institute for Environmental Studies

2. Evaluation of the Effects of Climate Change

Yasushi Honda, Graduate School of Comprehensive Human Sciences, University of Tsukuba

3. Mitigation of Climate Change – Basic Concepts

Tatsuyoshi Saijo, Institute of Social and Economic Research, Osaka University

4. Adoption and Alleviation – from a Social Science Perspective

Fumikazu Yoshida, The Graduate School of Public Policy, Hokkaido University

### *Panel discussion: "Global Warming – What Should We Do Now?"*

**Moderator:** Keiji Takeuchi (Senior Staff Writer, The Asahi Shimbun)

**Panelists:** Teruyuki Nakajima, Center for Climate System Research, University of Tokyo

Susan Solomon, IPCC WG1 cochair, NOAA Aeronomy Laboratory

Kenji Yamaji, School of Engineering, University of Tokyo

Zou Ji, School of Environment and Natural Resources, Renmin University of China

Motoyoshi Ikeda, Faculty of Environmental Earth Science, Hokkaido University

### *Closing Remarks:*

**Chair:** Takeo Hondoh, Hokkaido University

Inquiry: SCIENCE COUNCIL OF JAPAN

TEL: +81-(0)3-34036295 FAX: +81-(0)3-34036224

E-mail: p228@sc.go.jp

URL: <http://www.scj.go.jp/ja/event/>



# Northeast Asia in the Cold War: New Evidence and Perspectives

**Date:** June 26 (Thu) – 27(Fri)

**Venue:** Conference Hall, HU

**Main Organizer(s):** Slavic Research Center, HU

## Summary

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This symposium will bring new international documents and comparative regional perspectives to the study of the very meaning of “ending of the Cold War”.

## Programme

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*Day 1 (Thursday, June 26) 10AM – 1730PM*

10 – 1100 Leadership in the Cold War

David WOLFF (HU), Vladislav ZUBOK (Temple University)

1115 – 1300 Interdisciplinary Approaches

HA Yongchool (Seoul National University), NAKACHI Mie (University of Chicago)

Mark EDELE (University of Western Australia)

Douglas STIFFLER (Juniata College)

1430 – 1700 End of the Cold War in Northeast Asia (?)

Sergey RADCHENKO (London School of Economics), NIU Jun (Beijing University)

Lis TARLOW (Harvard University), Svetlana SAVRANSKAYA (National Security Archive)

*Day 2 (Friday, June 27) 930AM – 1730PM*

930 – 1030 Soviet-Japanese Relations in the American Prism

YOKOTE Shinji (Keio University)

HASEGAWA Tsuyoshi (University of California at Santa Barbara)

1045 – 1215 Socialist Alliances

WOO Seongji (Kyung Hee University), CHEN Jian (Cornell University)

SHEN Zhihua (Eastern China Normal University)

1330 – 1530 Comparative Alliances

Mark KRAMER (Harvard University), IZUMIKAWA Yasuhiro (Kobe College)

Grzegorz EKIERT (Harvard University)

1600 – 1730 Northeast Asia, the Cold War and the 21<sup>st</sup> Century

Dmitry GORENBURG (Harvard University), KIM Hakjoon (Donga Ilbo)

WADA Haruki (Tokyo University, emeritus)

Inquiry: Slavic Research Center, HU

TEL: +81-(0)11-7064809

E-mail: ses-coe@slav.hokudai.ac.jp

URL: <http://src-h.slav.hokudai.ac.jp/>

# Neo-Science of Natural History : Origin & Evolution of Natural Diversity

**Date:** June 27 (Fri), 10:00-15:30

**Venue:** The Hokkaido University Museum

**Main Organizer:** 21<sup>st</sup> COE Program Neo-Science of Natural History, HU

## Summary

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Introduces the allure of the Neo-Science of Natural History, a new discipline created at Hokkaido University to explore how the history of the Earth and the evolution of life affect each other.

## Programme

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- 10:00 “Sustainable Nature - Learning from the Natural History of Earth and Life.”  
Noriyuki Suzuki (HU)
- 10:30 “Human Impacts on the Global Carbon Cycle.”  
Urumu Tsunogai (HU)
- 11:00 “Ocean Currents Seen in the Atmosphere.”  
Shoshiro Minobe (HU)
- 11:30 “Reconstructing Microalgal Evolution by Means of Fossil and Molecular Analyses.”  
Takeo Horiguchi (HU)

Lunch (12:00 – 13:00)

- 13:00 “Speciation Resulting from Sexual Conflicts: Geographic Differentiation and the Development of Reproductive Isolation in a Grasshopper, *Podisma sapporensis*.”  
Shin-ichi Akimoto (HU)
- 13:30 “Reconstruction of Evolution and Variation of Terrestrial Palaeo-ecosystem.”  
Ken Sawada (HU)
- 14:00 “Do Living Fossils Really Occur? – Did the Human Evolve from the Monkey?”  
Ryuichi Masuda (HU)
- 14:30 “Training Course for Parataxonomists Promoted by Hokkaido University,”  
Masahiro Ohara (HU)
- 15:00 “What is Neo-Science of Natural History? – Summary and Future Perspective.”  
Takeo Horiguchi (HU)

Inquiry: 21<sup>st</sup> COE Program Neo-Science of Natural History, HU  
FAX: +81-(0)11-7064851  
E-mail: [horig@sci.hokudai.ac.jp](mailto:horig@sci.hokudai.ac.jp)  
URL: <http://nature.sci.hokudai.ac.jp/symposium/sw2008/program.html>

# Science Café Events

## "Outreach for the Most Recent Information on Global Warming"

**Date:** June 28 (Sat), 14:00-15:30

**Venue:** Sapporo55 Building (N5, W5, Sapporo)

**Main Organizer(s):** Graduate School of Environmental Science, Institute of Low Temperature Science, Communicators in Science and Technology Education Program (CoSTEP), HU

### Summary

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The most recent research results on global warming will be discussed with citizens by inviting experts who will participate in an international climate change symposium to be held in Sapporo in the runup to the Hokkaido Toyako Summit.

### Programme

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*Guest Speakers:*

Y. Yamanaka (HU)

A. Ohmura (Swiss Federal Institute of Technology Zurich, Swiss)

Inquiry: Communicators in Science and Technology Education Program, HU

TEL: +81-(0)11-7063276

E-mail: [office@costep.hucc.hokudai.ac.jp](mailto:office@costep.hucc.hokudai.ac.jp)

URL: <http://costep.hucc.hokudai.ac.jp/sw2008/>

# Sustainability Sciences for Protecting Aquatic Ecosystem and Marine Food

**Date:** June 28 (Sat), 9:00-17:00

**Venue:** Conference Hall, HU

**Main Organizer(s):** Faculty of Fisheries Sciences, HU

## Summary

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To feed the ever-increasing world population, it is important to obtain food not only from land but also from the sea. To ensure that children will also be able to use marine resources in the future, a new method of marine resource management that considers marine ecosystems will be proposed.

## Programme

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9:00-9:10      Opening Remarks: Akihiko Hara (HU)

### *Keynote Address*

9:10-10:00    “Whereabouts of the world fisheries in the 21st Century” Tetsuji Ida (Kyodo-tsushin):

10:00-12:00   “The vulnerability of coupled marine and human ecosystems to climate and fishing” Ian Perry (Chair of the International GLOBEC, Canada)

12:00-14:00   Lunch Time & Poster presentation

### *Lectures*

14:00-14:20   “Emphasis of sustainability fisheries sciences based on the marine ecosystem approach” Masahide Kaeriyama (HU)

14:20-14:40   “In bit to the sustainable fisheries beyond the global warming” Yasunori Sakurai (HU):

14:40-15:00   “Sustainable hatchery management and food security using the HACCP system of Pacific salmon” Mamoru Yoshimizu (HU):

15:00-15:20   “Complicate-progressive utilization of low-value/trash marine bioresources” Hiroki Saeki (HU)

15:20-15:40   Coffee Break

15:40-16:50   Panel Discussion

16:50-17:00   Closing Remarks: Yoshio Takeuchi (Hokkaido Government)

Inquiry: Faculty of Fisheries Sciences, HU

TEL: +81-(0)138-405605, FAX: +81-(0)138-405605

E-mail: salmon@fish.hokudai.ac.jp

URL: <http://www.fish.hokudai.ac.jp/sw/index-e.html>

# Fuel Cell Experiments - Environment-Friendly Energy -

**Date:** July 28 (Sat), 13:30-15:30

**Venue:** Center for Research and Development in Higher Education, HU

**Main Organizer(s):** Center for Research and Development in Higher Education (General Education Laboratory Exercise in Natural Science)

## Summary

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Fuel cells have great potential as an environmentally friendly energy source.

A short lecture and experiment on fuel cells in science laboratory will be given.

Participants will learn basic mechanism, function and energy efficiency of electric power generation by fuel cells.

## Programme

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“Experiments on FuelCell Energy”

A.Onodera(HU)

M.Takesada(HU)

Inquiry: Center for Research and Development in Higher Education, HU

FAX: +81-(0)11-7065288

E-mail: [webmaster@gelens.high.hokudai.ac.jp](mailto:webmaster@gelens.high.hokudai.ac.jp)

URL: <http://gelens.high.hokudai.ac.jp/class2008/lec0806.pdf>

# Taxonomy Returns !

## -For the Better Understanding of our Mother Nature-

Date: June 28 (Sat), 13:00-17:00 – 29 (Sun), 10:00-15:00

Venue: The Hokkaido University Museum

Main Organizer(s): The Hokkaido University Museum; Faculty of Science, HU

### Summary

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Although biodiversity is an important area of research worldwide, researchers cannot answer the simple question of how diverse life on Earth is. The present situation in research circles will be analyzed, and countermeasures will be considered. The lecture presentation for the public entitled “Naming Organisms” will be held on Saturday 28th, 13:00-17:00 using Japanese language, and a professional symposium on “Toward the Future Development of Zoological Nomenclature” will be held on Sunday 29th, 10:00-15:00.

### Programme

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*June 28th (Sat): “Naming Organisms” (Lecture Presentation for the Public in Japanese)*

“Role of ICZN for naming organisms”

Dennis Brothers (President of ICZN, Prof. of University of Natal)

(presented in English with simultaneous interpretation into Japanese)

“How to minimize the change in scientific names – Problems towards the terminus of zoological nomenclature”

Teruaki Nishikawa (Nagoya University Museum, Nagoya University)

“Drosophila melanogaster, an example of changing names”

Masanori Toda (Low Temperature Institute, Hokkaido University)

“Easygoing proposal of a new taxon placed at a rank above or below species may reduce biological information contained in a classification system”

Junichi Kojima (Faculty of Science, Ibaraki University)

“On the current International Code of Botanical Nomenclature –Vienna Code”

Hideki Nakai (Sapporo)

*June 29 (Sat): “Future Development of Zoological Nomenclature” (Workshop for specialists in Japanese)*

“Next code and web registration”

Dennis Brothers

“Towards the nomenclature codes ensuring better communication on biological information and stability of concepts of informal taxa”

Jun-ichi Kojima

“Can we skip species epithets ?”

Shunsuke F. Mawatari (Faculty of Science, Hokkaido University)

Panel Discussion on “Future Development of Zoological Nomenclature”

Inquiry: Faculty of Science, HU

TEL: +81-(0)11-7062750

E-mail: shunfm@sci.hokudai.ac.jp

URL: <http://museum-sv.museum.hokudai.ac.jp/activity/seminar/>

# The Present and Future of Ainu Studies, Part I

**Date:** June 29 (Sun)

**Venue:** Conference Center, HU

**Main Organizer(s):** Center for Ainu and Indigenous Studies, HU

**Supported By:** Ainu Association of Hokkaido

## Summary

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A series of symposiums will look back on the history of research into the Ainu with an eye to ideal research methods for the future, with the first symposium featuring history, archaeology and linguistics.

## Programme

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“Toward the Future of Ainu History Studies”

S. Emori (Tohoku Gakuin University)

“The Progress and Future of Ainu Archaeology”

T. Sato (Keio University)

“The History of Ainu Language Studies and Future Possibilities”

K. Refsing (University of Copenhagen, Denmark)

Inquiry: Center for Ainu and Indigenous Studies, HU

TEL: +81-(0)11-7062859

E-mail: [ainu@let.hokudai.ac.jp](mailto:ainu@let.hokudai.ac.jp)

URL: <http://www.cais.hokudai.ac.jp>



# School Education for Establishing Sustainable Society in Hokkaido

**Date:** June 29 (Sun), 13:00-18:00

**Venue:** Conference Hall, HU

**Main Organizer(s):** Faculty of Education, HU

## Summary

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How should environmental education be positioned in the school curriculum? Discussions will be held in the following three areas: environmental education as a separate school subject; environmental education within existing school subjects; teacher communities for the creation of environmental education.

## Programme

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“How should we think about the environment by looking at our immediate surroundings?”

H. Aono(Hokkaido Chitose-Komasato Elementary and Junior High School)

“Environmental education that changes the student and the school: From knowledge to the action”

Y. Takikawa(University of Tokyo, Komaba)

“Problems of environmental education in the high school: From the practice of ‘Environmental Science’ in the Sapporo Kaisei high school”

T. Umetsu(Sapporo Kaisei High School)

“Environmental education as an elective subject: From the case in Korea and Japan”

H. Mitsuishi(Tokyo Gakugei University)

“Formation of teacher community to make environmental education: Introduction of practices in a science education research circle in Hokkaido”

M. Kuwajima(JASCO Corporation)

Organizer and Chairperson

E. Ohno(HU)

Inquiry: Faculty of Education, HU

TEL: +81-(0)11-7063100

E-mail: seess629@edu.hokudai.ac.jp

URL: <http://sw2008.jp/weeks/education/>

# Toward Stronger Ties between Agricultural and Medical Sciences

**Date:** July 2 (Wed), 18:00-19:30

**Venue:** Sapporo55 Building (N5, W5, Sapporo)

**Main Organizer(s):** Sustainability Governance Project, HU

## Summary

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When we think about the most immediate issues of food and health, we need to learn from the past and re-establish a philosophy of harmony between agriculture and medicine. We will consider this important theme.

## Programme

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18:00 ~ 18:40	Lecture session
18:40 ~ 18:50	Break
18:50 ~ 19:30	Question and answer session

Inquiry: Sustainability Governance Project, HU
TEL: +81-(0)11-7064530
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URL: <a href="http://www.sgp.hokudai.ac.jp/SGP.html">http://www.sgp.hokudai.ac.jp/SGP.html</a>

# International Conference on Sustainable Agriculture and Environment

**Date:** July 2 (Wed) – 6 (Sun)

**Venue:** Conference Hall

**Main Organizer(s):** International Council for Sustainable Agriculture

**Co-Organizer(s):** Rakuno Gakuen University, Hokkaido University, and Research Faculty of Agriculture, Hokkaido University

**Supported By:** International Foundation for Sustainable Development in Africa and Asia (IFSDAA), Internationales Forschungszentrum für Erneuerbare Energien e.V. Deutschland (IFEED), National Agricultural Research Center for Hokkaido Region, NARO, International Council, Society for Sustainable Agriculture and Resource Management (ICSSARM), Japan International Cooperation Agency (JICA), Alumni Association, Faculty of Agriculture, Hokkaido University

## Summary

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The present challenges to ensure secure and safe supplies of food, feed, fiber, water, and energy for the world's population are immense. The ability of the Earth to sustain humankind is under tremendous pressure - from greenhouse gas emissions, population growth, degradation of water supplies, and the depletion of non-renewable, natural resources.

## Programme

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Global Climate Change and Ecosystems

Naoyuki MATSUMOTO (National Agricultural Research Center for Hokkaido Region, Japan)

Farming Systems and Agro-ecology

Upendra Sainju (USDA-ARS, Northern Plains Agricultural Research Laboratory, USA)

Session Adaptive Management of Biodiversity

Ian Poiner (Australian Institute of Marine Science)

Session Integrated Farming and Bioenergy

N. EL BASSAM (IFEED, Germany), Germany IWABUCHI Kazunori (Utunomiya University)

Session "Mottainai" - Reduce, Reuse, Recycle and Refuse (The 4 R's) -

Kazuhiro TAKAMIZAWA (Gifu University, Japan)

Germplasm Conservation and Uses

Rishi K. Behl (CCS Haryana Agricultural University, India) / Tohru Kobata (Shimane University)

Plant Interactions / Interfaces

Jean-Jacques DREVON (Rhizosphere & Symbiosis Research, INRA, France)

Governance of Agro-ecosystems and Tradeoffs in Developmen

John M. ANTLE (Affiliation: Department of Agricultural Economics and Economics, Montana State University)

Inquiry: Sustainability Governance Project (SGP), HU

TEL: +81-(0)11-7064170

E-mail: icsa08@sgp.hokudai.ac.jp

URL: <http://www.agr.hokudai.ac.jp/ICSA08/framepage1.html>

# Environment and Health; Human Life in Changing Global Environments

**Date:** July 3 (Thu), 13:30-18:30 – 4 (Fri), 9:30-18:30

**Venue:** Conference Hall, HU

**Main Organizer:** Graduate School of Medicine, HU

**Supported By:** The Ito Foundation, The Physiological Society of Japan Hokkaido Div.

## Summary

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The effects on health from changes in the natural environment such as global warming and environmental pollution will be highlighted, as well as the effects of changes in the social environment caused by round-the-clock economic activity. Measures to recover a rich natural environment and reclaim lifestyles will also be proposed.

## Programme

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### *Symposium I:*

“Global warming and human health”

K.Kanosue (Waseda Univ.), T.Horikoshi (Nagoya Inst. Tech.), M. Asayama (Chukyo Women’s Univ.), M.Hashimoto (Asahikawa Med. Col.)

### *Plenary Lecture:*

“Life on rotating planet; Challenge and opportunity”

S. Daan (Groningen University, Holland)

### *Symposium II:*

“Clocks in the body as environmental sensors”

T.Yoshimura (Nagoya Univ.), J.Dittami (Vienna Univ., Austria), S.Yoneyama (Inoue Hospital)

### *Symposium III:*

“Warnings to a sleepless society”

M. Okawa (Shiga Univ.), S.Nishino (Stanford University, USA), K.Mishima (N.C.N.P.), J.Kohyama (Tokyo Social Ins. Hospital)

### *Plenary Lecture:*

“Sleep and policy: New findings and opportunities”

W.C. Dement (Stanford University, USA)

### *Plenary Lecture:*

“Sustainable society, environment, and our health”

R. Kishi (HU)

### *Public Lecture:*

“Health problems in modern society: Prophylaxis and management”

K. Denda (HU), N.Hizawa (Tsukuba Univ.), M.Tsuji (Hokkaido Health Sci. Univ.)

Inquiry: Graduate School of Medicine, HU

TEL: +81-(0)11-7066058

E-mail: sathonma@med.hokudai.ac.jp

URL: <http://www.med.hokudai.ac.jp/news/2007/1221/ProgramE.pdf>

# Symposium on Sustainable Management for Culture and Communities

**Date:** July 5 (Sat), 14:00-16:30

**Venue:** Clark Memorial Student Center, HU

**Main Organizer(s):** Faculty of Letters, HU; Japan Association for Cultural Economics

## Summary

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In establishing museums, halls, etc. within communities, we have to consider how to gain the cooperation of that community. Managerial approaches to the long-term maintenance and development of cultural facilities will be examined using examples from Hokkaido.

## Programme

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### *Symposium Panelists*

K. Isoda ( Hokkaido Arts Foundation, Arte Piazza Bibai )

I. Matsuoka ( Mayor of Higashikawa Town : The Town of Photography )

T. Kubo ( Inter-cross Creative Center, the Sapporo International Short Film Festival and Market )

C. Saito ( Concarino : Performing Arts NPO )

### *Commentator*

M. Kobayashi ( the University of Tokyo )

### *Coordinator*

N. Husejima ( Husejima Planning Office )

Inquiry: Faculty of Letters, HU

TEL: +81-(0)11-7063067

E-mail: sasaki@let.hokudai.ac.jp

URL: [http://www.jace.gr.jp/taikai\\_ronbun.html](http://www.jace.gr.jp/taikai_ronbun.html)

# Let's talk about "Health of the Earth and People"

**Date:** July 5 (Sat), 13:30-16:30

**Venue:** Conference Hall, HU

**Main Organizer:** Graduate School of Medicine, HU

## Summary

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A big health inequity or gap exists between the developed and developing countries. For example, life expectancy varies from 82 years to 35. We intend to discuss about this health gap including the present status of water and neglected tropical diseases in the world during the workshop. We will then highlight how young people in Japan could be involved and participate in these global issues in the future.

## Programme

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### *Session I. Introduction*

- "Health inequity in the world"  
H. Tamashiro (HU)
- "Global water situation"  
N. Funamizu (HU)

### *Session II. Experiences from the fields*

- "Neglected tropical diseases"  
K. Ichimori (WHO)
- "Malaria"  
T. Tsuboi (Ehime University)
- "Activities of International Sanitation Year 2008"  
To be identified (JBIC)

### *Break*

### *Session III. A carrier map for international contributions of young people*

- "JICA/JBIC"  
To be identified
- "WHO"  
K Ichimori (WHO)
- "Hokkaido University I"  
K. Katakura (HU)
- "Hokkaido University II"  
To be identified (HU)
- "An example from a students group "Wakka" of Hokkaido University"  
To be identified (HU)

<p>Inquiry: Graduate School of Medicine, HU TEL: +81 (0)11-7067374 E-mail: ghentd@ghe.med.hokudai.ac.jp URL: <a href="http://www.ghe.med.hokudai.ac.jp">http://www.ghe.med.hokudai.ac.jp</a></p>
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# International Symposium: Sentinel Earth, Detection of Environmental Change

**Date:** July 5 (Sat) – 7 (Mon)

**Venue:** Conference Hall, HU; Clark Memorial Student Center, HU

**Main Organizer(s):** University of Alaska, USA; University of Palangka Raya, Indonesia; Japan Aerospace Exploration Agency; Remote Sensing Technology Center of Japan

**Co-Organizer(s):** Japan Air Line; Hokkaido Railway Company; Asahi Shimbun Company (Hokkaido Branch); Midori Net Hokkaido; Graduate School of Information Science and Technology, HU; Hokkaido Government;

**Supported by:** Hokkaido Government; Hokkaido Bureau of Economy, Trade and Industry; Ministry of Land, Infrastructure and Transport Hokkaido Regional Development Bureau; Hokkaido Broadcasting Co. Ltd

## Summary

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Global environmental predictions will be made using satellite and field observation data. In addition, policy exploration will be conducted for “sentinels for the global environment” for prompt control of environments from the North Pole to tropical zones according to prediction results.

## Programme

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July 5(Sat)

### *Opening Ceremony*

Chair: Toshihisa Honma, HU

Opening remarks:

Hiroshi Saeki, President, HU

Mark Hamilton, President, University of Alaska, USA

Henry Singarasa, President, University of Palangkaraya, Indonesia

Yasushi Horikawa, Director, Japan Aerospace Exploration Agency(JAXA)

Tsuguhiko Katagi; Director, Remote Sensing Technology Center of Japan (RESTEC)

### *Session 1 Tropical Regions*

Chair: Toshio Iwakuma, HU

Keynote Speech “ Characteristics and land use of Southeast-Asian peatlands”

Bambang Setiadi, National Standardization Agency, Indonesia

Invited Paper 1 “Forest management and land remediation in Central Kalimantan”

Suwido H. Limin, University of Palangkaraya, Indonesia

Invited Paper 2

Hidenori Takahashi, Hokkaido-Kalimantan Exchange Association for Culture, Science and Technology, Japan

Invited Paper 3: “ Monitoring of forest fires and land-use change”

Masanobu Shimada, Japan Aerospace Exploration Agency

Invited Paper 4: “ Socio-economic aspects of peatland management”

Noriyuki Kobayashi, Law School of Nihon University



July 6 (Sun)

*Session 2 Arctic Region*

Chair: Masami Fukuda, University of Alaska Fairbanks, USA

Keynote Speech

John Walsh, International Arctic Research Center, USA

Invited Paper 1

Larry Hinzman, International Arctic Research Center, USA

Invited Paper 2

Yojiro Matsuura, Forestry and Forest Products Research Institute, Japan

Invited Paper 3 “ Remote sensing of wildfire influence on carbon budget in boreal forests “

Keiji Kushida, HU

*Poster session*

July 7 (Mon)

*Session 3 Other Regions and Global Aspect*

Chair: Koji Yamazaki, HU

Keynote Speech “Detection of Global Change: Are we succeeding with this endeavour ?”

Atsumu Ohmura, Institute for Atmospheric and Climate Science, Swiss Federal Institute of Technology

Invited Paper 1 “Rapid decay of the Greenland and Antarctic ice sheets? “

Ralf Greve, HU

Invited Paper 2 “Comparative Marine Ecosystem Studies in Subarctic Regions”

Kenneth F. Drinkwater, Institute of Marine Research, Norway

Invited Paper 3 “ Ocean Change Detected From Ocean Analysis/Reanalysis Datasets MOVE/MRI.COM\_RA “

Masafumi Kamachi, Meteorological Research Institute, Japan

Invited Paper 4 “Digital Typhoon: A Data-Centric Approach to Events on the Earth”

Asanobu Kitamoto, National Institute of Informatics, Japan

*Session 4 Wild Fire in Asia — Sentinel Asia —*

Chair: Takashi Moriyama, Japan Aerospace Exploration Agency

Invited Paper 1 “Sentinel Asia”

Kazuya Kaku, Japan Aerospace Exploration Agency

Invited Paper 2 “Overview of Sentinel Asia Wild Fire Initiative”

Masami Fukuda, University of Alaska Fairbanks, USA

Invited Paper 3 “Contributions by JAXA”

Futoshi Takiguchi, Japan Aerospace Exploration Agency

Invited Papers 4-11, Report from Asian Countries

Inquiry: Faculty of Engineering, HU

TEL: +81-(0)11-7066784

E-mail: hhaya@eng.hokudai.ac.jp

URL: <http://sw2008.jp/SEarth>

# International Symposium on Sanitation in Hokkaido University

**Date:** July 6 (Sun), 9:00-13:00

**Venue:** Conference Hall, HU

**Main Organizer(s):** Faculty of Engineering, HU

**Co-Organizer:** JICA, JBIC

## Summary

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Although access to safe drinking water and basic sanitation are taken up together in Target 10 of the Millennium Development Goals, sanitation has been attracting less attention, funding and human resources than water supply. The urgency for action in the sanitation sector is obvious, considering the 2.6 billion people world-wide who remain without access to any kind of improved sanitation, and the 2.2 million annual deaths (mostly children under the age of 5) caused by water-related diseases and poor hygienic conditions. The United Nation declared that 2008 is the International Year of Sanitation. The symposium aims to prepare the platform to give opportunities for such purposes that 1) sharing information on sanitation issues; 2) discussing planning concept; policies from public health point of view, 3) summarizing current JICA/JBIC activities.

## Programme

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Mr.Hashimoto: (JBIC):

***JBIC activities on water and sanitation from the financial point of view(tentative)***

Mr. Sakata: (JICA):

***JICA activities on water and sanitation(Tentative)***

Prof. Dr. Wisjuprpto (Institut Teknologi Bandung, Indonesia):

***Wastewater research activities in ITB Bandung, Indonesia***

Professor Wilfredo I. Jose (University of the Philippines, Diliman) :

***Designing Sustainable Wastewater Treatment Systems: An Approach to Improve Sanitation in the Philippines***

Professor Murakami (Kohchi Institute of Technology):

***World Water Resource issues***

Professor Akira Sakai(Nihon Gesui Bunka Kenkyukai):

***Prospects for improving sanitation and the living environment in rural areas of Bangladesh***

Prof. Naoyuki Funamizu (Hokkaido University, Japan):

***Wastewater management based on the concept: “don’t mix” and “don’t collect” wastewater***

Inquiry: Faculty of Engineering, HU

TEL: +81-(0)11-7066270

E-mail: funamizu@eng.hokudai.ac.jp

URL: <http://www.eng.hokudai.ac.jp/labo/UBNWTRSE/index%20english.html>

# Catalysis Leading to a Sustainable Society

**Date:** July 7 (Mon), 9:00-17:00

**Venue:** Conference Hall, HU

**Main Organizer(s):** Catalysis Research Center, HU

## Summary

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Representatives from catalytic research institutions around the world will make proposals to the G8 nations and other major countries for new environmental policies and frameworks toward international cooperation based on catalysts, which are indispensable to the innovative development of environmental and energy technologies.

## Programme

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- 13:00 Opening address by the director of Catalysis Research Center of Hokkaido University
- 13:10 Presentation by panels of each country
- “Energy for the future of mankind – how catalysis can contribute”  
Jochen A. Lauterbach (CCST, University of Delaware, USA)
- “Photocatalysis for Sustainable Hydrogen Production”  
Michael Bowker (Surface Chemistry, Cardiff University, UK)
- “Basic Research in Catalysis to sustain Energy Supply for the Future”  
Hans-Joachim Freund (Fritz-Haber-Institut der Max-Planck-Gesellschaft, Germany)
- “An overview of present and potential contributions of heterogeneous photocatalysis to a sustainable society”  
Pierre Pichat (CNRS, France)
- (Coffee break)
- “New Technologies of the Boreskov Institute of Catalysis for Conversion and Utilization of Light Hydrocarbons”  
V. N. Parmon and V. I. Bukhtiyarov (Boreskov Institute of Catalysis, Russia)
- “Photocatalytic hydrogen production utilization Solar Energy”  
Can Li (State Key Laboratory of Catalysis, DICP, China)
- “Carbon dioxide and water as sustainable source for production of chemicals, fuels and energy”  
Rajiv Kumar (Catalysis & Inorganic Chemistry, NCL, India)
- “Collaboration between Catalysis and Nature for Sustainable Development”  
Wataru Ueda (Catalysis Research Center, Hokkaido Univ. Japan)
- 17:30 Panel discussion (questions from the audience)
- 17:50 Statement and closing remarks by Prof. W. Ueda

Inquiry: Catalysis Research Center, HU  
TEL: +81-(0)11-7069164  
E-mail: ueda@cat.hokudai.ac.jp  
URL: <http://www.cat.hokudai.ac.jp/ueda/summit/index.htm>

# International Symposium "Peace, Reconciliation and Civil Society: Toward a Sustainable Peace in East Asia and Europe"

Date: July 9 (Wed), 10:00-21:00

Venue: Sapporo L • PLAZA (N8, W3, Sapporo)

Main Organizer(s): "Peace, Reconciliation and Civil Society" Symposium Organizing Committee

Co-Organizer(s): Graduate School of Letters, HU and the Center for German and European Studies at the University of Tokyo

Supported By: The Akiyama Foundation

## Summary

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Wars and colonial rule have caused many wounds throughout history. Reconciliation seeks to heal those wounds. This symposium aims to consider the power of citizens to promote reconciliation and peace. Prominent experts from around the world will join us in discussing how reconciliation and peace may be achieved.

## Programme

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### Session 1 "Working for reconciliation in Hokkaido"

Yoshihiko Tonohira (Hokkaido Forum)

Sanae Ogawa (Eteke Kampa)

Kohichi Ohkawara (Tyukiren)

### Session 2 "Reconciliation in East Asia and the transnational cooperation of citizens"

Won-Soon Park (The Hope Institute, Korea)

Kang Jian (Beijing Fang Yuan Law Firm, China)

### Session 3 "Learning from the German organization 'Action Reconciliation Service for Peace' "

Christian Staffa (Action Reconciliation Service for Peace, Germany)

### Session 4 "Peace, Reconciliation and Civil Society"

Tessa Morris-Suzuki (Research School of Pacific and Asian Studies, The Australian National University, Australia)

Inquiry: Graduate School of Letters, HU

TEL: +81-(0)11-7064082

E-mail: odahiroshi@hotmail.com

URL: <http://sw2008.jp/reconciliation>

# **Sustainable Should Be Female Scientists' Career! Environments for Gender Equality and Work-Life Balance in Science**

**Date:** July 10 (Thu) – 12 (Sat), 9:00-17:00

**Venue:** Centennial Hall, HU; Faculty House “Trillium”, HU

**Main Organizer(s):** *FResHU* (Support Office for Researchers in Hokkaido University)

## **Summary**

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Improvement of the environment for female scientists to continue their academic careers with a long-term vision over various life events, such as marriage, childbirth, rearing and nursing care of children, will be discussed from the viewpoint of gender equality and work-life balance. For sustainable promotion of female scientists through generations, fostering programs including encouraging high school girls into science are also discussed.

## **Programme**

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*Keynote Speech & Panel Discussion:*

- \*Positive/Affirmative Action - Acceptable or Unacceptable?
- \*Beyond Glass Ceiling - Cheer Up & Career Up!
- \*Boys, Be Integrated! - Substantial Partnership
- \*Work-Life Balance - Dual Career & Life of Academic Couples
- \*Encourage Next Generations in Science

### **Poster Exhibition of the Leading Programs of Female Researchers in Japan**

*Speakers to be invited:*

Dr. Kuniko Inoguchi

A member of the House of Representatives; Previous Minister of Counteract the Falling Birthrate/ State for Gender Equality

Dr. Alice Hogan

Chief Administrative Officer, Asian University for Women also Founding Director NSF (National Science Foundation) Advance Program, U.S.A

Dr. Maya Widmer

Equal Opportunities Officer, SNSF (Swiss National Science Foundation); Member of Helsinki group; Chair of WIRDEM (Women in Research Decision Making), Switzerland

Dr. Dominique Soldati-Favre

Professor, Department of Microbiology and Molecular Medicine, University of Geneva, Switzerland

Dr. Julia Willingale-Theune

SET-Routes Coordinator, EMBL (European Molecular Biology Laboratory), Germany

Dr. Noriko Shiomitsu

Professor, Ochanomizu Women's University, Japan

Dr. Hisako Ohtsubo

Lecturer, University of Tokyo, Japan; FResHU Visiting Professor

Dr. Mari Jibu

Officer, Japan Science and Technology Agency, Japan; FResHU Visiting Professor

*FResHU* Hosts:

Dr. Kenta Ogawa, Dr. Maki Tani, Dr. Sanae M. M. Iguchi-Arigo

Inquiry: *FResHU* (Support Office for Female Researchers in HU)

TEL: +81-(0)11-7063625

E-mail: [freshu@jimuhokudai.ac.jp](mailto:freshu@jimuhokudai.ac.jp)

URL: [http://freshu.ist.hokudai.ac.jp/english/sw\\_2008.html](http://freshu.ist.hokudai.ac.jp/english/sw_2008.html)

# Beyond the Double Helix

~Life Science for the Disease Free Society~

**Date:** July 11 (Fri), 13:45-16:00

**Venue:** Auditorium, Institute for Genetic Medicine, HU

Main Organizer(s): Institute for Genetic Medicine, HU

## Summary

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The Genetic Institute for Medicine, Hokkaido University is one of the world prominent research institutes in the field of medical science and genetic diseases.

As part of the program of "Sustainability Week at Hokkaido University", we have a symposium "Beyond the Double Helix". In this scientific program, two of the world leaders in life science, Professors Lewis Cantley (Harvard Medical School, Boston, USA) and Tadamitsu Kishimoto (Osaka University, Osaka Japan) will give us a lecture as to provide future directions of the life science and will intend to encourage the graduate students and young scientists to explore the scientific directions of the 21<sup>st</sup> century for saving the patients suffering from various genetic diseases.

## Programme

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*"Life Science in the 21<sup>st</sup> Century"*

Lewis Cantley PhD

Professor Systems Biology, Harvard Medical School, Boston, MA, USA

*The Future of the Life Science; From Analytical to Integrated Science"*

Tadamitsu Kishimoto MD. PhD

Professor Collaborative Institutes

Laboratory of Immune Regulation, Osaka University, Osaka, Japan

Inquiry: Institute for Genetic Medicine, HU

TEL: +81-11-7065070 att. M. Noguchi

E-mail: [doublehelix@igm.hokudai.ac.jp](mailto:doublehelix@igm.hokudai.ac.jp)

URL: <http://sw2008.jp/doublehelix>

# Sustainability Weeks 2008 Closing Symposium

**Date:** July 11 (Fri)

**Venue:** Clark Memorial Student Center, HU

**Main Organizer(s):** Committee for Sustainability Weeks 2008, HU

## Summary

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The results of the Sustainability Weeks will be shared, and will include the announcement of a sustainability project plan to be implemented in earnest.

Inquiry: Secretariat for Sustainability Weeks 2008, HU

FAX: +81-(0)11-7064796

E-mail: [office2@sustain.hokudai.ac.jp](mailto:office2@sustain.hokudai.ac.jp)

URL: <http://sw2008.jp/english/weeks/closing>



# Museum Exhibit “Knowledge of University for All the People!”

**Date:** June 15 (Sun) – July 31 (Thu)

**Venue:** The Hokkaido University Museum

**Main Organizer(s):** The Hokkaido University Museum

## Summary

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A variety of research results and materials collected by researchers at Hokkaido University during its 130-year history will be exhibited for the excitement of intelligent of people from around the world.

## Programme

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“Knowledge of University for All the People!” is not a one day event but a programme which is held in the Hokkaido University Museum in the long term with the aim of spreading accumulated knowledge of University beyond a barrier of language.

The Hokkaido University Museum has collection of over 4 million and history of 130 years, and the exhibition of the Museum covers natural science such as plant systematics, archaeology, phycology, mineralogy, systematic entomology, paleontology and the history of the Hokkaido University begging from the Sapporo Agricultural collage, established in 1876.

The English digest of all exhibition is displayed at each corner in the Museum, and all the visitors can take the English leaflet freely. We hope the new style of exhibition will provide a chance of a lot kind of intercrosses.

Inquiry: The Hokkaido University Museum

TEL: +81-(0)11-7062658

E-mail: [museum-jimu@museum.hokudai.ac.jp](mailto:museum-jimu@museum.hokudai.ac.jp)

URL: <http://museum-sv.museum.hokudai.ac.jp>

# Museum Exhibit “Environment and Resources of Lake Toya and Usu Volcano Area”

**Date:** June 17 (Tue) – August 30 (Sat)

**Venue:** The Hokkaido University Museum

**Main Organizer:** The Hokkaido University Museum

**Co-Organizers:** Graduate School of Science, HU; Graduate School of Environmental Science, HU; Field Science Center for Northern Biosphere, HU; Graduate School of Letters, HU; Hokkaido Regional Environment Office, the Ministry of the Environment

## Summary

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This is an exhibition on the relationships between natural disasters and human culture/history at the Lake Toya and the Usu Volcano area featuring the natural environment and diverse resources.

## Programme

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*Exhibition on “Environment and resources of Lake Toya and Usu Volcano area” in the Special Exhibition Room of the University Museum by poster panels and exhibits comprises:*

- 1) Prologue: Natural Environment of Lake Toya and Usu Volcano area
- 2) Development of Human Activity
- 3) Natural Disaster and Environmental Pollution
- 4) Evacuation Life and Symbiosis
- 5) Epilogue: Future Problems on Environment and Resources

*Saturday citizen seminars during the Exhibition:*

08/07/05 Himalayan supraglacial lakes and their outburst floods (GLOF) by K. Chikita (HU)

08/07/12 Past, present and future of environment and resources of lake Toya and surrounding area by H. Ueda (HU)

08/07/19 Mt. Usu and human activities in the Postglacial period by Y. Kosugi (HU)

*A symposium will be held as follows:*

Title: Symbiosis with active volcano

Lecturers: H. Okada (Prof. Emeritus of HU), T. Tanabe (Sobetsu-cho Town Office), S. Mimatsu (Mimatsu-Masao Memorial Museum)

Outdoor activity for children: Talk and practice about the volcanic phenomena using food materials.

① 08/06/28 (Sat), ② 08/07/27 (Sun), ③ 08/08/06 (Wed)

Contact to: The Hokkaido University Museum

TEL: +81-(0)11-7062658

E-mail: museum-jimu@museum.hokudai.ac.jp

URL: <http://museum-sv.museum.hokudai.ac.jp> (information in Japanese only)

## Exhibitions

### **Photo Summit “Planet Aqua” Photographic Exhibition**

**Date:** June 23 (Mon) – July 11 (Fri)

**Venue:** Faulty House “Trillium”, HU

**Main Organizer(s):** Hokkaido University Photography Association, HU

#### **Summary**

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No water, no life. Water is becoming a most precious resource in our century, if the 20<sup>th</sup> century will said to be oil. In this exhibition, the members of the Hokkaido University Photography Association and photographers in Germany will express the various messages regarding the dialogue between life and water through their photographic works on water. The exhibition intends to present the rich and deep expressions of water which is common to all human beings beyond the barrier of the language.

Inquiry: Hokkaido University Photography Association, HU  
TEL: +81-(0)144-332171  
E-mail: photocl@jimuhokudai.ac.jp

### **Efforts on Energy Service Company and Garbage Reduction in Hokkaido University**

**Date:** June 28 (Sat) – 29 (Sun)

**Venue:** Conference Hall, HU

**Main Organizer(s):** Executive Office of Campus and Environment Planning, HU

#### **Summary**

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To promote sustained environmental activities, the ESCO(Energy Service Company) project and garbage reduction campaign being conducted as part of the Hokkaido University Environmental Burden Reduction Measures will be presented using display panels and leaflets.

Inquiry: Executive Office of Campus and Environment Planning, HU  
TEL: +81-(0)11-7063193 or 7062078, FAX: +81-(0)11-7064884  
E-mail: h-kacho@facility.hokudai.ac.jp

## **Citizens Media Center Sapporo**

**Date:** June 30 (Mon) – July 11 (Fri)

**Venue:** Clark Memorial Student Center

**Main Organizer(s):** Citizens Media Center Sapporo Preparatory Working Group

**Co-Organizer(s):** The Research Faculty of Media and Communication, HU

### **Summary**

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The Research Faculty of Media and Communication will establish the Citizens' Media Center, a place for disseminating information on citizens' activities and opinions, in cooperation with the Citizens Media Center Preparatory Working Group.

### **Programme**

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The first Citizens' Media Center ("CMC" in short) project was organized at the 1999 WTO meeting in Seattle, Washington. Since then, CMCs have been established at various key international meetings.

The CMC Sapporo is the first time experience in Japan. CMC will not only transmit information but will also be a space for people from around the world to engage in dialogue.

Before and around the "G8 Hokkaido Toyako Summit" to be held this coming July, groups of people prepare response events to the summit and number of them are to take place here in Sapporo.

Seasonally, journalists from around the world would gather in the city to transmit the reports and the information globally.

The CMC Sapporo wants to provide a place to exchange and output your speech.

Inquiry: Citizens Media Center Sapporo Preparatory Working Group

TEL: +81-(0)11-8077975

E-mail: [IMCsapporo@gmail.com](mailto:IMCsapporo@gmail.com)

URL: <http://imc-sapporo.blogspot.com/>

## Student Initiatives

### **International Student Summit “UNI.SUMMIT2008”**

**Date:** June 28 (Sat) – 29 (Sun)

**Venue:** Faculty of Science Bldg. #5, HU (June 28); Clark Memorial Student Center, HU (June 29)

**Main Organizer(s):** UNI.Summit2008

#### **Summary**

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At the same time as the Toyako Summit, Hokkaido University will hold the International Students' Summit, in which university students from all over Japan will present their activities through exhibition booths and engage in exchanges of opinion.

Inquiry: UNI.Summit2008, HU  
E-mail: unisummit2008@gmail.com  
URL: <http://circle.cc.hokudai.ac.jp/unisummit08/>

### **Team Sapporo Omotenashi**

**Date:** early July – 9 (Wed)

**Venue:** JR Sapporo Station (N6, W4, Sapporo); Odori Park (Odori, W1-W13, Sapporo);  
Tanukikoji Shopping Street(S2, W1-W7, Sapporo)

**Main Organizer(s):** Team Sapporo Omotenashi

#### **Summary**

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Through their hospitality, the university students are planning programs to promote links between visitors and local citizens so that they can experience each other's cultures.

Inquiry: Team Sapporo Omotenashi, HU  
E-mail: omotenashi08@yahoo.co.jp

## **Sustainable Society and Hokkaido: The Changing Environment and People's Lives**

**Date:** July 3 (Thu), 7 (Mon), 10 (Thu), 14 (Mon), 17 (Thu), 24 (Thu), 28 (Mon), 31 (Thu)

**Venue:** Multimedia Education Building, HU

Main Organizer(s): HU

### **Summary**

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How is global warming related to our lives in Hokkaido? We will consider the possibilities of the region of Hokkaido in terms of the relationship between human beings and the environment.

### **Programme**

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1. *July 3(Thu) 18:30~20:30*

“Our life style with global warming” Y.Yamanaka (HU)

2. *July 7(Mon) 18:30~20:30*

“Sustainable region and its autonomy through ecotourism” A.Shikida(HU)

3. *July 10(Thu) 18:30~20:30*

“The precautionary principle in international environmental law:How global community tackles environmental risks?” T.Horiguchi(HU)

4. *July 14(Mon) 18:30~20:30*

“Air pollution and acid rain” S.Ohta(HU)

5. *July 17(Thu) 18:30~20:30*

“Environmental policy to cope with grobal warming” H.Yoshida(HU)

6. *July 24(Thu) 18:30~20:30*

“Towards development of low carbon society–role of forest resources–” H.Kakizawa(HU)

7. *July 28(Mon) 18:30~20:30*

“Coral reefs and earth environmental changes” T.Watanabe(HU)

8. *July 31(Thu) 18:30~20:30*

“Science of the sea of Okhotsk and sea ice” H.Mitudera(HU)

Inquiry: Center for Research and Development in Higher Education, HU

TEL: +81-(0)11-7065252

E-mail: syogai@high.hokudai.ac.jp

URL: <http://www.hokudai.ac.jp/bureau/gakumu/koukai20.html#1>

## Radio Program

# Radio program: “Creating a Sustainable Society”

**Date:** May 31 (Sat), June 21 (Sat), July 19 (Sat)

**Channel:** 76.2MHz FM (Sankakuyama Broadcasting Station, Sapporo)

**Main Organizer(s):** Communicators in Science and Technology Education Program, HU

### Programme

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“Researching South Pole”

Institute of Low Temperature Science (ILTS) Hokkaido University has pioneered the scientific research on snow, ice, and also various phenomena in low temperature. This program particularly features the current research on South Pole.

“Biodiversity and our life”

Hokkaido University has strength in field sciences. This program features results of unique research on animals and plants in Hokkaido. It provides listeners chance to think over the relationship between their everyday life and biodiversity.

“Technology for sustainable society”

For sustainable society, it is necessary to provide basic infrastructure such as water and energy efficiently. This program features technology for sustainable society developed by researchers in Hokkaido University. Listeners will learn how the technology developed and contributing sustainable society.

Inquiry: Communicators in Science and Technology Education Program, HU

TEL: +81-(0)11-7063276

E-mail: [office@costep.hucc.hokudai.ac.jp](mailto:office@costep.hucc.hokudai.ac.jp)

URL: <http://costep.hucc.hokudai.ac.jp/sw2008/>



# **Programs**

**Hokkaido University Sustainability Marathon**

**Symposia, Workshops in Fiscal Year 2008,  
May-June**

# Being Indigenous and Woman: Gender History for Self-Reliance and Borderless Development

Date: May 17 (Sat), 13:00-16:30

Venue: Humanities and Social Sciences Classroom Building, HU

Main Organizer(s): The Gender History Association of Japan

## Summary

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In regard to gender equality, a prerequisite for a sustainable society, the actual situation of women and the problems they face will be discussed. Examples of the Native American and Ainu women will be introduced.

## Programme

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1:00 Presentations

“How the Concept of “Multiple Discrimination” brought Agency and Empowerment to Ainu Women” by Ryoko TAHARA

“From Minority Women to Majority Women: Indigenous Ainu Women and ‘Multiple Discrimination’ in Japan” by Ann-Elise LEWALLEN

“Women and Gender in Native American History” by Madoka SATO

3:15 Discussion

Opening Comment by Yugo ONO

Inquiry: Faculty of Letters, HU

TEL: +81-(0)11-7064085

E-mail: [june@let.hokudai.ac.jp](mailto:june@let.hokudai.ac.jp)

URL: <http://sw2008.jp/marathon/img/gender0517.pdf>

# **Neighbors must share the Environment that links them: Dialogue with the Youth Delegation from Russia**

**Date:** May 22 (Thu), 10:00-12:30

**Venue:** Conference Hall, HU

**Main Organizer(s):** The Japan Russia Youth Exchange Commission; HU

## **Summary**

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Together with 50 elite youths from Russia invited to Japan will attend. Responding to the reports by the leading specialists in environmental research of Japan, the Japanese and Russian participants will discuss the issue.

## **Programme**

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- |             |   |
|-------------|---|
| 10:00-10:30 | Naoto Ebuchi (HU), "Environmental Changes in the Sea of Okhotsk"  |
| 10:35-11:05 | Motoya Saito (Tohoku University, Graduate School of Agricultural Science), "Development for Integrated Field Science at Tohoku Aria in Japan" |
| 11:10-11:40 | Nakamura Masaru (Ryukyu University, Tropical Biosphere Research Center), "Environment and animals in subtropical seacoast of Japan"           |
| 11:40-12:30 | Discussion  |

Inquiry: Slavic Research Center, HU

TEL: +81-(0)11-7062388

E-mail: office2@sustain.hokudai.ac.jp

URL: <http://src-h.slav.hokudai.ac.jp/jp/seminors/archive/conf2008.html#5-22>

# Science Café Events : The Bio-diversity and Sapporo Maruyama Zoo

**Date:** May 24 (Sat), 14:00-15:30

**Venue:** Sapporo55 Building (N5, W5, Sapporo)

**Main Organizer(s):** Communicators in Science and Technology Education Program, HU

## Summary

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A keeper and hawker of Sapporo Maruyama Zoo will elaborate on the behavior of wildlife and people-animal relationship. Also a researcher on wildlife management will talk about the effort to conserve biodiversity. After listening to the talks of the guest speakers, the participants will be invited to discuss how researchers, zoos, and the public can cooperate for the conservation of biodiversity.

## Programme

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### *Guest Speakers:*

Naoya Honda (Keeper and Hawker / Sapporo Maruyama Zoo)

Tsuyoshi Yoshida (Associate Professor of Wildlife Management / Rakuno Gakuen University)

Inquiry: Communicators in Science and Technology Education Program, HU

TEL: +81-(0)11-7063276

E-mail: [office@costep.hucc.hokudai.ac.jp](mailto:office@costep.hucc.hokudai.ac.jp)

URL: <http://costep.hucc.hokudai.ac.jp/sw2008/>

# University-led Ventures Business Hokkaido Forum

**Date:** May 27 (Tue)

**Venue:** Clark Memorial Student Center, HU

**Main Organizer(s):** HU, The Yomiuri Shimbun, Organization of the Hokkaido Bureau of Economy, Trade and Industry

## Summary

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Venture business managers, the Japan Venture Capital Association Chairman and the Yomiuri Shinbun's Science Division Director will discuss the environmental contribution and growth strategy of university-led ventures with unique environmental technologies and business models.

## Programme

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### *Keynote Speech*

“Venture Spirit”

Kozo Hiramatsu, Chairman and Chief Executive Officer, Kozocom,inc

### *Panel Discussion*

“Creating University-led Ventures Business of Environment”

### *Chairperson:*

Yasuyuki Hamada, Professor, HU

### *Commentator:*

Kazuhiko Tokita Chairman, Japan Venture Capital Association

### *Panelists:*

Shigeyuki Koide, Science Division Director, Yomiuri Shinbun

Akio Soma, Senior Manager ,Mizuho Information & Research Institute, Inc.

Moriyoshi Shitara, President, HUENS Co. LTD.

Kohe Wakabayashi, President, Sun Care Fuels Co.

Inquiry: Creative Research Initiative “Sousei”, HU

TEL: +81-(0)11-7062959

E-mail: k-sato@cast.hokudai.ac.jp

URL: <http://www.hkd.meti.go.jp/hokid/bmcontest2/index.htm>

# **JST Presto Symposium on Mathematical Sciences towards Environmental Problems**

**Date:** June 11 (Wed) – 13 (Fri)

**Venue:** Graduate School of Science, HU

**Main Organizer(s):** JST Presto Symposium, Organizing Committee

**Co-Organizer(s):** Graduate School of Science (Department of Mathematics), HU  
Research Center for Integrative Mathematics (RCIM), HU,  
Global Eco-Risk Management from Asian Viewpoints, Yokohama National University

**Supported by:** Japan Science and Technology Agency (JST)

## **Summary**

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Environmental problems are among the most important scientific challenges in the 21st century. They are key themes that will be discussed in the G8 Hokkaido Toyako Summit held at Hokkaido, Japan in July, 2008. A number of researchers from various fields of sciences are now dealing with the problems intensively in recent years.

While mathematicians tend to pay less attention to such real-world problems, mathematical tools can be potentially applied towards environmental problems due to the intrinsic universality. The aim of this symposium is overviewing how mathematics can contribute to these problems by inviting distinguished researchers from wide range of disciplines related to environmental problems.

The topic are selected from various research fields; Global climate change, civil engineering, environmental hydraulics, environmental assessments, dermatology and Ultra violet, statistical treatment of infectious diseases and so on.

We are organizing a Poster Session where participants display posters showing their recent scientific research developments on environmental problems.

## **Programme (List of Invited Speakers) For the latest information, please check the webpage.**

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Kiminori Itoh (Yokohama National University)

Koji Kurihara (Okayama University)

Marco Picasso (IACS/Switzerland)

Axel Rossberg (IIASA/Austria)

Tetsuro Tsujimoto (Nagoya University)

Inquiry: Graduate School of Science, HU TEL: +81-(0)11-7064671 E-mail: cri@math.sci.hokudai.ac.jp URL: <a href="http://www.math.sci.hokudai.ac.jp/sympo/080611/index.html">http://www.math.sci.hokudai.ac.jp/sympo/080611/index.html</a>
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# Environmental Forum in Lake Toya

**Date:** June 14 (Sat), 13:00-17:00

**Venue:** Toya sogo center (Toyako-cho [Toyako town])

Main Organizer(s): Field Science for Northern Biosphere, HU

## Summary

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Toyako and its environs have been affected by natural disasters caused by volcanic eruptions as well as human impact resulting from hydraulic power station construction. Representatives of the Toyako Town Office, the Hokkaido Government, the Ministry of the Environment and universities will discuss the past, present and future of the area's environment.

## Programme

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### *Symposium on Lake Toya Environment*

1. Toya Lake and surrounding environments: Effects of natural and artificial disturbances.  
Hiroshi Ueda (Field Science Center for Northern Biosphere, Hokkaido University)
2. Mt.Usu and human activities in the postglacial period  
Yasushi Kosugi (Graduated School of Letters, Hokkaido University)
3. Thermal environment of Lake Toya under global warming  
Shin-ichi Urano (Graduate School of Agriculture, Hokkaido University)
4. Physical and chemical properties of Lake Toya: Relation to the volcanic activity of Mt. Usu  
Kazuhisa A. Chikita (Department of Natural History Sciences, Faculty of Science, Hokkaido University)
5. Population dynamics of phyto- and zooplankton in Lake Toya  
Takashi Denboh (Field Science Center for Northern Biosphere, Hokkaido University)
6. Population dynamics of sockeye salmon in Lake Toya  
Takashi Matsuishi (Graduate School of Fisheries Sciences, Hokkaido University)
7. Vegetation changes on the volcano Mount Usu  
Shiro Tsuyuzaki (Graduate School of Environmental Earth Science, Hokkaido University)
8. Population fluctuation of sika deer on Nakanoshima Island of Lake Toya  
Koichi Kaji (Tokyo University of Agriculture and Technology, Institute of Symbiotic Science and Technology)

### *Panel Discussion on Lake Toya Environment and Resources in the Past, Present, and Future*

Eight symposists

Mr. Kenji Ito (Toyako Town)

Mr. Yasuhiro Toyota (Iburi Forestry Center, Hokkaido Government)

Mr. Shinichi Sakamoto (Hokkaido Office, Ministry of the Environment)

Inquiry: Field Science for Northern Biosphere, HU

TEL: +81-(0)11-7062598

E-mail: [hueda@fsc.hokudai.ac.jp](mailto:hueda@fsc.hokudai.ac.jp)



# Human Dimensions of Invasive Alien Species Issues

**Date:** June 15 (Sun), 10:00-17:00

**Venue:** Conference Hall, HU

**Main Organizer(s):** Faculty of Letters, HU

## Summary

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Social consensus building, an essential part of addressing major invasive alien species issues caused by such as stag beetles and raccoons, as well as future measures will be discussed from the viewpoints of humanities and social science.

## Programme

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“Do Japanese people loving stag beetles eradicate them? -from the viewpoint of pet management-”

Koichi Goka (National Institute of Environmental Studies)

“Economical validation of raccoon countermeasures in Hokkaido”

Koji Kotani (International University of Japan)

“Public awareness and enlightenment activities for invasive alien species issues”

Hidenori Kusakari (WWFJapan)

“Practical approach by company and proposal for cooperation on invasive alien species issues ”

Hiromi Araki (Aleph Inc.)

“Invasive alien species management by local community -in the case of coypu-”

Shirow Tatsuzawa (HU)

“Toward deep understanding of raccoon countermeasures”

Tohru Ikeda (HU)

Commentator:

Nobuo Kurata (HU)

Taisuke Miyauchi (HU)

Inquiry: Faculty of Letters, HU

TEL: +81-(0)11-7064163

E-mail: [tikeda@let.hokudai.ac.jp](mailto:tikeda@let.hokudai.ac.jp)

URL: <http://www.hokudai.ac.jp/letters/>

# International Symposium on “Nanotoxicology Assessment and Biomedical, Environmental Application of Fine Particles and Nanotubes” (ISNT2008)

Date: June 16 (Mon) – 17 (Tue)

Venue: Conference Hall, HU

Main Organizer(s): Committee of “Nanotoxicology Assessment and Biomedical Application of Fine Particles and Nanotubes”

## Summary

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(1) The biomedical and environmental application of nanotechnology, (2) the biological implications and safety of applying nanotechnologies (such as carbon nanotubes, photocatalysts and biomimetic nanocomposites) to biomedicine on levels of DNA, cells and tissues will be discussed.

## Programme

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Special Lecture(S), Young Researcher Travel Awardee’s Talk (Y) and others (O)

(O1) *“Nanotechnology Policy on Health and Environment in Japan: An International Comparison”*

Masami Matsuda (University of Shizuoka)

(Y1) *“Identification and Assessment of the Effects of Engineered Nanoparticles on Brain Cells”*

Maria Iwe (Technical University Dresden, Germany)

(S1) *“Nanomaterial Applications of Functionalized Carbon Nanotubes”*

Alberto Bianco (CNRS, Strasbourg, France)

(Y2) *“Electrode Arrays of Carbon Nanofibers for Biosensing at the Molecular and Cellular Level”*

Jessica Koehne (NASA Ames Research Center, USA)

(Y3) *“Designer Functionalized Self-assembling Peptide Nanofiber Scaffolds for the Growth, Migration, and Tubulogenesis of Human Umbilical Vein Endothelial Cells”*

Xiumei Wang (Tsinghua University, China)

(Y4) *“Biomimetic Nerve Guidance Grafts: Synergism of Physical Nano-topography and Biochemical Guidance Cues”*

Hui Shan Koh (National University of Singapore, Singapore)

(Y5) *“Characterization of Electrical Properties of HL-60 Cell Membrane by Rotating of Cells Uptake of Nanoparticles in A DEP Chip”*

Cheng-Hsin Chuang (Southern Taiwan University, Taiwan)

(S2) *“Magnetic Drug Targeting”*

Urs Hafeli (University of British Columbia, Canada)

(Y6) *“Calcium Phosphate Nanoparticles for Cell Transfection”*

Ganna Kovtun (University of Duisburg-Essen, Germany)

(Y7) *“Injectable Biphasic Calcium Phosphate Bioceramic: the HYDROS? Concept”*

Serge Baroth (University of Nantes, France)

(Y8) *“Fabrication and influence of heat treatment on nano-structured titanium oxide”*

Dr. Il Song Park (Chonbuk National University, Korea)

(S3) *“Novel Preparation Method of Environmental Catalysts and their Application”*

Atsushi Muramatsu (Tohoku University)

Inquiry: Graduate School of Dental Medicine, HU

TEL: +81-(0)11-7064251

E-mail: nano@den.hokudai.ac.jp

URL: <http://sw2008.jp/nano>

# **Changing polar regions - research frontier and its education -**

**Date:** June 19 (Thu), 15:30-17:00

**Venue:** Sapporo Dome (Integrated Exhibition of the Environment 2008)

**Main Organizer(s):** International Antarctic Institute Project

## **Summary**

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Researchers on cold areas covered with snow and ice, such as the North and South Poles, will shed light on the global environmental changes currently taking place, their possible causes and future problems through visual presentation.

## **Programme**

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“Role of the polar oceans in the global climate system”

M. Wakatsuchi (HU)

“International Antarctic Institute: Education program for polar scientists in the next generation”

S. Sugiyama (HU)

Inquiry: Institute of Low Temperature Science, HU  
TEL: +81-(0)11-7067142  
E-mail: [iai@lowtem.hokudai.ac.jp](mailto:iai@lowtem.hokudai.ac.jp)  
URL: <http://www.earth.ees.hokudai.ac.jp/IAI/>

# Hokkaido and Far-east Russia Environment Forum for Sustainable Development

**Date:** June 19 (Thu), 13:00-17:00

**Venue:** Sapporo Dome (Integrated Exhibition of the Environment 2008)

**Main Organizer(s):** HU; Hokkaido Government; Hokkaido Economic Federation; Hokkaido Bureau, Ministry of Land, Infrastructure, Transport and Tourism

## Summary

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Tackling environmental questions concerning the Okhotsk Sea and its shores requires international and interdisciplinary cooperation. Our forum will integrate not only nature and social science scholars, but those engaged in administration from Russia's Far East and Hokkaido.

## Programme

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### *Opening Remarks*

Takeo HONDOH (HU)

### *Session 1. Scientists' Warnings*

Kondrat'eva L.M. (Institute of Water and Ecology Problems, FEB, RAS, Khabarovsk)

Keiichiro OHSHIMA (HU)

Yasunori SAKURAI (HU)

Hitoshi SHOJI (Kitami Institute of Technology)

### *Session 2. Environmental Administration and Nature Exploitation: What has been done and what to do next?*

Tarasenko Y.G. (Chief Adviser of ecological programs, examination and radiation safety Section, Environmental Preservation Department of Primorsky krai)

Andrienko S.N. (Depute Minister of Natural Resources of Khabarovsk Krai)

Tarabarova N.N. (Depute chairman of Sakhalin Oblast's Committee of Natural Resources and Environmental Preservation, Head of Nature Management and Environmental Preservation Department)

Liu Xu (HU)

Hiroshi ISHII (Hokkaido Institute of Environmental Sciences)

### *Closing Remarks*

Osamu MATSUOKA (Hokkaido Institute of Environmental Sciences)

Inquiry: Slavic Research Center, HU  
TEL: +81-(0)11-7062093  
E-mail: office2@sustain.hokudai.ac.jp  
URL: <http://sw2008.jp/forum>

# Environmental Leadership Initiatives for Asian Sustainability (ELIAS)

**Date:** June 21 (Sat), 13:00-16:30

**Venue:** Sapporo Dome (Integrated Exhibition of the Environment 2008)

**Main Organizer(s):** Ministry of the Environment; United Nations University -Institute  
of Advanced Studies(UNU-IAS); HU

## Summary

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Representatives of higher education institutions promoting Education and Research for Sustainable Development in the Asia-Pacific Region will share their knowledge of curricula and teaching materials. They will also exchange views regarding the potential for human resource development through cooperation by various stakeholders.

## Programme

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### **[1<sup>st</sup> Round]** at Venue 1

13:00~ Opening remarks

Session1: Environmental Leadership Initiatives for Asian Sustainability

Session2: Asian Universities' Educational Activities on SD

Session3: Japanese Universities' Educational Activities on SD

Session4: Discussion

Collaborations to foster human resources for Sustainable Asia

16:30 Closing remarks

### **[2<sup>nd</sup> Round]** at Venue 2

18:00-18:45 Japanese Universities' Educational Activities on SD

Inquiry: Hokkaido University Secretariat for Sustainability Weeks 2008

TEL: +81-(0)11-7062093, FAX: +81-(0)11-7064796

E-mail: office2@sustain.hokudai.ac.jp

URL: <http://sw2008.jp/english/weeks/ELIAS/>

Secretariat Office

Sustainability Weeks 2008 -G8 Summit Round-  
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E-mail [g8kikaku@general.hokudai.ac.jp](mailto:g8kikaku@general.hokudai.ac.jp)  
URL <http://sw2008.jp>

### **3. Report of the Symposium**





HOKKAIDO  
UNIVERSITY

# Hokkaido University Sustainability Weeks 2008 -G8 Summit Round-

**Brief Overview - Digest -**





## “Sustainability Weeks 2008 –G8 Summit Round–”

Sustainability Weeks 2008 was a project by Hokkaido University (HU) to offer greater support for research and education on sustainability. It was essentially a week devoted to promoting research efforts and educational activities with the goal of creating a sustainable society.

In concordance with the G8 Hokkaido Toyako Summit, a concentrated program was held consisting of international symposia focused on the environment, health, and poverty as well as public lectures.

Many people working and studying to make sustainable societies a reality gathered from all over the world to share this opportunity to exchange knowledge.

### Sustainability Weeks 2008 by the Numbers (April 1 – July 11)

Number of Events Held During Sustainability Weeks

**50**

Number of Projects by Discipline (\* Some projects are counted in multiple disciplines)



Number of Speakers

**295**

Hokkaido University 82  
Others 213 (Including 103 of overseas visitors)

Number of Symposia and Project Lecture Participants

**6,399**

Hokkaido University 2,553  
Others 3,846 (Including 557 of overseas visitors)

Number of Museum Visitors

**20,037**

\* June 15–August 30 (During special exhibits)

Number of Website Visitors

**27,812**

\* Sustainability Weeks 2008 Website  
URL: <http://www.sustain.hokudai.ac.jp/sw2008/index.html>

Number of Newspaper Articles (Except for advertisement)

**142**

Published in 5 major newspapers in Japan  
The Yomiuri Shimbun, The Asahi Shimbun, The Mainichi Newspapers, Nikkei Inc., The Hokkaido Shimbun Press (September 2007– July 2008)

#### Public Relations

##### PR Tool



##### News Paper Ad

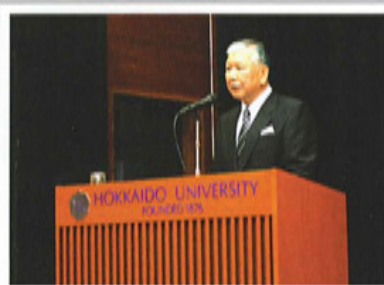






## June 23, Sustainability Weeks 2008 Opening Symposium "Toward a Sustainable Low Carbon Society"

As the opening event for the 3 week long program an international symposium "Toward a Sustainable Low Carbon Society" was held. Japanese and international scholars at the forefront of their fields presented the latest results of their research from a variety of disciplinary perspectives and participated in lively debates on our scientific understanding of global warming, the social and technological innovations needed to address, and the prevention of life-threatening communicable diseases arising from it.



President Saeki delivers a speech



The venue was full of audience



## Museum Exhibits

Sustainability Weeks 2008 included two special exhibitions "Knowledge of University for All the People" and "Environment & Resources of Lake Toya & Usu Volcano Area". These were attended by more than 20,000 local and international visitors of all ages.



Exhibit "Environment and Resources of Lake Toya and Usu Volcano Area"



Visitors from all over the world



## Public Lectures

The newest researches being done at Hokkaido University were disclosed to the ordinary citizens and high school students through many public lectures, including a science cafe opened in the lobby of a popular bookshop near Sapporo Station.



Science Cafe



Children get in a fuel cell car at a citizens' lecture





## June 29 - July 1, G8 University Summit

Hokkaido University hosted what was the first G8 University Summit to have the participation of 140 university presidents, including those from the 35 United Nations Universities as well as others from universities in 14 major countries. The meeting focused on the theme of "Global Sustainability and the Role of Universities", and produced the "Sapporo Sustainability Declaration (SSD)".

This declaration was later delivered to Prime Minister Fukuda.



Delivery of the SSD to Prime Minister Fukuda



Plenary Session



## July 8, Special Lecture by UN Secretary-General Ban Ki-Moon

Hokkaido University welcomed the Secretary-General of the United Nations Ban Ki-Moon, who gave a special lecture entitled "Challenge to Global Food Crisis: Discussion between the Secretary General of the United Nations & Hokudai Students." In his talk, the Secretary-General Ban stressed the severity of the food problems currently facing international society, and emphasized the need for the leadership of Japan and other developed nations in supporting developing countries to increase food aid, raise agricultural production, and create stable food markets.

In the discussion following his talk, the Secretary-General consideredly answered the questions asked enthusiastically by students.



Keynote speech from UN Secretary-General Ban Ki-Moon



Students enthusiastically pose questions



## Student Events

Students were the leaders in events such as "Uni.Summit 2008", which brought together student groups interested in the environment, building new things and ideas, and communication, and "Team Sapporo Omotenashi", which exposed visitors to Sapporo to the city's unique charms.



Uni.Summit 2008



Team Sapporo Omotenashi



## Citizens Media Center Sapporo

Hokkaido University provided space during the summit to the G8 Hokkaido Toyako Citizens Media Center Sapporo for independent media providers creating content from unique perspectives. Citizens' media gathered from all over Japan and the world to report the news.



Registration of Citizens Media Center



The Venue of press conference



# Activities in Sustainability Weeks 2008

※ S : Symposium M : Museum Exhibit P : Public Lecture O : Other Event

No.	Date	Div	Title of the event	Field	Joint Hosting
1	May 17	S	Being Indigenous & Woman :Gender History for Self-Reliance and Borderless Development		The Gender History Association of Japan
2	May 22	S	Neighbors must share the Environment that links them: Dialogue with the Youth Delegation from Russia		Japan Russia Youth Exchange Commission
3	May 24	P	Science Cafe Event : The Bio-diversity and Sapporo Maruyama Zoo		
4	May 27	S	University-led Ventures Business Hokkaido Forum		The Yomiuri Shimbun, Organization of the Hokkaido Bureau of Economy, Trade and Industry
5	Jun 6	P	Sustainability Weeks 2008 - Pre Event "What We Can Do for the Sustainable Future"		The Asahi Shimbun Company
6	Jun 11-13	S	JST Presto Symposium on Mathematical Sciences towards Environmental Problems		JST Presto Project
7	Jun 14	S	Environmental Forum in Lake Toya		
8	Jun 15	S	Human Dimensions of Invasive Alien Species Issues		
9	Jun 16-17	S	Int'l Symposium on "Nanotoxicology Assessment & Biomedical, Environmental Application of Fine Particles & Nanotubes" (ISNT2008)		Committee of "Nanotoxicology Assessment and Biomedical Application of Fine Particles and Nanotubes"
10	Jun 19	P	Changing Polar Regions - Research Frontier & Its Education -		International Antarctic Institute Project
11	Jun 19	S	Hokkaido & Far-east Russia Environment Forum for Sustainable Development		Hokkaido Government, Hokkaido Economic Federation, Hokkaido Regional Development Bureau, The Hokkaido Shimbun Press
12	Jun 21	S	Environmental Leadership Initiative for Asian Sustainability (ELIAS)		Ministry of the Environment of Japan, UNU-IAS
13	Jun 23	S	Sustainability Weeks 2008 Opening Symposium "Toward a Sustainable Low Carbon Society"		
14	Jun 24	S	How to make Sustainable Low Carbon Society - Synergy of Social & Engineering System -		
15	Jun 24	S	Drastic Change in the Earth System during Global Warming		
16	Jun 24	S	2008 Int'l Workshop on Multi-Media Signal Processing		
17	Jun 25	S	Global Warming - Messages from Scientists		Science Council of Japan
18	Jun 25	S	Dynamics and Pathways of Land Systems Change		
19	Jun 25	S	Environmental Monitoring for Conservation of Ecosystems		
20	Jun 26-27	S	Northeast Asia in the Cold War: New Evidence and Perspectives		
21	Jun 27	S	Neo-Science of Natural History : Origin & Evolution of Natural Diversity		
22	Jun 28	P	Fuel Cell Experiments - Environment-Friendly Energy-		
23	Jun 28	S	Sustainability Sciences for Protecting Aquatic Ecosystem & Marine Food		Department of Fisheries and Forestry, Hokkaido Government
24	Jun 28	P	Science Cafe Event"Outreach for the Most Recent Information on Global Warming"		
25	Jun 28-29	O	Efforts on Energy Service Company & Garbage Reduction in Hokkaido University		City of Sapporo, Hokkaido Electric Power Co., Inc. Hokuden- Kogyo CO.,LTD
26	Jun 28-29	S	Taxonomy Returns! -For the Better Understanding of our Mother Nature-		
27	Jun 29	S	School Education for Establishing Sustainable Society in Hokkaido		
28	Jun 29	S	The Present & Future of Ainu Studies, Part I		
29	Jun 29-Jul 1	O	G8 University Summit		The G8 University Summit Organizing Committee
30	Jul 2	S	Toward Stronger Ties between Agricultural and Medical Sciences		
31	Jul 2-6	S	Int'l Conference on Sustainable Agriculture & Environment		The Integrated Research System for Sustainability Science (IR3S)
32	Jul 3-4	S	Environment & Health; Human Life in Changing Global Environments		
33	Jul 5	S	Symposium on Sustainable Management for Culture and Communities		Japan Association for Cultural Economics
34	Jul 5	P	Let' s talk about "Health of the Earth & People"		The Hokkaido Shimbun Press
35	Jul 5-7	S	Int'l Symposium: Sentinel Earth, Detection of Environmental Change		University of Alaska, Palangkaraya University,JAXA, RESTEC, Hokkaido Branch of The Asahi Shimbun Company, Hokkaido Federation of Land Improvement Association,JAL, Sapporo International Communication Plaza Foundation, Global COE Program "Center for Next-Generation Information Technology based on Knowledge Discovery and Knowledge Federation", JR Hokkaido
36	Jul 6	S	Int'l Symposium on Sanitation in Hokkaido University		
37	Jul 7	S	Catalysis Leading to a Sustainable Society		
38	Jul 8	O	Challenge to Global Food Crisis-Discussion between the Secretary-General of the United Nations & Hokudai Students-		
39	Jul 9	S	Int'l Symposium "Peace, Reconciliation & Civil Society: Toward a Sustainable Peace in East Asia & Europe"		Center for German and European Studies, The University of Tokyo
40	Jul 10-12	S	Sustainable Should Be Female Scientists' Career! Environments for Gender Equality & Work-Life Balance in Science		
41	Jul 11	S	Beyond the Double Helix ~Life Science for the Disease Free Society~		
42	Jul 11	S	Sustainability Weeks 2008 Closing Symposium		
43	Jun 15-Jul 31	M	Museum Exhibit "Knowledge of University for All the People!"		
44	Jun 17-Aug 30	M	Museum Exhibit "Environment and Resources of Lake Toya & Usu Volcano Area"		
45	Jun 23-Jul 11	O	Photo Summit "Planet Aqua" Photographic Exhibition		Citizens Media Center Sapporo Preparatory Working Group
46	Jun 30-Jul 11	O	Citizens Media Center Sapporo		
47	Jul 3-31	P	Sustainable Society & Hokkaido: The Changing Environment & People's Lives		
48	Jun 28-29	O	International Student Summit "UNI.SUMMIT2008"		
49	Jun 26 - Jul 9	O	Team Sapporo Omotenashi		
50	May31,Jun21,Jul19	O	Radio program: "Creating a Sustainable Society"		



## 1. Communication Through the Hokudai Network

Hokkaido University will transmit and receive information via the website "Hokudai Network for Global Sustainability" about activities by researchers and practitioners of higher education around the world who are contributing the global environment and sustainable societies.

URL;<http://www.sustain.hokudai.ac.jp>



Website "Hokudai Network for Global Sustainability"

## 2. Sustainability Weeks 2009

Sustainability Weeks began as a small event in 2007, and grew in 2008 to become a success.

Hokkaido University will continuously hold Sustainability Weeks in 2009.

International symposia and public lectures are planned so that past participants can come again and offer new insights, while new participants will have opportunities to share information and debate with others. Please see the website for the most up-to-date information.

URL;<http://www.sustain.hokudai.ac.jp>

## 3. The Center for Sustainability Science, Hokkaido University

Hokkaido University opened "The Center for Sustainability Science" in April 2008. It is a place where the results of education and research on achieving sustainable societies in areas as diverse as the human and natural sciences will come together in graduate courses where people will think about the problems facing modern society.

The center's educational programs will feedback into its research in order to help create the new discipline of "Sustainability Science."

URL;<http://www.census.hokudai.ac.jp/greetings.html>

## 4. Contributions to ProSPER.Net

Nineteen institutes of higher education working in the research and teaching of sustainable development in the Asia-Pacific region met together at Hokkaido University in June 2008, and established "Promotion of Sustainability in Postgraduate Education and Research Network (ProSPER.Net)."

Hokkaido University is participating as both a member and trustee, and is working with the United Nations University Institute of Advanced Studies, which assumes the secretariat of ProSPER.Net, and other member universities to promote research and graduate education.



ProSPER.Net Launching Ceremony

## **4. Websites of the Events and Activities**

## List of Events and Activities in "Sustainability Weeks 2008"

2008

Date	June 23, 2008 (9:00-18:00) <b>Finished</b>
Title	Sustainability Weeks 2008 Opening Symposium "Toward a Sustainable Low Carbon Society"
Outline	Officially opens Sustainability Weeks 2008, which will discuss the topic of what we can do now for future generations from various perspectives such as those of natural science, social reform and technological innovation.
Organizer	Hokkaido University
Venue	Hokkaido University Conference Hall
Registration	Required (Charge-free)
URL	<a href="http://sustain.oia.hokudai.ac.jp/sw2008/weeks/opening/">http://sustain.oia.hokudai.ac.jp/sw2008/weeks/opening/</a>
Inquiry	Phone: +81-(0)11-706-8031, <a href="mailto:sw2@oia.hokudai.ac.jp">sw2@oia.hokudai.ac.jp</a>
Language	English
Intended Audience	Researchers, College Students
Speaker's Slide	<a href="#">Download</a> speaker's slides(Total 9 files) (Link to a page in HUSCAP) <a href="http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34472?locale=en">http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34472?locale=en</a>

Date	June 24, 2008 (9:00-18:00) <b>Finished</b>
Title	How to make Sustainable Low Carbon Society –Synergy of Social and Engineering System–
Outline	The question of how to produce synergistic effects from the science of public policy, which seeks to reorganize social systems, and engineering, which pursues technical solutions, will be discussed with the aim of accelerating a shift toward a sustainable low-carbon society.
Organizer	Hokkaido University Initiative for Sustainable Development
Venue	Hokkaido University Conference Hall
Registration	Required (Charge-free)
URL	<a href="http://sustain.oia.hokudai.ac.jp/sw2008/weeks/carbon/">http://sustain.oia.hokudai.ac.jp/sw2008/weeks/carbon/</a>
Inquiry	Phone: +81-(0)11-706-8031, <a href="mailto:sw2@oia.hokudai.ac.jp">sw2@oia.hokudai.ac.jp</a>
Language	English
Intended Audience	Researchers, College Students
Speaker's Slide	<a href="#">Download</a> speaker's slides(Total 5 files) (Link to a page in HUSCAP) <a href="http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34483?locale=en">http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34483?locale=en</a>



Date	June 24, 2008 (9:30-17:30) <b>Finished</b>
Title	Drastic Change in the Earth System during Global Warming
Outline	Young and established researchers will clarify global warming through discussion in order to overcome the uncertainties included in the IPCC Fourth Assessment Report for more accurate prediction of temperatures, sea level rise and sea ice disappearance.
Organizer	Initiative for Sustainable Development, Faculty of Environmental Earth Science, Institute of Low Temperature Science
Venue	Hokkaido University Conference Hall
Registration	Required (Charge-free)
URL	<a href="http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm">http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm</a>
Inquiry	Phone: +81-(0)11-706-8031, <a href="mailto:sw2@oia.hokudai.ac.jp">sw2@oia.hokudai.ac.jp</a>
Language	English
Intended Audience	Researchers, College Students

#### Speaker's Slide

1. "Clarify causes and magnitude of sea level rise"

Speaker: Dr. John Church <http://hdl.handle.net/2115/34391>

Moderator: Prof. Motoyoshi Ikeda <http://hdl.handle.net/2115/34390>

2. "Deterioration of Greenland and Antarctic ice sheets plus glaciers and ice caps"

Speaker: Prof. Atsumu Ohmura <http://hdl.handle.net/2115/34392>

Moderator: Prof. Ralf Greve <http://hdl.handle.net/2115/34393>

3. "When will summer Arctic sea ice disappear?"

Speaker: Prof. Wieslaw Maslowski <http://hdl.handle.net/2115/34395>

Moderator: Prof. Motoyoshi Ikeda <http://hdl.handle.net/2115/34394>

4. "Carbon uptake or emission by terrestrial ecosystem"

Speaker: Dr. Akihiko Itoh <http://hdl.handle.net/2115/34396>

Moderator: Prof. Toshihiko Hara <http://hdl.handle.net/2115/34397>

5. "Marine ecosystem change resulting in carbon emission"

Speaker: Dr. Michio Kawamiya <http://hdl.handle.net/2115/34398>

Moderator: Assoc. Prof. Yutaka Watanabe <http://hdl.handle.net/2115/34399>

\*Link to a page in HUSCAP

Date	June 24, 2008 (10:00-17:00) <b>Finished</b>
Title	2008 Int'l Workshop on Multi-Media Signal Processing
Outline	An international workshop on the realization of high-quality, high-efficiency multimedia information and communication based on broadband networks, high-speed wireless LAN, mobile systems (ultra-low power systems), etc.
Organizer	Center for Next-Generation Information Technology based on Knowledge Discovery and Knowledge Federation
Venue	Hokkaido University Graduate School of Information Science & Technology
Registration	Not required (Charge-free)
URL	<a href="http://www.gcoe.ist.hokudai.ac.jp/index.php?ml_lang=en">http://www.gcoe.ist.hokudai.ac.jp/index.php?ml_lang=en</a>
Inquiry	Phone: +81-(0)11-706-6489, <a href="mailto:miya@ist.hokudai.ac.jp">miya@ist.hokudai.ac.jp</a>
Language	English
Intended Audience	Researchers, College Students

Date June 25, 2008 (13:30-16:30) **Finished**

Title Global Warming - Messages from Scientists

#### Outline

The Japanese science community will report on urgent issues caused by global warming, and discuss with citizens how such problems should be dealt with.

Organizer Science Council of Japan, Hokkaido University

Venue Hokkaido University Conference Hall

Registration Required (Charge-free)

URL <http://www.scj.go.jp/ja/event> (Japanese)

Inquiry FAX: +81-(0)3-3403-6224, [p228@scj.go.jp](mailto:p228@scj.go.jp)

#### Handouts

- Abstracts

<http://hdl.handle.net/2115/33919> (Japanese)

- Seita EMORI, National Institute for Environmental Studies

<http://hdl.handle.net/2115/33921> (Japanese)

• Yasushi HONDA, Graduate School of Comprehensive Human Sciences, University of Tsukuba

<http://hdl.handle.net/2115/33922> (Japanese)

- Fumikazu YOSHIDA, The Graduate School of Public Policy, Hokkaido University

<http://hdl.handle.net/2115/33924> (Japanese)

\*Links to pages in HUSCAP

Language Japanese, English

Intended Audience General Public

Date	June 25, 2008 (9:00-17:00) <b>Finished</b>
Title	Dynamics and Pathways of Land System Change
Outline	Efforts will be made to predict the future of the terrestrial environment and to avoid environmental degradation by clarifying effects of different types of land use on elements of the terrestrial environment such as soil, ground, water and ecosystems.
Organizer	Research Faculty of Environmental Earth Science, Sustainability Governance Project(SGP)
Venue	Century Royal Hotel (North5 West5, Sapporo)
Registration	Not required (Charge-free)
URL	<a href="http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm">http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm</a>
Inquiry	Phone:+81-(0)11-7062260, kohyama@ees.hokudai.ac.jp
Language	English
Intended Audience	Researchers, College Students

Date	June 25, 2008 (12:00-17:30) <b>Finished</b>
Title	Environmental Monitoring for Conservation of Ecosystems
Outline	To help understand the current situation and mechanisms of abnormal weather conditions observed globally. The latest results of atmospheric, meteorological and hydrological observation and research at the South Pole as well as in tropical and temperate zones will be reported.
Organizer	Research Faculty of Environmental Earth Science
Venue	Hokkaido University Conference Hall
Registration	Not required (Charge-free)
URL	<a href="http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm">http://www.ees.hokudai.ac.jp/coe21/dc2008/index.htm</a>
Inquiry	TEL:+81-(0)11-706-2200, iwakuma@ees.hokudai.ac.jp
Language	English
Intended Audience	General Public, Researchers, College Students
Abstracts	<a href="http://hdl.handle.net/2115/34126">http://hdl.handle.net/2115/34126</a> (Link to a page in HUSCAP)

**Date** June 28, 2008 (9:00-17:00) **Finished**

**Title** Sustainability Sciences for Protecting Aquatic Ecosystem & Marine Food

**Outline**

Human beings have no other choice to lean on marine food resource, because the human population is growing faster than terrestrial food production. In this forum, a new sustainable marine resource management based on the ecosystem approach will be proposed for children in the future.

**Organizer** Graduate School of Fisheries Science

**Venue** Hokkaido University Conference Hall

**Registration** Not required (Charge-free)

**URL** <http://sustain.oia.hokudai.ac.jp/sw2008/fish/>

**Inquiry** TEL: +81-(0)138-40-5605, FAX: +81-(0)138-40-5605

**Language** Japanese

**Intended Audience** General Public, College Students, High School Students

**Abstracts** <http://hdl.handle.net/2115/34128> (Link to a page in HUSCAP)

**Date** June 28, 2008 (14:00-15:30) **Finished**

**Title** Science Cafe Event "Outreach for the Most Recent Information on Global Warming"

**Outline**

Human beings have no other choice to lean on marine food resource, because the human population is growing faster than terrestrial food production. In this forum, a new sustainable marine resource management based on the ecosystem approach will be proposed for children in the future.

**Organizer**

Graduate School of Environmental Science, Institute of Low Temperature Science, Communicators in Science and Technology Education Program (CoSTEP)

**Venue** Sapporo 55 building 1st floor (North5, West5, Sapporo)

**URL** <http://costep.hucc.hokudai.ac.jp/sw2008>

**Inquiry** Phone: +81-(0)11-706-3276, [office@costep.hucc.hokudai.ac.jp](mailto:office@costep.hucc.hokudai.ac.jp)

**Language** Japanese

**Intended Audience** General Public, College Students, High School Students

Date	June 28-29, 2008 (9:00-17:00) <b>Finished</b>
Title	Taxonomy Returns! -For the Better Understanding of our Mother Nature-
Outline	Although biodiversity is an important area of research worldwide, researchers cannot answer the simple question of how diverse life on Earth is. The present situation in research circles will be analyzed, and countermeasures will be considered.
Organizer	The Hokkaido University Museum, Graduate School of Science
Venue	The Hokkaido University Museum
Registration	Required (Charge-free)
URL	<a href="http://museum-sv.museum.hokudai.ac.jp/activity/symposium/symposium23/">http://museum-sv.museum.hokudai.ac.jp/activity/symposium/symposium23/</a>
Inquiry	Phone: +81-(0)11-706-2750, <a href="mailto:shunfm@sci.hokudai.ac.jp">shunfm@sci.hokudai.ac.jp</a>
Language	English
Intended Audience	Researchers, College Students

Date	June 28-29, 2008 <b>Finished</b>
Title	International Student Summit "UNI. SUMMIT2008"
Outline	At the same time as the Toyako Summit, Hokkaido University will hold the International Students' Summit, in which university students from all over Japan will present their activities through exhibition booths and engage in exchanges of opinion.
Venue	Jun 28: Faculty of Science Bldg. #5, Jun 29: Clark Memorial Student Center
Registration	Not required (Charge-free)
URL	<a href="http://circle.cc.hokudai.ac.jp/unisummit08">http://circle.cc.hokudai.ac.jp/unisummit08</a>
Inquiry	<a href="mailto:unisummit2008@gmail.com">unisummit2008@gmail.com</a>
Language	English, Japanese
Intended Audience	College Students

Date	June 29, 2008 (13:00-18:00) <b>Finished</b>
Title	School Education for Establishing Sustainable Society in Hokkaido
Outline	How should environmental education be positioned in the school curriculum? Discussions will be held in the following three areas: environmental education as a separate school subject; environmental education within existing school subjects; teacher communities for the creation of environmental education.
Organizer	Graduate School of Education
Venue	Hokkaido University Conference Hall
Registration	Required (Charge-free)
URL	<a href="http://sw2008.jp/weeks/education/">http://sw2008.jp/weeks/education/</a>
Inquiry	Phone: +81-(0)11-706-3100, seess629@edu.hokudai.ac.jp
Language	Japanese
Intended Audience	Researchers, College Students, Educators

Date	June 29, 2008 <b>Finished</b>
Title	The Present and Future of Ainu Studies, Part I
Outline	A series of symposiums will look back on the history of research into the Ainu with an eye to ideal research methods for the future, with the first symposium featuring history, archaeology and linguistics.
Organizer	Center for Ainu and Indigenous Studies
Venue	Hokkaido University Conference Hall
Registration	Not required (Charge-free)
URL	<a href="http://www.cais.hokudai.ac.jp">http://www.cais.hokudai.ac.jp</a>
Inquiry	Phone: +81-(0)11-706-2859, ainu@let.hokudai.ac.jp
Language	English, Japanese
Intended Audience	General Public

Date June 29 - July 1, 2008 **Finished**

Title G8 University Summit

#### Outline

Presidents of prominent universities from 14 countries will assemble before the Hokkaido Toyako Summit and make proposals from academia for the realization of a sustainable society.

URL <http://g8u-summit.jp/>

Inquiry Phone: +81-(0)11-706-2916, [kokuryu@general.hokudai.ac.jp](mailto:kokuryu@general.hokudai.ac.jp)

\*Seats are restricted to invitees

Date Ealy July - July 9, 2008 **Finished**

Title Team Sapporo Omotenashi

#### Outline

Through their hospitality, the university students are planning programs to promote links between visitors and local citizens so that they can experience each other's cultures.

Venue Sapporo City(Sapporo Station, Odori Park, Tanukikoji Shopping Street)

Inquiry [omotenashi08@yahoo.co.jp](mailto:omotenashi08@yahoo.co.jp)

Date July 2, 2008 (18:00-19:30) **Finished**

Title Toward Stronger Ties between Agricultural and Medical Science

#### Outline

When we think about the most immediate issues of food and health, we need to learn from the past and re-establish a philosophy of harmony between agriculture and medicine. We will consider this important theme.

Organizer Sustainability Governance Project (SGP)

Venue Sapporo 55 Bldg. (N5, W5, Sapporo)

Registration Not required (Charge-free)

URL <http://www.sgp.hokudai.ac.jp/SGP.html>

Inquiry Phone: +81-(0)11-706-4530, [jimu@sgp.hokudai.ac.jp](mailto:jimu@sgp.hokudai.ac.jp)

Language Japanese

Intended Audience General Public

Handouts Prof. Katsuyuki Minami (Kitasato University)  
<http://hdl.handle.net/2115/34139> \*Link to a page in HUSCAP



Date	July 2-6, 2008 <b>Finished</b>
Title	SGP International Conference on Sustainable Agriculture & Environment (SGP-ICSAE)
Outline	We will review modern agriculture as developed by heavy machinery and tremendous input of resources (petroleum, fertilizers, agrichemicals, water), and discuss a new system for the sustainable production of food, fiber and bio-energy.
Organizer	Sustainability Governance Project (SGP), IR3S Participating Universities
Venue	Hokkaido University Conference Hall
Registration	Not required (Charge-free)
URL	<a href="http://www.sgp.hokudai.ac.jp/sgp-icsae/index.html">http://www.sgp.hokudai.ac.jp/sgp-icsae/index.html</a>
Inquiry	Phone: +81-(0)11-706-4530, <a href="mailto:icsa2008@sgp.hokudai.ac.jp">icsa2008@sgp.hokudai.ac.jp</a>
Language	English
Intended Audience	Researchers, College Students
Speaker's Slide	<a href="#">Download</a> speaker's slides(Total 24 files) (Link to a page in HUSCAP) <a href="http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34408">http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34408</a>

Date	July 3 (13:00-18:00) - July 4 (9:30-16:30), 2008 <b>Finished</b>
Title	Environment & Health; Human life in changing global environments
Outline	The effects on health from changes in the natural environment such as global warming and environmental pollution will be highlighted, as well as the effects of changes in the social environment caused by round-the-clock economic activity. Measures to recover a rich natural environment and reclaim lifestyles will also be proposed.
Organizer	Graduate School of Medicine
Venue	Hokkaido University Conference Hall
Registration	Not required (Charge-free)
URL	<a href="http://www.med.hokudai.ac.jp/news/2008/0612/ProgramE.pdf">http://www.med.hokudai.ac.jp/news/2008/0612/ProgramE.pdf</a>
Inquiry	Phone: +81-(0)11-706-6058, <a href="mailto:sathonma@med.hokudai.ac.jp">sathonma@med.hokudai.ac.jp</a>
Language	Japanese, English
Intended Audience	General Public, Researchers, College Students
Speaker's Slide	<a href="#">Download</a> speaker's slides(Total 8 files) (Link to a page in HUSCAP) <a href="http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34495">http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34495</a>

Date	July 3-31, 2008 (18:30-20:30) <b>Finished</b>
Title	Sustainable Society & Hokkaido: The Changing environment & People's Lives
Outline	TBA
Organizer	Hokkaido University
Venue	Hokkaido University Multimedia Education Bldg.
Registration	Required (Charged)
URL	<a href="http://www.hokudai.ac.jp/bureau/gakumu/koukai20.html#1">http://www.hokudai.ac.jp/bureau/gakumu/koukai20.html#1</a>
Inquiry	Phone: +81-(0)11-706-5252, FAX: +81-(0)11-706-7854
Language	Japanese
Intended Audience	General Public
Speaker's Slide	<a href="#">Download</a> speaker's slides(Total 10 files) (Link to a page in HUSCAP) <a href="http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34607?locale=en">http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34607?locale=en</a>

Date	July 5, 2008 (14:00-16:30) <b>Finished</b>
Title	Symposium on Sustainable Management for Culture & Communities
Outline	In establishing museums, halls, etc. within communities, we have to consider how to gain the cooperation of that community. Managerial approaches to the long-term maintenance and development of cultural facilities will be examined using examples from Hokkaido.
Organizer	Graduate School of letters, Japan Association for Cultural Economics
Venue	Hokkaido University Clark Memorial Student Center
Registration	Not required (Charge-free)
URL	<a href="http://www.jace.gr.jp/taikai_ronbun.html">http://www.jace.gr.jp/taikai_ronbun.html</a>
Inquiry	Phone: +81-(0)11-706-3067, <a href="mailto:sasaki@let.hokudai.ac.jp">sasaki@let.hokudai.ac.jp</a>
Language	Japanese
Intended Audience	General Public, Researchers, College Students

Date July 5, 2008 (13:30-16:30) **Finished**

Title Let's talk about "Health of the Earth & People"

#### Outline

Around the world, 2.2 million infants die annually from unsafe water. Of the one billion people infected with largely preventable tropical diseases, 500 thousand die. Let's share our ideas regarding these challenges.

Organizer Graduate School of Medicine

Venue Hokkaido University Conference Hall

Registration Not required (Charge-free)

URL <http://ghe.med.hokudai.ac.jp/ghentd/>

Inquiry FAX: +81-(0)11-706-7374, [ghentd@ghe.med.hokudai.ac.jp](mailto:ghentd@ghe.med.hokudai.ac.jp)

Language Japanese

Intended Audience College Students, High School Students

Date July 5-7, 2008 (9:00-17:00) **Finished**

Title International Symposium: Sentinel Earth, Detection of Environmental Change

#### Outline

Global environmental predictions will be made using satellite and field observation data. In addition, policy exploration will be conducted for "sentinels for the global environment" for prompt control of environments from the North Pole to tropical zones according to prediction results.

Organizer Graduate School of Information Science and Technology

Venue Hokkaido University Conference Hall, Centennial Hall

Registration Required (Charge-free)

URL <http://sw2008.jp/SEarth/>

Inquiry Phone: +81-(0)11-706-6784, [hhaya@eng.hokudai.ac.jp](mailto:hhaya@eng.hokudai.ac.jp)

Language English

Intended Audience Researchers

#### Abstracts

<http://hdl.handle.net/2115/33941>

[HUSCAP (Hokkaido University collection of Scholarly and Academic Papers)]

Date	July 6, 2008 (9:00-13:00) <b>Finished</b>
Title	International Symposium on Sanitation in Hokkaido University
Outline	Aiming to overturn the current situation in which unsanitary water causes 2.2 million infant deaths annually, the functioning of public health systems will be discussed from the viewpoints of both public health policy and engineering.
Organizer	Graduate School of Engineering
Venue	Hokkaido University Conference Hall
Registration	Not required (Charge-free)
URL	-
Inquiry	FAX: +81-(0)11-706-6270, funamizu@eng.hokudai.ac.jp
Language	English
Intended Audience	Researchers, College Students

Date	July 7, 2008 (9:00-17:00) <b>Finished</b>
Title	Catalysis Leading to a Sustainable Society
Outline	Proposals will be made to the G8 nations for new environmental policies and frameworks toward international cooperation based on catalysts, which are indispensable to the innovative development of environmental and energy technologies.
Organizer	Catalysis Research Center
Venue	Hokkaido University Conference Hall
Registration	Not required (Charge-free)
URL	<a href="http://www.cat.hokudai.ac.jp/ueda/summit/index.htm">http://www.cat.hokudai.ac.jp/ueda/summit/index.htm</a>
Inquiry	Phone: +81-(0)11-706-9164, ueda@cat.hokudai.ac.jp
Language	English, Japanese
Intended Audience	Researchers

#### Abstracts

<http://hdl.handle.net/2115/34599>

[HUSCAP (Hokkaido University collection of Scholarly and Academic Papers)]

Date	July 9, 2008 <b>Finished</b>
Title	International Symposium "Peace, Reconciliation & Civil Society: Toward a Sustainable Peace in East Asia & Europe"
Outline	<p>Wars and colonial rule have caused many wounds throughout history. Reconciliation seeks to heal those wounds. This symposium aims to consider the power of citizens to promote reconciliation and peace. Prominent experts from around the world will join us in discussing how reconciliation and peace may be achieved.</p>
Organizer	"Peace, Reconciliation and Civil Society" Symposium Organizing Committee
Venue	Sapporo L・PLAZA
Registration	Not required (Charge-free)
URL	<a href="http://sw2008.jp/reconciliation/">http://sw2008.jp/reconciliation/</a>
Inquiry	Phone: +81-(0)11-706-4082, odahiroshi@hotmail.com
Language	English, Japanese
Intended Audience	General Public, Researchers, College Students

We regret to inform you that this event has been canceled. For more information, please contact the organizer on +81-(0)11-706-3140 or [globalg@juris.hokudai.ac.jp](mailto:globalg@juris.hokudai.ac.jp).

Date	July 10, 2008 (9:00-17:00)
Title	Strategy of Social Inclusion for Sustainable Development
Outline	<p>Aiming to overcome problems caused by exclusionary social structures such as poverty and discrimination, the future of a new policy development known as social inclusion will be discussed by featuring British policy makers and researchers who have made pioneering achievements in the field.</p>
Organizer	JSPS: Grants-in-Aid for Scientific Research Comprehensive Research on ideas & policy of civil social democracy"
Venue	Hokkaido University Clark Memorial Student Center
Registration	Not required (Charge-free)
URL	<a href="http://www.esdemoeracy.com/">http://www.esdemoeracy.com/</a> (To be prepared)
Inquiry	Phone: +81-(0)11-706-3140, <a href="mailto:globalg@juris.hokudai.ac.jp">globalg@juris.hokudai.ac.jp</a>
Language	English
Intended Audience	Researchers, College Students

Date	July 10-12, 2008 (9:00-17:00) <b>Finished</b>
Title	Sustainable Should Be Female Scientists'Career! Environments for Gender Equality and Work-Life Balance in Science
Outline	Improvement of the environment for female researchers to continue careers with vision even during milestone periods in life, such as childbirth, child rearing and nursing care, will be discussed from the viewpoints of gender equality and work-life balance.
Organizer	Support Office for Female Researchers in Hokkaido University (FResHU)
Venue	Hokkaido University Centennial Hall, Faculty House Trillium
Registration	Required (Charge-free)
URL	<a href="http://freshu.ist.hokudai.ac.jp/english/sw_2008.html">http://freshu.ist.hokudai.ac.jp/english/sw_2008.html</a>
Inquiry	Phone: +81-(0)11-706-3623, myan@res.agr.hokudai.ac.jp
Language	English
Intended Audience	Researchers

Date	July 11, 2008 (13:45-16:00) <b>Finished</b>
Title	Beyond the Double Helix - Life Science for the Disease Free Society -
Outline	Professors Lewis Cantley (Harvard Medical School) and Tadamitsu Kishimoto (Osaka University) will give us a lecture as to provide future directions of the life science of the 21st century.
Organizer	Institute for Genetic Medicine
Venue	Auditorium, Institute for Genetic Medicine, Hokkaido University
Registration	Not required (Charge-free)
URL	<a href="http://sw2008.jp/doublehelix">http://sw2008.jp/doublehelix</a> , <a href="#">Poster (PDF 750KB)</a>
Inquiry	Phone: +81-(0)11-706-5070, doublehelix@igm.hokudai.ac.jp
Language	English
Intended Audience	Researchers, College Students

Date	July 11, 2008 <b>Finished</b>
Title	Sustainability Weeks 2008 Closing Symposium
Outline	The results of the Sustainability Weeks will be shared, and will include the announcement of a sustainability project plan to be implemented in earnest.
Organizer	Hokkaido University
Venue	Hokkaido University Clark Memorial Student Center (Tentative)
Registration	Not required (Charge-free)
URL	<a href="http://sustain.oia.hokudai.ac.jp/sw2008/english/weeks/closing">http://sustain.oia.hokudai.ac.jp/sw2008/english/weeks/closing</a>
Inquiry	FAX: +81-(0)11-706-2095, office2@sustain.hokudai.ac.jp
Language	Japanese
Intended Audience	Researchers, College Students
Speaker's Slide	<a href="#">Download</a> speaker's slides(Total 12 files) (Link to a page in HUSCAP) <a href="http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34516?locale=en">http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/34516?locale=en</a>



## Sustainability Weeks 2008 Opening Symposium “Toward a Sustainable'Low Carbon Society”

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Officially opens Sustainability Weeks 2008, which will discuss the topic of what we can do now for future generations from various perspectives such as those of natural science, social reform and technological innovation.

>>[Click to see abstracts and presentations](#) (※Link to the website "Hokudai"Network")

Date	June 23, 2008 (Time : 9:00-18:00) <b>Finished</b>
Venue	Hokkaido University Conference Hall Access to campus : <a href="http://www.hokudai.ac.jp/en/pickup/accesstocampus.html">http://www.hokudai.ac.jp/en/pickup/accesstocampus.html</a>
Registration	Required (Charge-free)
Seating Capacity	300
Organizer	Committee for Sustainability Weeks 2008
Contact	Hokkaido University Secretariat for Sustainability Weeks 2008 Phone: +81-(0)11-706-8031, E-mail: <a href="mailto:sw2@oia.hokudai.ac.jp">sw2@oia.hokudai.ac.jp</a>
Language	English
Intended Audience	College Students, Researchers

## Program

09:00	Opening Address : Hiroshi Saeki, President of Hokkaido University
09:05	Congratulatory Speech : Kiyoshi Shimizu, Director-General, Higher Education Bureau, Ministry of Education, Culture, Sports, Science and Technology, Japan
09:15	Background of This Symposium : Takeo Hondoh, Chairperson, Committee for Sustainability Weeks 2008
<b>Plenary Session 1. Science Uncovering &amp; Forecasting Global Change (Science)</b> Chairperson : Atsumu Ohmura, Professor, ETH Zurich	
9:30	“Climate and Environment Changes over Globe and China(Tentative)” Shi Guangyu, Professor, IPCC TAR Lead Author, Institute of Atmospheric Physics, Chinese Academy of Sciences
10:30	Break
10:45	“Drastic Change during Global Warming: What we know and don't know” Motoyoshi Ikeda, Professor, Faculty of Environmental Earth Science, Hokkaido University
11:15	Summary of This Session : Atsumu Ohmura, Professor, ETH Zurich
11:30	Lunch Break
<b>Plenary Session 2. Accelerating Technological Innovation for Structural Change (Engineering)</b> Chairperson: Bunsho Ohtani, Professor, Catalysis Research Center, Hokkaido University	
13:00	“Power from the Sun, the Advent of Mesoscopic Solar Cells” Michael Gratzel, Professor, EPL Lausanne
14:00	“Green Catalytic Conversion of Inedible Biomass for Sustainable Development” Atsushi Fukuoka, Professor, Catalysis Research Center, Hokkaido University
14:30	Summary of This Session : Wataru Ueda, Professor, Dean of Catalysis Research Center, Hokkaido University
14:45	Break
<b>Plenary Session3. Necessary Policy for a Balanced Society -Pursuing Coexistence, Fairness &amp; Development (Public Policy)</b> Chairperson: Kenichi Nakamura, Professor, Faculty of Public Policy, Hokkaido University	
15:00	“Policies for a Low Carbon Society: Is the Industrialized World Doing Enough?” Miranda Schreurs, Professor, Director of the Environmental Policy Centre, Free University of Berlin
16:00	“How to make a Sustainable Low Carbon Society in Asia” Fumikazu Yoshida, Professor, Faculty of Public Policy, Hokkaido University

16:30	Summary of This Session Kenichi Nakamura, Professor, Faculty of Public Policy, Hokkaido University
16:45	Break
<b>Plenary Session4. Challenges as a Frontier of Protecting the Lives (Health/Infective Disease)</b> Chairperson: Jiro Arikawa, Professor, Graduate School of Medicine, Hokkaido University	
17:00	“How are We Prepared for Emerging Zoonoses?” Ayato Takada, Professor, Research Center for Zoonosis Control, Hokkaido University
17:50	Summary of This Session : Jiro Arikawa, Professor, Graduate School of Medicine, Hokkaido University
18:00	Closing Remarks : Takeo Hondoh, Chairperson, Committee for Sustainability Weeks 2008

## How to make Sustainable Low Carbon Society –Synergy of Social and Engineering–

The question of how to produce synergistic effects from the science of public policy, which seeks to reorganize social systems, and engineering, which pursues technical solutions, will be discussed with the aim of accelerating a shift toward a sustainable low-carbon society.

[>>Click to see abstracts and presentations](#) (※Link to the website "Hokudai Network")

Date	June 24, 2008 <b>Finished</b>
Venue	Hokkaido University Conference Hall Access to campus : <a href="http://www.hokudai.ac.jp/en/pickup/accesstocampus.html">http://www.hokudai.ac.jp/en/pickup/accesstocampus.html</a>
Registration	Required (Charge-free)
Seating Capacity	150
Organizer	Hokkaido University Initiative for Sustainable Development, Graduate School of Engineering, Faculty of Public Policy
Contact	Hokkaido University Secretariat for Sustainability Weeks 2008 Phone: +81-(0)11-706-8031, E-mail: <a href="mailto:sw2@oia.hokudai.ac.jp">sw2@oia.hokudai.ac.jp</a>
Language	English
Intended Audience	College Students, Researchers

## Program

09:00	Opening Address	Takeo Hondoh, Chairperson, Committee for Sustainability Weeks 2008
09:05	Presentation/The purpose of the meeting	Fumikazu Yoshida, Professor, Faculty of Public Policy, Hokkaido University Naoyuki Funamizu, Professor, Graduate School of Engineering, Hokkaido University
<p>Session 1. “Social System Transformation towards a Low Carbon Society”</p> <p>Chairperson : Fumikazu Yoshida, Professor, Faculty of Public Policy, Hokkaido University</p>		
09:15	“Development and Transfer of ESTs: A Pillor of the International Climate Regime post 2012””	Zou Ji Vice Dean, School of Environment and Natural Resources, Renmin University, China
10:00	Question and Answers	
10:10	“French Perspective in EU for Low Carbon Society”	Thierry Hommel, Professor, Sciences Po, France
10:55	Question and Answers	
11:05	Break	
11:20	“Environmental Governance and Economics for Sustainable Low Carbon Society”	Kazuhiro Ueta, Professor, Graduate School of Economics and Graduate School of Global Environmental Studies, Kyoto University
12:05	Question and Answers	
12:15	Summary	Chairperson
12:30	Lunch	
<p>Session 2. “Challenge s in Water System as a Fundamental System of Sustainable Human Society” Chairperson :Naoyuki Funamizu, Professor, Graduate School of Engineering, Hokkaido University</p>		
14:00	“Water, Sustainable Development, and Climate Change”	Taikan Oki, Professor, Institute of Industrial Science, the University of Tokyo

14:45	Question and Answers	
14:55	“Wise Use of Water”	Yasumoto Magara, Professor, Hokkaido University Research Center for Environmental Nano and Bio Engineering
15:40	Question and Answers	
15:50	Summary	Chairperson
16:05	Break	
<p>Session 3. Panel Discussion “How to make synergy by Social System Reform and Technical Solution”</p> <p>Chairperson : Fumikazu Yoshida, Professor, Faculty of Public Policy, Hokkaido University, Naoyuki Funamizu, Professor, Graduate School of Engineering, Hokkaido University</p>		
16:20	Panel Discussion	
17:30	Closing Address	

## Hokkaido and Far-east Russia Environment Forum for Sustainable Development

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Nature and social science researchers from the Russian Far East and Hokkaido will report on environmental conditions in the Sea of Okhotsk and coastal areas, and will discuss how they can work together in the future.

<b>Date</b>	June 19, 2008 (Time: 13:00-17:00) <b>Finished</b>
<b>Venue</b>	Sapporo Dome (Integrated Exhibition of the Environment 2008) URL : <a href="http://www.do-summit.jp/kankyouten2008/">http://www.do-summit.jp/kankyouten2008/</a> (Japanese)
<b>Registration</b>	<del>Required (Charge-free)</del> [Registration for this symposium has been closed because of limited seating. ]
<b>Seating Capacity</b>	100
<b>Organizer</b>	Hokkaido University, Hokkaido Government: Hokkaido Economic Federation, Hokkaido Regional Development Bureau, The Hokkaido Shimbun Press
<b>Contact</b>	Hokkaido University Secretariat for Sustainability Weeks 2008 Phone: +81-(0)11-706-8031, E-mail: <a href="mailto:sw2@oia.hokudai.ac.jp">sw2@oia.hokudai.ac.jp</a>
<b>Language</b>	Japanese, Russian
<b>Intended Audience</b>	General public, College students, Researchers
<b>Handouts</b>	<ul style="list-style-type: none"> <li>&gt;Professor, Lubov M. KONDRATJEVA <a href="http://hdl.handle.net/2115/34130">http://hdl.handle.net/2115/34130</a></li> <li>&gt;Professor, Keiichirou OOSHIMA <a href="http://hdl.handle.net/2115/34135">http://hdl.handle.net/2115/34135</a></li> <li>&gt;Professor, Yasunori SAKURAI <a href="http://hdl.handle.net/2115/34133">http://hdl.handle.net/2115/34133</a></li> <li>&gt;Professor, Hitoshi SHOJI <a href="http://hdl.handle.net/2115/34134">http://hdl.handle.net/2115/34134</a></li> <li>&gt;Mr, Yury G. TARASENKO <a href="http://hdl.handle.net/2115/34131">http://hdl.handle.net/2115/34131</a></li> <li>&gt;Mr, Sergey N. ANDRIENKO <a href="http://hdl.handle.net/2115/34129">http://hdl.handle.net/2115/34129</a></li> <li>&gt;Ms. Natalya N. TARABAROVA <a href="http://hdl.handle.net/2115/34132">http://hdl.handle.net/2115/34132</a></li> <li>&gt;Mr. LIU Xu <a href="http://hdl.handle.net/2115/34117">http://hdl.handle.net/2115/34117</a></li> </ul> <p>*Links to pages in HUSCAP</p>



## Environmental Leadership Initiative for Asian Sustainability (ELIAS)

Representatives of higher education institutions promoting Education and Research for Sustainable Development in the Asia-Pacific Region will share their knowledge of curricula and teaching materials. They will also exchange views regarding the potential for human resource development through cooperation by various stakeholders.

<b>Date</b>	June 21, 2008 (Time : 13:00-16:30) <b>Finished</b>
<b>Venue</b>	Sapporo Dome (Integrated Exhibition of the Environment 2008)
<b>Registration</b>	Required (Charge-free)
<b>Seating Capacity</b>	150
<b>Organizer</b>	Ministry of the Environment of Japan, United Nations University - Institute of Advanced Studies (UNU-IAS), Hokkaido University
<b>Contact</b>	Hokkaido University Secretariat for Sustainability Weeks 2008 Phone: +81-(0)11-706-8031, E-mail: sw2@oia.hokudai.ac.jp
<b>Language</b>	Japanese/English (Simultaneous interpretation)
<b>Poster</b>	<a href="http://www.env.go.jp/policy/edu/asia/pdf/08621.pdf">http://www.env.go.jp/policy/edu/asia/pdf/08621.pdf</a>
<b>Intended Audience</b>	General Public, College Students, Researchers

### Program (Tentative)

<b>First Section</b>	
13:00	Opening remarks
Session 1	Presentation from the organizer
Session 2	Asian Universities' Educational Activities on SD
Session 3	Japanese Universities' Educational Activities on SD
Session 4	Discussion <i>Collaboration to foster human resources for Sustainable Asia</i>
16:30	Closing remarks
<b>Second Section</b>	Venue: Hokkaido University Campus
18:00	Japanese Universities' Educational Activities on SD
19:00-20:00	Reception

# Special Lecture by UN Secretary-General Ban Ki-Moon was Held

Date Jul. 08, 2008 (Finished)

With United Nations Secretary-General Ban Ki-Moon's visit, Hokkaido University hosted a special lecture meeting entitled "Challenge to Global Food Crisis- Discussion with the Secretary-General of the United Nations & Hokudai Students" on July 8 as part of the Sustainability Weeks 2008 event. The lecture was attended by 215 HU students.

At the opening of the lecture, Dr. Hiroshi Saeki, President of HU, delivered a welcome address, saying that he was grateful because it was an opportune moment for HU, which is tackling the issue of sustainability, to host Mr. Ban Ki-Moon, who would shed light on the food crisis issue from a global perspective. Dr. Takeo Hondoh, Vice President and Executive of HU, gave a speech and explained the purpose of the lecture meeting, followed by the keynote speech from Mr. Ban Ki-Moon. During his lecture, Mr. Ban reiterated the seriousness of current food issues in the international community, calling for the leadership of Japan and other advanced nations in providing food aid to developing nations, strengthening agricultural production and establishing stable food markets. His speech was followed by a dialogue meeting of approximately 30 minutes in which he answered students' questions and commented on their opinions. In response to a question on what roles the United Nations could play in addressing the food crisis (believed to be a result of globalization amidst widening economic disparities between developed and developing nations), Mr. Ban explained that the U.N. could help address the issue in a stable manner because institutional and structural issues must be tackled over the medium and long terms. In this way, he answered students' questions and exchanged opinions in earnest.

After the session, Mr. Ban delivered a message to those studying at HU, saying, "Students carry the future of our society. I have been truly impressed by your global efforts as well as the quality of your questions and the height of your awareness. Many people around the world are in situations so dire that it brings a tear to the eye to see them. I hope you will open your hearts and share with them. Please maintain a vision of the world's future, face people and society, enhance your awareness and fulfill the roles you are destined for."

Organization | Sustainability Weeks 2008

Category | Presentation/Lecture

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Editor: - Secretariat of Sustainability Weeks, Hokkaido University

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