

Ministry of Education, Culture, Sports, Science and Technology  
Program for Leading Graduate Schools

The 4th International Symposium and Seminar on  
Global Nuclear Human Resource Development  
for Safety, Security and Safeguards  
**- Nuclear Safety in the Post-Fukushima Era -**



*Fukushima Daiichi Nuclear Power Plants on March 24, 2011  
(Photo Courtesy of TEPCO)*

**February 17 – 26, 2015**  
Tokyo International Exchange Center and Grand Pacific Le Daiba  
**Tokyo, Japan**

**Organized by**  
Academy for Global Nuclear Safety and Security Agent,  
Tokyo Institute of Technology

**In Cooperation with**  
International Atomic Energy Agency (IAEA)  
Embassy of France in Japan  
Japan Atomic Energy Agency (JAEA)  
Institute of Nuclear Materials Management (INMM) Japan Chapter  
International Nuclear Research Collaboration Center, Tokyo Tech





# Symposium

## **Opening (Feb 17)**

Chair : Masayuki IGASHIRA (*Tokyo Tech, Japan*)

Welcome Address :

**Yoshinao MISHIMA** (*Tokyo Tech, Japan*)

Opening Address :

**Masaki SAITO** (*Tokyo Tech, Japan*)

**Shinji SUZUKI** (*MEXT, Japan*)

**Thierry DANA** (*Embassy of France in Japan*)

## **Plenary Session 1 (Feb 17)**

Chair : Tomihiro TANIGUCHI (*Tokyo Tech, Japan*)

Speakers :

**Philippe JAMET** (*ASN, France*)

**Erik HOLLNAGEL** (*U of Southern Denmark, Denmark*)

**Charles CASTO** (*Casto Group Consulting, USA*)

## **Plenary Session 2 (Feb 17)**

Chair : Masaki SAITO (*Tokyo Tech, Japan*)

Speakers :

**Akira KAWANO** (*TEPCO, Japan*)

**Naohiro MASUDA** (*TEPCO, Japan*)

**Yoshihisa MATSUMOTO** (*Tokyo Tech, Japan*)

**Kenji TAKESHITA** (*Tokyo Tech, Japan*)

## **Plenary Session 3 (Feb 18)**

Chair : Akira OMOTO (*Tokyo Tech, Japan*)

Speakers :

**Takafumi ANEGAWA** (*TEPCO, Japan*)

**Toru MATSUZAWA** (*Tohoku U, Japan*)

## **Plenary Session 4 (Feb 18)**

Chair : Philippe JAMET (*ASN, France*)

Speakers :

**Kazuo FURUTA** (*U of Tokyo, Japan*)

**Hiroshi YAMAGATA** (*NRA, Japan*)

**Toyoshi FUKETA** (*NRA, Japan*)

**Monica HAAGE** (*IAEA*)

**Mariko NISHIZAWA** (*Litera Japan, Japan*)

**Satoshi KURATA** (*JANSI, Japan*)

**Janice DUNN LEE** (*IAEA*)

## **Plenary Session 5 (Feb 19)**

Chair : Masayuki IGASHIRA (*Tokyo Tech, Japan*)

Speakers :

**Man-Sung YIM** (*KAIST, Korea*)

**Vladimir ARTISIUK** (*Rosatom, Russia*)

**Rahmat MOHSIN** (*UTM, Malaysia*)

**William CHARLTON** (*Texas A&M, USA*)

**Masaki SAITO** (*Tokyo Tech, Japan*)

# Seminar (*Closed*)

## **Lecture Session 1 (Feb 23)**

Moderator : Akira OMOTO (*Tokyo Tech, Japan*)

Speakers :

**Akira OMOTO** (*Tokyo Tech, Japan*)

**Monica HAAGE** (*IAEA*)

## **Lecture Session 2 (Feb 23)**

Moderator : Masaki SAITO (*Tokyo Tech, Japan*)

Speakers :

**Yutaka SAGAYAMA** (*JAEA, Japan*)

**Hadid SUBKI** (*IAEA*)

## **Lecture Session 3 (Feb 24)**

Moderator : Masaki SAITO (*Tokyo Tech, Japan*)

Speakers :

**Hirobumi KAYAMA** (*METI, Japan*)

**Nguyen Tuan Khai** (*VINATOM, Vietnam*)

## **Lecture Session 4 (Feb 24)**

Moderator : Hideo NAGASAKA (*Tokyo Tech, Japan*)

Speakers :

**Kumiaki MORIYA** (*Hitachi, Japan*)

(cont'd...)

**Kazuhiro KAMEI** (*Toshiba, Japan*)

**Shigemitsu OTSUKA** (*Mitsubishi, Japan*)

**Jor-Shan CHOI** (*UC Berkeley, USA*)

## **Student Session 1 (Feb 24)**

Chairs : *Students and Young Professionals*

Speakers :

**Akira OMOTO** (*Tokyo Tech, Japan*)

## **Student Session 2 (Feb 25)**

Chairs : *Students and Young Professionals*

## **Student Session 3 (Feb 26)**

Chairs : *Students and Young Professionals*

Speakers : *Students and Young Professionals*

## **Closing (Feb 26)**

Chair : Masaki SAITO (*Tokyo Tech, Japan*)

Speakers :

**Noramly Muslim** (*UNITEN, Malaysia*)

**Tomihito TANIGUCHI** (*Tokyo Tech, Japan*)

# PROGRAM



*The 3rd International Symposium and Seminar on Global Nuclear Human Resource Development for Safety, Security and Safeguards, February 25 – March 7, 2014, Tokyo, Japan*

**February 16 (Mon)**

## **Orientation (Only for Invited Students and Young Professionals)**

(Conference Room 1, 4F, Plaza Heisei, Tokyo International Exchange Center)

### **Welcome Address**

13:30-13:40 **Masaki SAITO** (Professor and Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)

13:40-14:10 **Orientation**

14:10-14:40 **Student Registration**

14:40-15:00 **Preparations**

15:00-16:30 **Self Introductions**

16:30-17:00 **Closing**

## **Speakers' Meeting (Only for Overseas Speakers)**

(Le Bouquet, 2F, Grand Pacific Le Daiba)

18:00-20:00 **Program Meeting**

## February 17 (Tue)

(Int'l Conference Hall, 3F, Plaza Heisei, Tokyo International Exchange Center)

### Open Registration

08:30-

### Opening

*Chaired by Masayuki IGASHIRA (Professor and Vice-Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)*

09:00-09:10 **Welcome Address**

**Yoshinao MISHIMA** (President, Tokyo Institute of Technology, Japan)

09:10-09:40 **Opening Address**

**Masaki SAITO** (Professor and Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)

**Shinji SUZUKI** (Ministry of Education, Culture, Science and Technology, Japan)

**Thierry DANA** (Ambassador, Embassy of France in Japan)

### Plenary Session 1

*Chaired by Tomihiro TANIGUCHI (Professor, Tokyo Institute of Technology, Japan)*

09:40-10:20 **Keynote Speech 1**

**“Lessons Learned for Risk Management from the French Stress Tests”**

**Philippe JAMET** (Commissioner, Nuclear Safety Authority, France)

10:20-10:40 **Tea Break**

10:40-11:20 **Keynote Speech 2**

**“The Past and Future of Safety Management”**

**Erik HOLLNAGEL** (Professor, University of Southern Denmark, Denmark)

11:20-12:00 **Keynote Speech 3**

**“Global Leadership in the Extreme: Crisis Leadership Post-Fukushima”**

**Charles CASTO** (President, Casto Group Consulting LLC, USA)

12:00-14:00 **Group Photo and Lunch**

**February 17 (Tue)**

(Int'l Conference Hall, 3F, Plaza Heisei, Tokyo International Exchange Center)

## **Plenary Session 2:**

### **The Fukushima NPP Accident**

*Chaired by Masaki SAITO (Professor and Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)*

- 14:00-14:40 **Invited Speech 1**  
“Overview of TEPCO’s Fukushima Accident and Lessons of the Accident”  
Akira KAWANO (Deputy Head, Tokyo Electric Power Company, Japan)
- 14:40-15:20 **Invited Speech 2**  
“Current Status and the Future of Fukushima-Daiichi Site”  
Naohiro MASUDA (Managing Executive Officer, Tokyo Electric Power Company, Japan)
- 15:20-15:40 **Tea Break**
- 15:40-16:20 **Invited Speech 3**  
“Fukushima Daiichi Nuclear Power Plant Accident from the Aspect of Radiation Biology”  
Yoshihisa MATSUMOTO (Professor, Tokyo Institute of Technology, Japan)
- 16:20-17:00 **Invited Speech 4**  
“Effect on the Environment and Decontamination”  
Kenji TAKESHITA (Professor, Tokyo Institute of Technology, Japan)

## **Evening Session**

**(Room Hikari, 29F, Grand Pacific Le Daiba)**

*15 min. walk from Tokyo International Exchange Center*

- 18:00-20:00 **Discussions of the Key Issues of Mutual Concern**

## February 18 (Wed)

(Int'l Conference Hall, 3F, Plaza Heisei, Tokyo International Exchange Center)

### Plenary Session 3:

#### **Why Failed, What Went Right, and Why? - For the Future -**

*Chaired by Akira OMOTO (Professor, Tokyo Institute of Technology, Japan)*

- 09:00-9:40      **Invited Speech 5**  
                  **“TEPCO’s View”**  
                  **Takafumi ANEGAWA** (Chief Nuclear Officer, Tokyo Electric Power Company, Japan)
- 09:40-10:20    **Invited Speech 6**  
                  **“Reasons why we Seismologists Failed to Foresee the M9 Earthquake”**  
                  **Toru MATSUZAWA** (Professor, Tohoku University, Japan)
- 10:20-10:40                      **Tea Break**

### Plenary Session 4:

#### **The Future of Risk Management**

*Chaired by Philippe JAMET (Commissioner, Nuclear Safety Authority, France)*

- 10:40-11:20    **Invited Speech 7**  
                  **“Enhancing Resilience”**  
                  **Kazuo FURUTA** (Professor, University of Tokyo, Japan)
- 11:20-12:00    **Invited Speech 8**  
                  **“Challenges in Regulation: Minimizing Unanticipated Events and Broadening Countermeasures”**  
                  **Hiroshi YAMAGATA** (Director, Nuclear Regulation Authority, Japan)
- 12:00-13:30                      **Lunch**



**February 18 (Wed)**

**(Int'l Conference Hall, 3F, Plaza Heisei, Tokyo International Exchange Center)**

- 13:30-14:10 **Invited Speech 9**  
“A Perspective on Actions in Response to the Fukushima Dai-ichi Accident”  
Toyoshi FUKETA (Commissioner, Nuclear Regulation Authority, Japan)
- 14:10-14:50 **Invited Speech 10**  
“Managing Human, Organization and Technology”  
Monica HAAGE (Safety Officer, Department of Nuclear Safety and Security, IAEA)
- 14:50-15:10 **Tea Break**
- 15:10-15:50 **Invited Speech 11**  
“How Good Risk Communication Can Lead to Enhanced Nuclear Safety”  
Mariko NISHIZAWA (Representative Director, Litera Japan Corporation, Japan)
- 15:50-16:30 **Invited Speech 12**  
“Operators’ Risk Management in Post-Fukushima Era in Japan”  
Satoshi KURATA (Operations Officer, Japan Nuclear Safety Institute, Japan)
- 16:30-17:10 **Keynote Speech 4**  
“Global Leader” (Video)  
Janice DUNN LEE (Deputy Director General, Department of Management, IAEA)

**February 19 (Thu)**

(Room Niji, 29F, Grand Pacific Le Daiba)

## **Plenary Session 5:**

### **Education, Leadership in Safety and Resilience Management**

*Chaired by Masayuki IGASHIRA (Professor and Vice-Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)*

09:00-09:30 **Invited Speech 13**

**“Nuclear Engineer for the Future”**

**Man-Sung YIM** (Professor, KAIST, Korea)

09:30-10:00 **Invited Speech 14**

**“Knowledge Transfer to Embarking States. The Issue of Safety Culture”**

**Vladimir ARTISIUK** (Vice-Rector, Rosatom Central Institute for Continuing Education and Training, Russia)

10:00-10:30 **Invited Speech 15**

**“Nuclear Education Program in Malaysia: Overall Perspective & Challenges”**

**Rahmat MOHSIN** (Professor, Universiti Teknologi Malaysia, Malaysia)

10:30-10:50 **Tea Break**

10:50-11:20 **Invited Speech 16**

**“Synergies and Conflicts on Nuclear Safety and Security Risk Analysis in Reactor Design Courses”**

**William CHARLTON** (Professor, Texas A&M University, USA)

11:20-11:50 **Invited Speech 17**

**“3S Educational Program for Global Leader”**

**Masaki SAITO** (Professor and Director, Tokyo Institute of Technology, Japan)

## **Closing Remarks of Plenary Sessions**

11:50-12:00 **Masaki SAITO** (Professor and Director, Tokyo Institute of Technology, Japan)

12:00-13:00 **Lunch**

## **Field Education 1:**

### **Radiation Measurement in Tokyo**

*(Only for Invited Students and Young Professionals)*

13:00-14:00 **Environmental Radiation Measurement**

14:00- *Move to Fukushima*

February 20 (Fri)

## **Field Education 2: Experience of Fukushima NPSs Daiichi and Daini**

08:30-            *Move to Fukushima NPS*

09:30-17:00    **Field Experience**

17:00-            *Return to Hotel*



*Fukushima Daiichi Nuclear Power Plants on March 20, 2011  
(Photo Courtesy of TEPCO)*



*Fukushima Daiichi Nuclear Power Plants on March 24, 2011  
(Photo Courtesy of TEPCO)*

# Field Education

(Closed: Only for Invited Students and Young Professionals)

## February 21 (Sat)

### Field Education 3: Radiation Measurement in Fukushima

09:30-            *Move to Measurement Site*

10:00-11:30    **Environmental Radiation Measurement**

12:00-13:00            **Lunch**

13:00-            *Return to Tokyo*



**February 23 (Mon)**

(Room Niji, 29F, Grand Pacific Le Daiba)

## Lecture Session 1:

### **Creating Culture for Safety**

*Moderated by Akira OMOTO (Professor, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)*

09:00-09:05 **Introduction**

09:05-09:45 **Lecture 1**

**“Weakness of Application of Defense-in-Depth Concept”**

**Akira OMOTO** (Professor, Tokyo Institute of Technology, Japan)

09:45-10:30 **Lecture 2**

**“Creating Culture for Safety” (Video)**

**Monica HAAGE** (Safety Officer, Department of Nuclear Safety and Security, IAEA)

10:30-10:50 **Tea Break**

### **Breakup Session**

10:50-14:30 **Group Discussions**

*(Including Lunch)*

14:30-15:30 **Presentations**

15:30-15:50 **Tea Break**

## Lecture Session 2:

### **Special Lectures**

*Chaired by Masaki SAITO (Professor and Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)*

15:50-16:30 **Special Lecture 1**

**“Safety for Generation IV Reactor Designs”**

**Yutaka SAGAYAMA** (Assistant to President, Japan Atomic Energy Agency, Japan)

16:30-17:10 **Special Lecture 2**

**“Implications of SMR on Safety, Security, and Safeguard”**

**Hadid SUBKI** (Project Manager, Department of Nuclear Energy, IAEA)

# Seminar

*(Closed: Only for Invited Students and Young Professionals)*

## February 24 (Tue)

(Room Niji, 29F, Grand Pacific Le Daiba)

### Lecture Session 3:

#### Special Lectures

*Chaired by Masaki SAITO (Professor and Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)*

09:00-09:40 **Special Lecture 3**

**“Japan’s Basic Energy Plan”**

**Hirobumi KAYAMA** (Director, Ministry of Economy, Trade, and Industry, Japan)

09:40-10:20 **Special Lecture 4**

**“National Plan of Nuclear Power Plants in Vietnam”**

**Nguyen Tuan Khai** (Deputy Director, Vietnam Atomic Energy Institute (VINATOM), Vietnam)

10:20-10:40 **Group Discussions**

10:40-11:00 **Tea Break**

### Lecture Session 4:

#### Safety Improvement in Future Reactors

*Chaired by Hideo NAGASAKA (Professor, Tokyo Institute of Technology, Japan)*

11:00-11:30 **Lecture 3**

**“Safety Improvement for External Hazard”**

**Kumiaki MORIYA** (Corporate Chief Engineer, Hitachi-GE Nuclear Energy, Japan)

11:30-12:00 **Lecture 4**

**“Safety Features in Toshiba’s New LWRs”**

**Kazuhiro KAMEI** (Specialist, Toshiba Corporation Power Systems Company, Japan)

12:00-12:30 **Lecture 5**

**“Plant Safety Concept to Improve Maneuvering Accidents”**

**Shigemitsu OTSUKA** (Engineering Manager, Mitsubishi Heavy Industries, Japan)

12:30-13:00 **Group Discussions**

13:00-14:30 **Lunch**

14:30-15:00 **Special Lecture 5**

**“Why Nuclear? - Despite the Fukushima Daiichi Accident - ”**

**Jor-Shan CHOI** (Associate Director, UC Berkeley Nuclear Research Center, USA)

**February 24 (Tue)**

(Room Niji, 29F, Grand Pacific Le Daiba)

## **Student Session 1**

*Chaired by Students and Young Professionals*

15:00-15:30 **Orientation**

**Akira OMOTO** (Professor, Tokyo Institute of Technology, Japan)

15:30-15:50 **Tea Break**

15:50-17:00 **Group Discussions**

*Each group will select one among six themes, provided in the session, and discuss to find solutions and present their thoughts in Student Session 3. A brief summary on the issue with some valuable papers will be distributed beforehand.*

*Free use of the internet for reference, but always clarify the source of all data/information*

*In group discussion arguments, always clarify why.*

# Seminar

*(Closed: Only for Invited Students and Young Professionals)*

## February 25 (Wed)

(Room Niji, 29F, Grand Pacific Le Daiba)

### **Student Session 2**

*Chaired by Students and Young Professionals*

09:00-10:20 **Group Discussions**

10:20-10:40 **Tea Break**

10:40-12:00 **Group Discussions**  
*(Continued)*

12:00-13:30 **Lunch**

13:30-15:00 **Group Discussions and Presentation Preparation**

15:00-15:20 **Tea Break**

15:20-17:00 **Group Discussions and Presentation Preparation**  
*(Continued)*



**February 26 (Thu)**

(Room Niji, 29F, Grand Pacific Le Daiba)

## **Student Session 3**

*Chaired by Students and Young Professionals*

09:00-10:20 **Group Discussions and Presentation Preparation**

10:20-10:30 **Tea Break**

10:30-11:00 **Presentation of Group 1**

11:00-11:30 **Presentation of Group 2**

11:30-12:00 **Presentation of Group 3**

12:00-13:30 **Lunch**

13:30-14:00 **Presentation of Group 4**

14:00-14:30 **Presentation of Group 5**

14:30-15:00 **Presentation of Group 6**

15:00-15:10 **Tea Break**

## **Closing**

*Chaired by Masaki SAITO (Professor and Director, Academy for Global Nuclear Safety and Security Agent, Tokyo Institute of Technology, Japan)*

15:10-16:00 **Special Lecture 6**

**“The Roles of Civil Society towards Safety, Security, and Safeguards”**

**Noramly Muslim** (Adjunction Professor, Universiti Tenaga Nasional, Malaysia, and Former DDG, IAEA)

16:00-16:30 **Special Lecture 7**

**“Capturing and Creating the Global Big Picture”**

**Tomihiko TANIGUCHI** (Professor, Tokyo Institute of Technology, Japan)

16:30-17:30 **Awards and Closing Remarks**

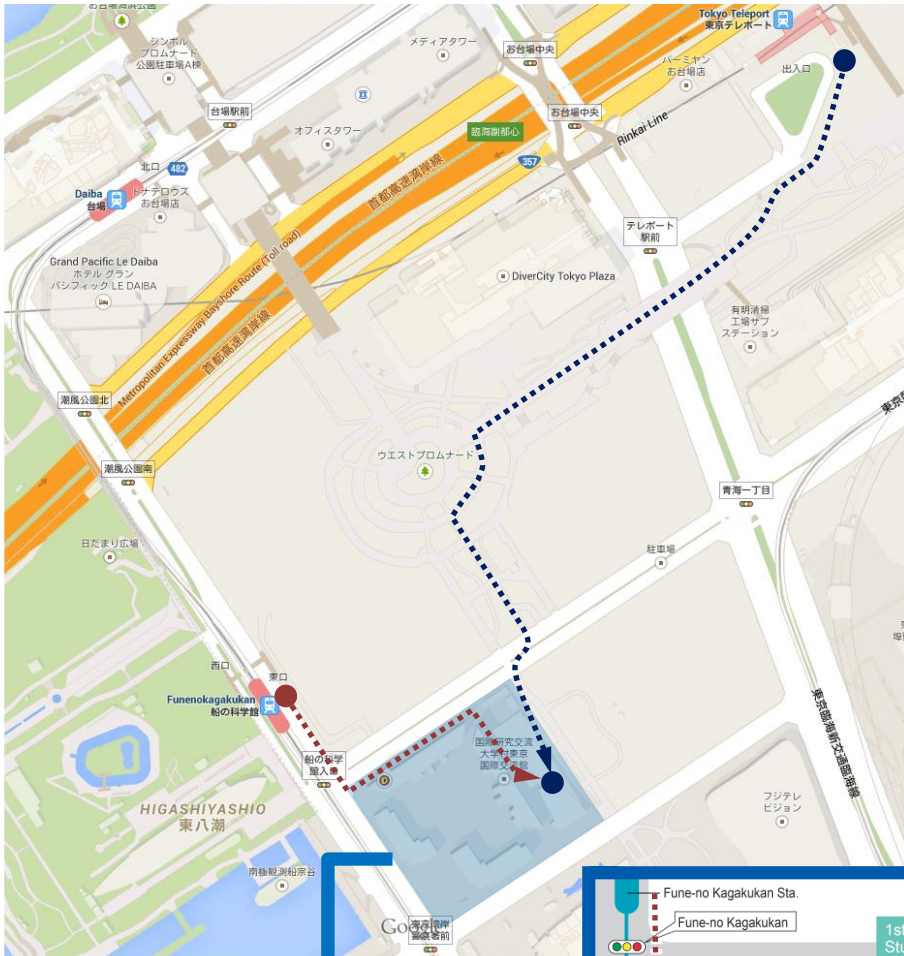
# Directions and Venue



Source: [http://www.fujitv.co.jp/en/visit\\_fujitv\\_access.html](http://www.fujitv.co.jp/en/visit_fujitv_access.html)

## Tokyo International Exchange Center

- Student Orientation at Conference Room 1, 4F, Plaza Heisei (Feb. 16)
- Plenary Sessions at International Conference Hall, 3F, Plaza Heisei (Feb. 17-18)

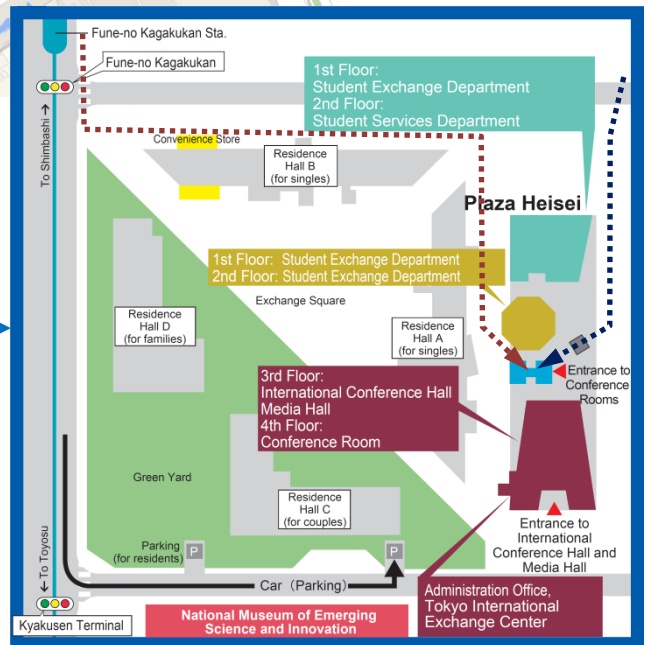


15 Min. Walk from Tokyo Teleport Sta. (Exit A)



5 Min. Walk from Funenokagakukan Sta. (East Exit)

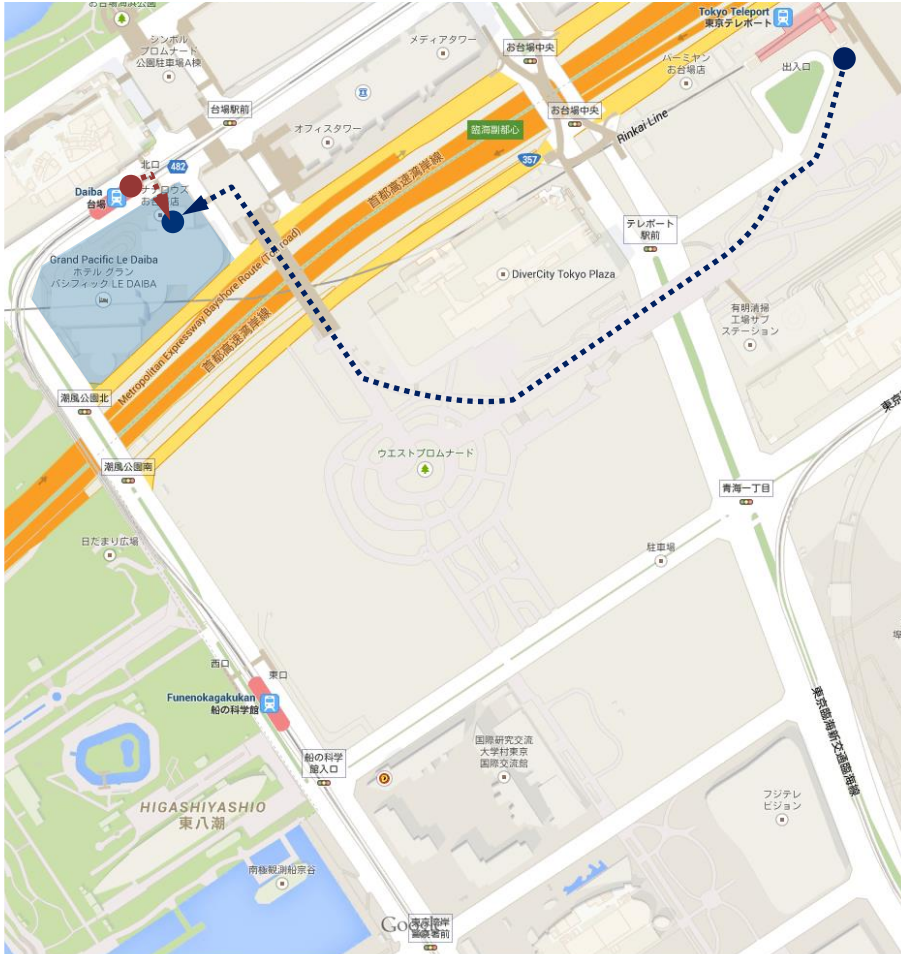
Source: <http://maps.google.com>



# Directions and Venue

## Grand Pacific Le Daiba

- Evening Session at Room Hikari, 29F (Feb. 17)
- Lecture and Student Sessions at Room Niji, 29F (Feb. 19, and Feb. 23-26)

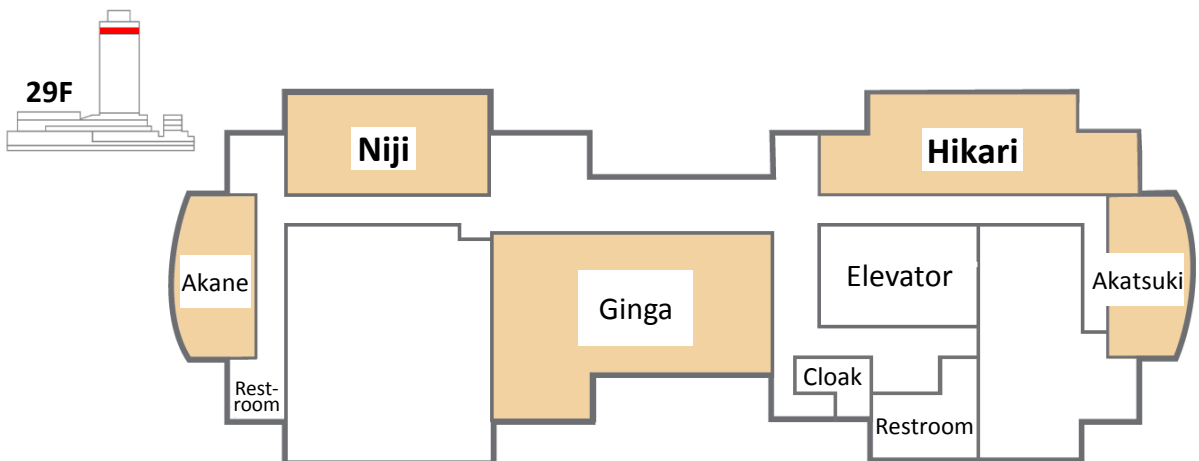


15 Min. Walk from Tokyo Teleport Sta. (Exit A)



1 Min. Walk from Daiba Sta.

Source: <http://maps.google.com>





The Four Seasons of Fukushima

