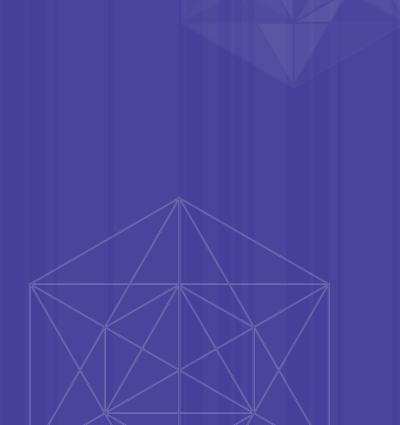


### HeKKSaGOn University Alliance

# The 8<sup>th</sup> German-Japanese University Presidents' Conference

"How universities can contribute to building healthy, safe and resilient societies

Held online, September 9-10, 2021

















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# PROGRAM

#### **PROGRAM**

### THURSDAY, SEPTEMBER 9, 2021

DE	JP	Program
08:30-09:40	15:30-16:40	Closed Presidents' Meeting
10:00-11:20	17:00-18:20	Academic Conference [Live stream, open to the public]  "Building resilient societies following the Great East Japan Earthquake and COVID-19 pandemic" Moderator: Vice President Noriko Osumi, Tohoku University  Opening Remarks  - Opening address (President Hideo Ohno, Tohoku University)  - Opening address (Rector Prof. Dr. Bernhard Eitel, Heidelberg University)  - Greetings (Dr. Klaus Vietze, Minister, Deputy Chief of Mission, German Embassy Tokyo)  Keynote Speech Prof. Fumihiko Imamura (Director, International Research Institute of Disaster Science)  Presidents' Panel  - Rector Prof. Dr. Bernhard Eitel, Heidelberg University  - President Nagahiro Minato, Kyoto University  - Vice President Prof. Dr. Thomas Hirth, Karlsruhe Institute of Technology  - President Hideo Ohno, Tohoku University  - Prof. Dr. Hiltraud Casper-Hehne, Representative for International Affairs, University of Göttingen  - President Shojiro Nishio, Osaka University  Closing (Vice President Noriko Osumi, Tohoku University)

#### **PROGRAM**

### FRIDAY, SEPTEMBER 10, 2021

DE	JP	Program
08:30-09:50	15:30-16:50	Virtual Poster Session for Early-Career Researchers (Live Presentations and Q&A)  Moderators: Dr. Tafrishi Seyed Amir (Specially Appointed Assistant Professor, School of Engineering, Tohoku University) Dr. Tomas Kulvicius (Postdoctoral Researcher, Department for Computational Neuroscience, University of Göttingen)
10:00-12:00	17:00-19:00	Plenary Session  Moderator: Vice President Masahiro Yamaguchi, Tohoku University  Presentations from the Students' Workshop Groups Comments from the Presidents Research Plan Reports from the Working Group Projects Summary Report of the 8th Presidents' Conference and Declaration of Joint Statement (Prestdent Hideo Ohno, Tohoku University)  Closing Remarks (Prof. Dr. Hiltraud Casper-Hehne, Representative for International Affairs, University of Göttingen, the host university for the next Conference)

## **CURRICULA VITAE**

University Representatives 006-028

– Guest Speakers 029-035

### PROF. DR RER. NAT. HABIL. DR H.C. BERNHARD EITEL

HEIDELBERG UNIVERSITY RECTOR



#### Personal Information

Born in 1959 in Karlsruhe.

#### **Education**

1994 Habilitation, Department of Geography, University of Stuttgart Habilitation
Title: "Kalkreiche Decksedimente und Kalkkrustengenerationen in Namibia:
Zur Frage der Herkunft und Mobilisierung des Calciumcarbonats." ("CalciumRich Cover Beds and Calcrete Generations in Namibia: On the Origin and

Mobilization of the Calcium Carbonate")

1989 Doctorate, Department of Geography, University of Stuttgart (with Honours)

Dissertation Title: "Morphogenese im südlichen Kraichgau unter besonderer Berücksichtigung tertiärer und pleistozäner Decksedimente. Ein Beitrag zur Landschaftsgeschichte Südwestdeutschlands." ("Morphogenesis in the South-ern Kraichgau with Respect to the Tertiary and Pleistocene Cover

Beds: A Contri-bution to Landscape History in Southwest Germany")

1980–1986 Staatsexamen, Geography and German, University of Karlsruhe (TH)

#### **Academic Career**

Since 2001 Full Professorship (C4) of Physical Geography, Director of the Institute of

Geography, Universität Heidelberg, Director of the Institute of Geography of

Heidelberg University

2001 Offered full professorship of Physical Geography, University of Bayreuth

(declined)

2000 Offered full professorship (C4) of Physical Geography, University of Göttingen

(declined)

1995 Professor (C3) for Physical Geography, University of Passau

1989-1995 Akademischer Rat (Associate Professor), Department of Geography, University

of Stuttgart

1989 Scientist at the Department of Geography, University of Stuttgart

1986-1989 Scientist at the Department of Geography and Geoecology, University of

Karlsruhe (TH)

#### Functions in Academic Self-Administration

Since 2007	Rector of Heidelberg University	/
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2006–2007 Vice Dean for Earth Sciences, Faculty of Chemistry and Earth Sciences

2005-2006 Spokesman of the University Senate

2004-2006 Dean of the Combined Faculties of Natural and Mathematical Sciences and

Dean of the Faculty of Chemistry and Earth Sciences



2002–2004 Vice Dean for Earth Sciences, Faculty of Chemistry and Earth Sciences

Since 2001 Director, Institute of Geography

#### Memberships (Selection)

Since 2021	Member of the Board of Directors of the League of European Research Universities (LERU)
2018-2020	Chairman of the Baden-Württemberg state Rectors' Conference
Since 2017	Vice Chairman Council Science Media Center Germany (SMC)
2016-2018	Vice Chairman of the Baden-Württemberg state Rectors' Conference
2012-2014	Spokesman of the German U15, a strategic interest group for outstanding research universities with top medical faculties
2006-2007	Member of the Scienti c Advisory Board for the Research Group (AK) on Geomorphology (Deutscher AK für Geomorphologie in der DGfG e.V.)
2005	Commission Member of the State of Niedersachsen Commission for the Evaluation of Research in the Departments of Geography in the State's Universities
2004-2009	Member of the UNESCO-IGCP 500 Management Group "Westerlies and Monsoons: Impacts of Climate Change and Variability on Dryland Environments, Hydrology and People"
2004-2007	Committee Member of the Heidelberg Geographic Society (Heidelberger Geographischen Gesellschaft [HGG])
2002	Steering Committee Member of the GeoUnion (Alfred-Wegener-Stiftung)
2002-2007	Member of the Executive Commission of the International Association of Geomorphologists (IAG)-Working Group on "Interaction between Fluvial, Aeolian and Lacustrine Processes in Arid Regions"
2002-2006	Chairman of the Research Group on Geomorphology in the German Society for Geography
2002-2004	Chairman of the Heidelberg Geographic Society
1994-2002	Member of the Supervisory Board for the Research Group on Geomorphology in the German Society for Geography $ \frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{2} \left( \frac{1}{2} \right) \left( \frac{1}{2} \right)$

#### **Awards and Distinctions**

2021	Awarded with the "Order of the Rising Sun, Gold and Silver Star" of the state
	of Japan for the many years of commitment to the founding and build-up of
	HeKKSaGOn, a German–Japanese university consortium
2019	Awarded with the "Pro Universitate" medal of the Semmelweis University

#### **Awards and Distinctions**

	Budapest for the promotion of scientific exchange and partnership between the universities of Budapest and Heidelberg
2016	Honored by the Geological Society of America with the "Farouk El-Baz Award for Desert Research" for pioneering achievements in researching the environmental history of deserts
2015	Awarded honorary doctorate by the Comenius University in Bratislava
2011	"Ordre des Palmes Académiques" (highest grade) by the French Republic for significant contributions to the French higher education system
2010	Member of the German Academy of Sciences Leopoldina, National Academy of Sciences
2009	Elected as corresponding member of the German Archaeological Institute (DAI)
2008	Member of the German Academy of Science and Engineering (acatech)

#### **Areas of Research**

Geomorphology, Soil Geography, Geoecology, Geoarchaeology, Arid Environments and Dryland Research, in particular in Europe, the Arctic, Southern Africa, South America, China (Xinjiang).

#### **Selected Publications**

- Eitel, B., van der Borg, K., Eberle, J. & Megies, H. (2002): Late Pleistocene/Early Holocene glacial history of northern Andréeland (Northern Spitsbergen/Svalbard Archipelago): evidence from glacial and uvio-glacial deposits.-Z. Geomorph. N. F. 46: 337–364.
- Eitel, B., Hecht, S., Mächtle, B., Schuhkraft, G., Kadereit, A., Wagner, G. A., Kromer, B., Unkel, I. & Reindel, M. (2005): Geoarchaeological evidence from desert loess in the Nazca-Palpa region, southern Peru: Palaeoenvironmental changes and their impact on Pre-Columbian cultures.
   Archaeometry 47: 137–185.
- Eitel, B., Kadereit, A., Blümel, W. D., Hüser, K. Lomax, J. & Hilgers, A. (2006): Fluvial deposits in the Upper Hoanib river catchment, northwestern Namibia: New evidence of environmental changes before and after the Last Glacial Maximum at the eastern Namib Desert Margin.—Palaeogeography, Palaeoclimatology, Palaeoecology 234: 201–222.
- Eitel, B. & Mächtle, B. (2009): Man and environment in the eastern Atacama Desert (Southern Peru): Holocene climate changes and their impact on Pre-Columbian cultures. In: Reindel, M. & Wagner, G.A. (ed.): New Technologies for Archaeology, Springer Verlag, Berlin, Heidelberg, pp. 17–37.

# PROF. DR. MARC-PHILIPPE WELLER

HEIDELBERG UNIVERSITY
VICE-RECTOR FOR INTERNATIONAL AFFAIRS



#### Education

2008 Habilitation, University of Cologne2004 Doctorate, Heidelberg University

1995–2002 Law studies, Heidelberg University and University of Montpellier

#### **Academic Career**

2019	Visiting Professor, National Taiwan University (NTU)
2018	Visiting Professor, University of Vienna ("Das politische IPR unserer Zeit")
2017	Visiting Professor, Georgetown University in Washington, DC ("Doing business in Europe") $$
2017	Visiting Professor, Nancy-Université ("Droit international privé")
2015-2018	Visiting Professor, University of Göteborg ("Comparative Company Law")
2014 to present	Professor of Private Law, Commercial Law, International Private Law, and Comparative Law, Heidelberg University
2011-2014	Professor of Private Law, Commercial Law, Corporate Law, and Comparative Law, University of Freiburg
2008-2011	Professor of Private Law, International Company Law, and European Business Law, University of Mannheim
2005-2008	Assistant Professor, Institute for Private International and Comparative Law, University of Cologne

#### **Academic Administration**

2019 to present	Vice-Rector for International Affairs, Heidelberg University
2014 to present	Director of the Institute for Comparative Law, Conflict of Law, and International Business Law, Heidelberg University
2011-2014	Director of the Institute for Commercial and Business Law, University of Freiburg
2008-2011	Director of the Institute of Business Law, University of Mannheim

#### **Scholarships and Awards**

2008	Helmut Schippel Award from the German Notary Association for the post-
	doctoral dissertation (Habilitation)
2005-2008	Grant from the German Research Foundation (DEG)



- Member of German Council for International Private Law (Federal Ministry of Justice), German Association of Professors of Civil Law, Society of Comparative Legislation (Paris), German Corporate Lawyers Association (VGR), German Institute for Art and Law Heidelberg (IFKUR), German-French Lawyers Association (President since 2016), German Society of International Law (member of expanded Executive Board), German Lawyers' Day (DJT), German Society for Comparative Law, European Group for Private International Law (GEDIP)
- Co-editor, "Zeitschrift für Unternehmens- und Gesellschaftsrecht" [Journal for Business and Corporate Law] (since 2011)
- Co-editor, "Zeitschrift für Europäisches Privatrecht" [Journal for European Private Law] (since 2012)

#### DR. NAGAHIRO MINATO

**KYOTO UNIVERSITY PRESIDENT** 



#### Education/Career

1975 Bachelor of Medicine, Kyoto University, Japan 1983 Doctor of Medicine (MD, PhD), Kyoto University, Japan

Research Interests and Experience: Cancer and Immunology

#### **Positions Held**

Oct. 2020-Present President, Kyoto University		
2017-2020	Provost, Kyoto University	
2014–2020	Executive Vice-President for Strategy Coordination, Research, Planning, and Hospital Administration, Kyoto University	
2010-2014	Dean, Graduate School of Medicine, Kyoto University	
1992–2016	Professor, Department of Immunology and Cell Biology, Graduate School of Medicine, Kyoto University	
1990-1992	Associate Professor, Department of Medicine, Jichi Medical School	
1980-1990	Assistant Professor, Department of Medicine, Jichi Medical School	
1977–1980	Research Associate, Department of Immunology and Microbiology, Albert Einstein College of Medicine, New York, USA	
1975-1977	Resident, Chest Disease Research Institute Hospital, Kyoto University	
1975	Graduated from the School of Medicine, Kyoto University	

#### Awards, Decorations, and Memberships

2014	JCA-CHAAO Award
2016	The Pharmaceutical Society of Japan Award for Drug Research and Development
2018	International Okamoto Award

Board Member, The Japan Association of National Universities (2020-Present)

Member, Central Council for Education, Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2018-Present)

President, The 43rd Annual Meeting of the Japanese Society for Immunology (2014)

Associate Member, Science Council of Japan (2006-2020)

Member, Council of the Japanese Immunology Society (2006-Present)

Executive Editor, Immunology Letters, the official journal of the Federation of European Immunology Societies (1998–2010)



KYOTO UNIVERSITY
EXECUTIVE VICE-PRESIDENT FOR GENDER EQUALITY, INTERNATIONAL
AFFAIRS, PUBLIC RELATIONS, AND EXTERNAL AFFAIRS

#### Education

2009	Ph.D. in Sociology of Education, Graduate School of Education, Kyoto University
1981–1983	Doctoral program in Sociology of Education, Graduate School of Education, Kyoto University
1981	M.A. in Sociology of Education, Graduate School of Education, Kyoto University
1978	B.A. in Education, Faculty of Education, Kyoto University

#### **Employment**

Oct. 2020-	Executive Vice-President for Gender Equality, International Affairs, Public Relations, and External Affairs (University Fund Administration and Alumni Affairs), Kyoto University
Apr. 2017– Mar. 2020	Dean, Graduate School of Education, Kyoto University
Apr. 2016- Mar. 2020	Director, Faculty Consort for Education, Kyoto University
Apr. 2015 – Mar. 2020	Member of the Education and Research Council, Kyoto University
Apr. 2014– Mar. 2017	Vice-Dean, Graduate School of Education, Kyoto University
Apr. 2005– Mar. 2021	Professor, Graduate School of Education, Kyoto University
Apr. 1998– Mar. 2005	Assistant Professor, Graduate School of Education, Kyoto University
Oct. 1996– Mar. 1998	Assistant Professor, Faculty of Education, Kyoto University
Apr. 1988– Sept. 1996	Assistant Professor, Faculty of Education, Shiga University
Apr. 1985– Mar. 1988	Lecturer, Faculty of Education, Shiga University
Apr. 1983– Mar. 1985	Lecturer, Teikyo University Junior College

#### Professional Memberships (Abbreviated List)

The Japan Society of Educational Sociology, the Japan Sociological Society, Kansai Sociological Association, Science Council of Japan, Kyoto City Social Education Committee, Konosuke Matsushita Memorial Foundation Research Grant Nomination Committee.

### PROF. YASUYUKI KONO

KYOTO UNIVERSITY
VICE-PRESIDENT FOR INTERNATIONAL STRATEGY



#### **Education record**

Mar. 1981	Bachelor degree, Faculty of Agriculture, The University of Tokyo
Mar. 1983	Master degree, Graduate School of Agriculture, The University of Tokyo
Mar. 1986	Doctor degree, Graduate School of Agriculture, The University of Tokyo

#### Job record

Job Lecol d	
Apr. 1986- Jul. 1987	JSPS Postdoctoral Fellow, Graduate School of Agriculture, The University of Tokyo
Jul. 1987- Aug. 1992	Assistant Professor, Center for Southeast Asian Studies, Kyoto University
Aug. 1992- Aug. 1994	$\label{thm:local_assistant_professor} \mbox{ Assistant Professor, Irrigation Management and Engineering Program, Asian Institute of Technology}$
Aug. 1994- Jul. 1998	Assistant Professor, Center for Southeast Asian Studies, Kyoto University
Aug. 1998- Dec. 2005	Associate Professor, Center for Southeast Asian Studies, Kyoto University
Dec. 2005- Now	Professor, Center for Southeast Asian Studies, Kyoto University
Apr. 2010- Mar. 2014	Vice Director, Center for Southeast Asian Studies, Kyoto University
Apr. 2014- Mar. 2018	Director, Center for Southeast Asian Studies, Kyoto University
Apr. 2018- Now	Vice President for international strategy, Kyoto University
May. 2018- Oct. 2020	Director, Kyoto University European Center
Nov. 2020- Now	Director, Kyoto University North American Center

#### PROF. DR. THOMAS HIRTH

KARLSRUHE INSTITUTE OF TECHNOLOGY (KIT)
VICE-PRESIDENT FOR INNOVATION AND
INTERNATIONAL AFFAIRS



#### Education

He studied chemistry at Universität Karlsruhe, one of the predecessors of the KIT, and then graduated in Karlsruhe at the Institute of Physical Chemistry and Electrochemistry.

#### **Academic Career**

From 1992 to 2007 Thomas Hirth worked at the Fraunhofer Institute for Chemical Technology ICT in Pfinztal, Germany and held various positions. In December 2007, Hirth became director of the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart.

Since April 2008, he in addition has been professor at the University of Stuttgart and head of the Institute of Interfacial Process Engineering and Plasma Technology IGVP of Stuttgart University.

From 2012 to 2015, Hirth was vice dean of Faculty 4 Energy-, Process-and Bio-Engineering of Stuttgart University.

From 2014 to 2019 Thomas Hirth was chairman of the steering committee in the research program "Bioeconomy Baden-Württemberg".

#### **Position Held**

Vice-President for Innovation and International Affairs, Karlsruhe Institute of Technology

#### Awards, Decorations, and Memberships

From 2012 to 2015, Hirth was spokesman of the Fraunhofer Group for Life Sciences and Member of the Presidential Council of the Fraunhofer-Gesellschaft.

From 2012 to 2020 he was a member of the DFG Process Engineering Review Board.

He is also Chairman of the ProcessNet Steering Committee and Spokesperson for THINKTANK Industrial Resource Strategies.

#### **Selected Publications**

- F. Derwenskus, F. Weickert, I. Lewandowski, U. Schmid-Staiger, T. Hirth
   Economic evaluation of up-and downstream scenarios for the co-production of fucoxanthin
   and eicosapentaenoic acid with P. tricornutum using flat-panel airlift photobioreactors with
   artificial light
  - Algal Research 51, 1-11 (2020)
- 2. I. Lewandowski, E. Bahrs, N. Dahmen, T. Hirth, T. Rausch, A. Weidtmann Biobased value chains for a growing bioeconomy Global change biology/Bioenergy 11, 4–8 (2019)
- 3. J. Barz, M. Haupt, C. Oehr, T. Hirth, P. Grimmer Stability and water wetting behavior of superhydrophobic polyurethane films created by hot embossing and plasma etching and coating



Plasma processes and polymers 16, (2019)

- 4. I. Jesswein, S. Uebele, A. Dieterich, S. Keller, T. Hirth, T. Schiestel Influence of surface properties on the dip coating behavior of hollow fiber membranes Journal of applied polymer science 135 (2018)
- 5. R. W. Scholz, T. Hirth Losses and efficiencies-From myths to data: Lessons learned from sustainable phosphorus management Resources, Conservation and Recycling 105, 211-215 (2015)



TOHOKU UNIVERSITY PRESIDENT



#### Education

1982 Ph. D of Electronic Engineering, University of Tokyo, Japan

#### **Professional Experience**

2018-	The 22nd President of Tohoku University
2016-2018	Director, Center for Spintronics Research Network, Tohoku University
2013-2018	Director, Research Institute of Electrical Communication, Tohoku University
2012-2018	Professor, Center for Innovative Integrated Electronic Systems, Tohoku University
2012-2013	Director, Laboratory of Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University
2010-2018	Principal Investigator, WPI-Advanced Institute for Materials Research
2010-2018	Director, Center for Spintronics Integrated Systems, Tohoku University
2004-2010	Director, Laboratory of Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University
1995-2018	Professor, Research Institute of Electrical Communication, Tohoku University
1994	Professor, Department of Electronic Engineering, Tohoku University
1988-1990	Visiting Scientist, IBM T. J. Watson Research Center, New York, USA
1983-1994	Associate Professor, Department of Electrical Engineering, Hokkaido University
1982-1983	Lecturer, Department of Electrical Engineering, Hokkaido University

#### Awards

JSAP Paper Award

2019

2019	ISCS Welker Award
2018	Fellow, Institute of Electrical and Electronics Engineers (IEEE)
2017	MEXT Commendation for Science and Technology
2016	C&C Prize
2016	Leo Esaki Prize
2016	DPS Paper Award
2015	JSAP Compound Semiconductor Electronics Achievement Award
2012	IEEE David Sarnoff Award
2012	JSAP Outstanding Achievement Award
2011	Distinguished Professor, Tohoku University
2011	Thomson Reuters Citation Laureates



2009	IEEE Magnetics Society, Distinguished Lecturer
2008	Distinguished Professor, Tohoku University
2006	Honorary Professor, Institute of Semiconductors, Chinese Academy of Sciences
2005	The 2005 Agilent Technologies Europhysics Prize
2005	Presidential Prize for Research Excellence
2005	Japan Academy Prize
2004	Fellow, Institute of Physics
2003	IUPAP Magnetism Prize
1998	IBM Japan Science Award

#### Research Field

#### Spintronics

Professor Hideo Ohno received the Ph.D. degree from the University of Tokyo in 1982.

He is currently the 22nd President of Tohoku University. He was Director of Research Institute of Electrical Communication, Tohoku University, Director of Center for Spintronics Integrated System, Tohoku University, Principal Investigator of WPI Advanced Institute for Materials Research, Tohoku University, Professor of Center for Innovative Integrated Electronic Systems, Tohoku University and Director of Center for Spintronics Research

Network, Tohoku University. His current research interests include physics and applications of spin phenomena in semiconductors and metal-based nanostructures. Professor Ohno received the IBM Japan Science Award (1998), the IUPAP Magnetism Prize (2003), Japan Academy Prize (2005), Presidential Prize for Research Excellence, Tohoku University (2005) and the 2005 Agilent Technologies Europhysics Prize. He has been a fellow of the Institute of Physics (IOP) since 2004, an honorary professor of Institute of Semiconductors, Chinese Academy of Sciences since 2006, a fellow of the Japan Society of Applied Physics (JSAP) since 2007, a fellow of American Physical Society (APS) since 2012 and a fellow of Institute of Electrical and Electronics Engineers since 2018. IEEE Magnetics Society named him for the Distinguished Lecturer for 2009. He was awarded the Thomson Reuters Citation Laureate (2011), the JSAP Outstanding Achievement Award, IEEE David Sarnoff Award (2012), JSAP Compound Semiconductor Electronics Achievement Award (2015), DPS Paper Award (2016), Leo Esaki Prize (2016), C&C Prize (2016), MEXT Commendation for Science and Technology (2017), ISCS Welker Award (2019) and JSAP Paper Award (2019). He was appointed as the Distinguished Professor at Tohoku University.



TOHOKU UNIVERSITY EXECUTIVE VICE PRESIDENT FOR GENERAL AFFAIRS, FINANCIAL AFFAIRS AND INTERNATIONAL RELATIONS



#### **Positions Held**

Since 2018	Executive Vice President for General Affairs, Financial Affairs and International Relations, Tohoku University
2012-2018	Executive Vice President for General Affairs, International Relations, Tohoku University Director, Office of President, Tohoku University
2009-2012	Executive Vice President for Financial Affairs, Tohoku University Director, Tohoku University Library
2008-2009	Executive Vice President for International Affairs and Legal Affairs, Tohoku University
2006-2008	Executive Vice President for Education and Professional Graduate Schools, Tohoku University
2004-2006	Dean, Faculty and Graduate School of Law, Tohoku University Member of the President Election Committee, Tohoku University
2001-2003	Member of the Education and Research Council, Tohoku University

#### Teaching and Research Career:

Since 2001	Professor of International Law, Graduate School of Law, Tohoku University
1999-2000	Professor of International Law, Faculty of Law, Tohoku University
1996-1997	Visiting Scholar, Harvard-Yenching Institute, Harvard University, U.S.A
1988-1990	Visiting Fellow, Research Centre for International Law, University of Cambridge, UK
1986-1999	Associate Professor of International Law, Faculty of Law, Tohoku University
1983-1986	Research Associate, Faculty of Law, University of Tokyo

#### **Education**

1983 B.A. in Faculty of Law, University of Tokyo

#### Awards and Memberships (Selection)

2021-	Executive Council Member, Japan Chapter of the Asian Society of International Law
2020-	President, Japanese Association of World Law
2020-	Treasurer, Japanese Society of International Law
2019-	Council Member, International Law Association of Japan (ILA Japan Branch)
2018-2020	Editor in Chief and Chairperson of the Editorial Committee, Japanese Society of International Law
2016-	Executive Council Member, Japanese Society of International Law

#### Awards and Memberships (Selection)

2014-2017	Chairperson of the Planning Committee, Japanese Association of World Law
2012-2018	Chairperson of the Committee for Young Researchers, Japanese Society of International Law $$
2006-	Member, Planning Committee, International Law Association of Japan (ILA Japan Branch)
2005-	Council Member, Japanese Association of World Law
2003-2006	Member of the Editorial Committee, Japanese Society of International Law
2000-2004	Member, International Committee on Accountability of International Organization, International Law Association (ILA)
2000-2003	Member of the Planning Committee, Japanese Society of International Law
2000-	Council Member, Japanese Society of International Law
1994	27th Adachi Mineichiro Memorial Award

Toshiya Ueki is the Executive Vice President for General Affairs, Financial Affairs and International Relations of Tohoku University and is also a Professor of International Law at the Faculty and Graduate School of Law. Prof. Ueki served as the Dean of the Faculty and Graduate School of Law (2004–2006) and from 2006 he has been an Executive Vice President of Tohoku University.

He has authored or co-authored articles on international law and written many books on the subject. He has been recognized for his exceptional work in the fields of transnational / international law and for his studies on the theory of international law related to international organizations. For his outstanding academic achievements, he was awarded the 27th Adachi Mineichiro Memorial Award in 1994. From 1988 to 1990 he was a Visiting Fellow at the Research Centre for International Law at the University of Cambridge, UK, and from 1996 to 1997 he was a Visiting Scholar at the Harvard-Yenching Institute at Harvard University, USA. Prof. Ueki is a member of a number of distinguished academic societies including the Japanese Society of International Law and the International Law Association, and from May 2020 he is serving as the President of the Japanese Association of World Law.

As EVP of Tohoku University, Prof. Ueki strives to develop Tohoku University's international relationships, academic affairs, and its global network through active participation in international academic consortia and other global activities.



TOHOKU UNIVERSITY
VICE PRESIDENT FOR PUBLIC RELATIONS AND
PROMOTION OF DIVERSITY



Noriko Osumi is vice president of public relations and the promotion of diversity at Tohoku University.

A graduate of Tokyo Medical and Dental University, Osumi has a Ph.D. in craniofacial developmental biology. She has been a professor at Tohoku University's School of Medicine since 1998, working in the field of developmental neuroscience.

Osumi's research interests include development of the brain and models of neurodevelopmental disorders to understand underlying neuropathology.

Recently, she has been studying the regulatory mechanisms for transgenerational effects of paternal aging with regards to offspring behaviour. Handling rodent embryos and imaging brain cells are the expertise of her lab.

Osumi sits on various governmental committees and has particular interest in those dealing with ethical issues, grant system development and career paths for young scientists. She served as a member of Science Council of Japan (2005–2014) and has been assigned as Associate Fellow of TWAS (2012-) and as Associate Member of EMBO (2018-). She was a representative of the Japan Science and Technology Agency's CREST project (2005–2010) and of the KAKENHI Group Grant (2016–2020), supported by the Ministry of Education, Culture, Sports, Science and Technology.

As Tohoku University's first female vice president from 2018, Osumi is passionate about gender equality and diversity, and being a role model for young women in science. She heads the Tohoku University Center for Gender Equality Promotion and is an active member of Japan's diversity network.

Osumi is a keen reader, and her love of books is also reflected in her work. She currently serves as director of Tohoku University Libraries. She has contributed to write several books on brain development, evolution, and disease for public, and also translated three books so far, from English into Japanese: "Essential Developmental Biology" by Jonathan M.W. Slack, "The Birth of the Mind" by Gary Marcus and "Why Aren't More Women in Science?" a collection of essays edited by Stephen J. Ceci and Wendy M. Williams.

## PROF. DR. MASAHIRO YAMAGUCHI

TOHOKU UNIVERSITY
VICE PRESIDENT FOR EDUCATION REFORM AND
GLOBAL ENGAGEMENT



Masahiro Yamaguchi is Vice President for Education Reform and Global Engagement, and also Director of Advance Graduate School, Director of the Global Learning Center and the Center for Culture and Language Education in the Institute for Excellence in Higher Education, as well as Director of the International Strategy Office at Tohoku University. He has played an important role in the internationalization of the university, in particular in designing the international strategy and international education. He has devoted himself to the implementation of the Tohoku University's Top Global University Project.

He has been a professor at the Department of Physics in the Graduate School of Science since 2003. His research area is theoretical particle physics and cosmology. He was awarded the Nishinomiya-Yukawa Memorial Prize in 1996.

# PROF. DR. HILTRAUD CASPER-HEHNE

UNIVERSITY OF GÖTTINGEN
REPRESENTATIVE FOR INTERNATIONAL AFFAIRS



#### **Education and Academic Career**

Since 2004	W2 Professor of German as a Foreign Language and Linguistics, De-partment
	of Intercultural German Studies, Department of German Phi-lology, University
	of Göttingen

2003	Venia Legendi; university teaching credentials for the subject "German as a
	Foreign Language (Intercultural German Studies)", Faculty of Lan-guages
	and Literature, University of Bayreuth; Post-doctoral degree on the topic:
	"Everyday intercultural communication between German native speakers and
	Anglophone US-American foreign language learners. Face work in narrative,
	discursive and directive discussions"

1997-2004	Commissioned by the Institute for German Studies, responsible for the
	development and implementation of the degree programme "German as a foreign
	and second language" for students in teachers' training, TU Braunschweig

1996-2004	Deputy Head of Language Centre, Technical University (TU) Braun-schweig,
	Germany Department Head "German as a Foreign Language" Academic
	Counsellor Language Centre TU Braunschweig

1990-1992	Distance Learning Business Administration, Business Academy Bad
	Harzburg, Germany

1989-1995	Teacher of special tasks; Head of International Summer Courses, Lan-guage
	Centre, TU Braunschweig

1987 Doctorate in linguistics, Institute for German Studies, TU Braunschweig

1986–1988 University Lecturer, German Academic Exchange Service (DAAD), Department of German Studies, School of Mechanical Engineering Shanghai, People's

Republic of China

1982 Degree course in German Studies/History and English Literature, Higher Teaching, TU Braunschweig, 1st state examination

#### **Positions Held**

Since 2021	Representative for International Affairs, University of Göttingen
2009-2021	Vice-President for International Affairs, University of Göttingen (2009–2011 additionally Vice-President for Research)
Since 2015	Head, "Refugees" Task Force, University of Göttingen
2007-2009	Member of the Senate, University of Göttingen

#### **Awards and Decorations**

2010	Distinguished Visiting Professor at Nanjing University, People's Republic of China
2009	Honorary Professor at the Beijing Foreign Studies University, People's Republic
	of China Appointments to national and international posts, committees, expert
	aroups



Sir	nce 2020	Member of Executive Committee of the European University ENLIGHT
Siı	nce 2018	Head of the "Regional Research Team Europe" for the World Humanities Report in cooperation with UNESCO-CIPSH
20	118	Member, Ad-hoc Expert Group "European Universities", EU Commission, Brussels, Belgium
Siı	nce 2018	Chair of the working, group "China Competence in Lower Saxony" of the Ministry of Science and Culture of Lower Saxony
20	118-2020	Member, Steering Committee "Global Education", British Council, London, UK
Siı	nce 2016	Member, Board, German Academic Exchange Service, Bonn, Germany
20	15-2021	Member, Language Advisory Board, Goethe Institute, Munich, Germany
Siı	nce 2015	Member, Advisory Board, Society for Intercultural German Studies, Bayreuth, Germany
20	14-2021	Chair, Board of Trustees, Academic Confucius Institute, Göttingen/Nan-jing/Beijing
20	14-2016	Member, Executive Board, COIMBRA Group, Brussels
20	14-2019	German Chair, "Intercultural German Studies" Working Group in China, Beijing
20	114	Chair, Expert Circle on developing of a China strategy, German Federal Ministry of Education and Research (BMBF), Berlin
20	113-2019	Member, Board of Directors, U4 Network; Ghent, Groningen, Uppsala, Göttingen
20	112-2015	Member, Board, Humanities in the European Research Area (HERA) Founding activities and memberships
20	05-2012	Founder and CEO, not-for-profit Institute for Intercultural Communication (IIK e.V.), University of Göttingen
Sir	nce 2004	Founder and Director, Institute for German-Chinese Cultural Comparison, University of Göttingen (since Nov. 2005: German-Chinese Institute for Intercultural German Studies and Culture Comparison)

#### **Selected Publications**

Casper-Hehne, Hiltraud/Egron-Polak, Eva/Green, Madeleine/Matei, Liviu/Nokkola, Terhi/Purser, Lewis/Teixeira, Pedro (Hrsg.) (ab März 2019): Internationalisation of Higher Education. Developments in the European Higher Education Area and Worldwide. DUZ Academic Publisher. Berlin.

Casper-Hehne, Hiltraud/Reiffenrath, Tanja (Hrsg.) (2017): Internationalisierung der Curricula an Hochschulen. Konzepte, Initiativen, Maßnahmen. W. Bertelsmann Verlag GmbH & Co. KG. Bielefeld.



Casper-Hehne, Hiltraud (2017): Die Rolle der Geisteswissenschaften an der Universität Göttingen aus der Sicht der Hochschulleitung. In: Schaede, Stephan (Hrsg.): Unvermeidliche Königsdisziplinen. Zur forschungspolitischen Relevanz des Selbstverständnisses von Geistes- und Sozialwissenschaften im norddeutschen Raum. Reihe Loccumer Protokolle Band 79/16. Rehburg-Loccum, 73-87.

Casper-Hehne, Hiltraud/Müller, Andreas (2017): Umbrüche gestalten, zwischen Hochschule, Schulpraxis und Bildungsadministration. In: Mercator-Institut für Sprachförderung und Deutsch als Zweitsprache (Hrsg.): Blick zurück nach vorn. Perspektiven auf sprachliche Bildung in Lehrerbildung und Forschung. Erfahrungen aus den geförderten Forschung-und Entwicklungsprojekten. Köln: Mercator-Institut, 33–35.

The complete list of publications can be found here: https://www.uni-goettingen.de/en/591929.html

### PROF. DR. SHOJIRO NISHIO

### OSAKA UNIVERSITY PRESIDENT



#### **Education**

1980	Doctor of Philosophy in Engineering, Kyoto University
1977	Master of Engineering, Kyoto University
1975	Bachelor of Engineering, Kyoto University

#### **Academic Career/Positions Held**

2015-	President, Osaka University
present	
2013-2015	Distinguished Professor, Osaka University
2013-2015	Director, Cybermedia Center, Osaka University
2007-2011	Executive Vice President, Osaka University
2004-2006	Advisor to the President, Osaka University
2003-2007	Dean, Graduate School of Information Science and Technology, Osaka University
2002-2015	Professor, Graduate School of Information Science and Technology, Osaka University
2001-2008	Program Director (Information and Networking Area), Ministry of Education, Culture, Sports, Science and Technology (MEXT)
2000-2003	Founding Director, Cybermedia Center, Osaka University
1998-2002	Professor, Graduate School of Engineering, Osaka University
1992-1998	Professor, School of Engineering, Osaka University
1992-1992	Associate Professor, School of Engineering Science, Osaka University
1989-1992	Associate Professor, Education Center for Information Processing, Osaka University
1988-1989	Associate Professor, School of Engineering Science, Osaka University
1988-1988	Visiting Fellow, British Columbia Advanced Systems Institute, Canada
1980-1981	Visiting Research Associate Professor, University of Waterloo, Canada
1980-1988	Assistant Professor, School of Engineering, Kyoto University

#### Awards, Decorations, and Memberships

#### Awards and Decorations

- Person of Cultural Merits (selected by the Minister of Education, Culture, Sports, Science and Technology) (2016)
- Distinguished Achievement and Contributions Award in the information science and technology field from Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2014)



- Distinguished Achievement and Contributions Award from IEICE (2014)
- Distinguished Achievement Award from Tateisi (OMRON) Science and Technology Foundation (2012)
- Medal with Purple Ribbon from the Emperor of Japan (2011)
- Distinguished Achievement and Contributions Award from IPSJ (2011)
- Distinguished Achievement and Contributions Award from DBSJ (2011)
- Distinguished Achievement Award from Funai Foundation for Information Technology (FFIT) (2005)

#### Memberships

- Institute of Electrical and Electronics Engineers (IEEE) (Computer Society, Technical Committee on Data Engineering, Asian Coordinator: 1992–1997)
- Association for Computing Machinery (ACM)
- Information Processing Society of Japan (IPSJ) (Honorary Member) (member of the board of trustees: 1999–2000, Vice President: 2012–2013, President 2017–2019)
- Institute of Electronics, Information and Communication Engineers (IEICE) (Honorary Member)
- Database Society of Japan (DBSJ) (member of the board of trustees and auditors: 2002-2011, President: 2012-2013)
- Japan Federation of Engineering Society (JFES)
- Fellow of IEEE (Life Fellow), IPSJ, IEICE, and JFES.
- Science Council of Japan (2006-2020, Chair of Informatics: 2011-2014)

#### **Selected Publications**

- M. Shirakawa, T. Hara, and S. Nishio: IDF for Word N-grams, ACM Trans. on Information Systems, Vol. 36, No. 1, Article No. 5, June 2017.
- M. Shirakawa, K. Nakayama, T. Hara, and S. Nishio: Wikipedia-based Semantic Similarity Measurements for Noisy Short Texts Using Extended Naive Bayes, IEEE Trans. on Emerging Topics in Computing, Vol. 3, No. 2, pp. 205-219, June 2015.
- Y. Komai, Y. Sasaki, T. Hara, and S. Nishio: KNN Query Processing in Mobile Ad Hoc Networks, IEEE Trans. on Mobile Computing, Vol. 13, No. 5, pp. 1090-1103, May 2014.
- Y. Okaie, T. Nakano, T. Hara, and S. Nishio: Distributing Nanomachines for Minimizing Mean Residence Time of Molecular Signals in Bionanosensor Networks, IEEE Sensors Journal, Vol. 14, No. 1, pp. 218-227, Jan. 2014.
- T. Yoshihisa and S. Nishio: A Division-Based Broadcasting Method Considering Chanel Bandwidths for NVoD Services, IEEE Trans. on Broadcasting, Vol. 59, No. 1, pp. 62-71, Mar. 2013.



- M. Erdmann, K. Nakayama, T. Hara, and S. Nishio: Improving the Extraction of Bilingual Terminology from Wikipedia, ACM Trans. on Multimedia Computing, Communications and Applications, Vol. 5, No. 4, Article 31, pp. 31–1–31–17, Oct. 2009.
- K. Harumoto, T. Nakano, S. Fukumura, S. Shimojo, S., and S. Nishio: Effective Web Browsing through Content Delivery Adaptation, ACM Transactions on Internet Technology, Vol. 5, No. 4, pp. 571-600, Nov. 2005.
- H. Hayashi, T. Hara, and S. Nishio: Updated Data Dissemination for Updating Old Replicas in Ad Hoc Networks, ACM/Springer Personal and Ubiquitous Computing Journal, Vol. 9, No. 5, pp. 273–283, Sept. 2005.
- S. Nishio: Opening up New Vistas on Advanced Multimedia Content Processing, New Generation Computing, Vol. 18, No. 4, pp. 295–303, Sept. 2000.
- T. Hara, K. Harumoto, M. Tsukamoto, and S. Nishio: Database Migration: A New Architecture for Transaction Processing in Broadband Networks, IEEE Trans. on Knowledge and Data Engineering, Vol. 10, No. 5, pp.839-854, Sept.-Oct. 1998.
- C.-L. Goh, M. Tsukamoto, and S. Nishio: Knowledge Discovery in Deductive Databases with Large Deduction Results: The First Step, IEEE Trans. on Knowledge and Data Engineering, Vol. 8, No. 6, pp.952-956, Dec. 1996.
- J. A. Brzozowski and S. Nishio: On Serializability, Inter. J. of Comput. and Infor. Sciences, Vol. 14, No. 6, pp. 387-403, Dec. 1985.
- S. Nishio, T. Ibaraki, H. Miyajima, and T. Hasegawa: Evaluation of the File Redundancy in Distributed Database Systems, IEEE Trans. on Software Eng., Vol. SE-11, No. 2, pp. 199-205, Feb. 1985.



OSAKA UNIVERSITY
EXECUTIVE VICE PRESIDENT



#### Education

1994	Doctor of Engineering, Department of Mechanical Engineering, Graduate School of Engineering Science, Osaka University
1989	Master of Engineering, Department of Mechanical Engineering, Graduate School of Engineering Science, Osaka University
1987	Bachelor of Engineering, Department of Mechanical Engineering, School of Engineering Science, Osaka University

#### **Academic Career**

2005- present	Professor, Graduate School of Engineering Science, Osaka University
2001-2005	Associate Professor, Graduate School of Engineering, Kyoto University
1999-2001	Associate Professor, Faculty of Engineering, Ehime University
1998-1999	Visiting Scholar, Center for Turbulence Research, NASA-Ames/Stanford University
1996-1998	Associate Professor, Faculty of Engineering, Ehime University
1989-1996	Assistant Professor, Faculty of Engineering, Ehime University

#### **Position Held**

2017- present	Executive Vice President, Osaka University
2015-2017	Executive Advisor to President, Osaka University
2013-2017	Dean, Graduate School of Engineering Science, School of Engineering Science, Osaka University
2011-2013	Member of University Council, Osaka University
2009-2011	Associate Dean, Graduate School of Engineering Science, Osaka University

#### Awards, Decorations, and Memberships

2019	Associate Editor, Journal of Fluid Mechanics, University of Cambridge
2006	RONBUN Prize (Japan Society of Fluid Mechanics)
2002	RYUMON Prize (Japan Society of Fluid Mechanics)
1997	JSME (Japan Society of Mechanical Engineers) Medal for Outstanding Paper
1994	JSME (Japan Society of Mechanical Engineers) Young Engineers Award

#### **Selected Publications**

- G. Kawahara, M. Uhlmann, L. van Veen, The Significance of Simple Invariant Solutions in Turbulent Flows, Annual Review of Fluid Mechanics, 44 (2012), 203–225.
- G. Kawahara, S. Kida, Periodic motion embedded in plane Couette turbulence: Regeneration cycle and burst, Journal of Fluid Mechanics, 449 (2001), 291–300.

# **DR. KLAUS VIETZE**MINISTER, DEPUTY CHIEF OF MISSION, GERMAN EMBASSY TOKYO



Born: February 11th, 1963 in Berlin (East)

1984–1989 Studies of Japanology and Economics, Humboldt-University Berlin,	
1990–1991 Postdoctoral Fellowship, Harvard–University	
1992–1994 Entry into German Foreign Service	
1994–1995 EU-ASEAN Coordinator, Foreign Office, Berlin	
1995–1999 Consul, German Consulate General, Osaka/Kobe,	
1999-2002 Desk Officer, Japan, Korean Peninsula, Foreign Office, Berlin	
2002-2004 Delegate to CTBTO, IAEA, German Permanent Mission to the UN in View	na,
2004–2008 Press Officer, German Embassy Tokyo	
2008–2012 Deputy Head of East-Asia Division, China, German Foreign Office, Berli	n
2012–2014 Head of Political Department, German Embassy Beijing	
2014–2018 Head of Division for Africa, Asia–Pacific, Office of the Federal Presiden	t
2018- Minister, Deputy Chief of Mission, German Embassy Tokyo	



TOHOKU UNIVERSITY
DIRECTOR, INTERNATIONAL RESEARCH INSTITUTE
OF DISASTER SCIENCE



#### **Education**

-1989	Tohoku University, Dr. Eng. in Coastal Engineering
-1986	Tohoku University, M. S. Eng. in Coastal Engineering
-1984	Tohoku University, B. S. in Civil Engineering

#### **Academic Career**

-2014- present	Director of International research Institute of Disaster Science (IRIDeS), Tohoku University
-2012-2013	Deputy director of IRIDeS, Tohoku University
-2000-2012	Prof., Disaster Control Research Center, Tohoku Univ
-1998-2000	Affiliated Faculty, DPRI, Kyoto Univ
-1995-2000	Assoc. Prof, Disaster Control Research Center, Tohoku Univ
-1993-1995	Assoc. Prof., SCE, Asian Institute of Technology
-1989-1990	Research Associate, Tohoku University

#### **Position Held**

-2020 Present Assistant to the President

#### Awards, Decorations, and Memberships

- 2003, Descartes Prize Awards Final Nomination, European Commission for Research
- 2007, The 2007 Continuing International Contribution Award in Japan Society of Civil Engineering
- 2014, 65th NHK Broadcast Culture Award
- 2015, MEXT Minister's Commendation Science and Technology Award (Science and Technology Promotion Division)
- 2016, Prime Minister's Commendation for Disaster Prevention Distinguished Persons
- 2020, Japan Association for Earthquake Engineering (Paper Award)
- 2020, Hamaguchi International Award (Minister of Land, Infrastructure, Transport and Tourism Award)
- 2021, MEXT Minister's Commendation for Science and Technology Award (Science and Technology Promotion Division)
- 2021, 47th Broadcast Culture Fund Award
- Secretary, TIME-project (Tsunami Inundation Modeling Exchange) supported by IOC and IUGG Tsunami commission, 1993-presen
- President of Japan Society for Natural Disaster Science, 2008-2011
- http://www.jsnds.org



- Member of study group of the reconstruction design council in response to the great east Japan earthquake, Cabinet office, 2011–2012

#### **Selected Publications**

- Fumiyasu Makinoshima, Yusuke Oishi, Takashi Yamazaki, Takashi Furumura & Fumihiko Imamura, Early Forecasting of Tsunami Inundation from Tsunami and Geodetic Observation Data with Convolutional Neural Networks, Nature Communications, volume 12, Article number: 2253, 2021
- 2. Kazuhisa Goto, Takashi Ishizawa, Yuichi Ebina, Fumihiko Imamura, ShosukeSato, Keiko Udo, Ten years after the 2011 Tohoku-oki earthquake and tsunami: Geological and environmental effects and implications for disaster policy changes, Earth-Science Reviews. 212, 103417. 2020
- 3. Shuji Seto, Fumihiko Imamura, Classification of tsunami deaths by modifying ICD-10 categories in the 2011 Tohoku earthquake tsunami-A case study in Miyagi prefecture, International Journal of Disaster Risk Reduction, Volume 50, November 2020
- 4. Sugiura, M., Nouchi, R., Honda, A., Sato, S., Abe, T. & Imamura, F., Survival-oriented personality factors are associated with various types of social support in an emergency disaster situation, In: PloS one. 15, 2, p. e0228875, 2020
- 5. Tang, J., Leelawat, N., Suppasri, A. & Imamura, F., An effect of tsunami to hotel occupancy: A case of Phuket, Thailand, In: IOP Conference Series: Earth and Environmental Science. 273, 1, 012033. 2019
- 6. Imamura, F., Takakura, H., Matsuzawa, T. & Ito, K., A platform for multidisciplinary research in disaster science through experiences from the 2011 Tohoku earthquake and Tsunami, In: Journal of Disaster Research. 14, 9, p. 1318–1322 5 p., 2019
- ABDUL MUHARI, MOHAMMAD HEIDARZADEH, HARJO SUSMORO, HARIS D. NUGROHO, ESTU KRISWATI, SUPARTOYO, ANTONIUS B. WIJANARTO, FUMIHIKO IMAMURA, and TARO ARIKAWA, The December 2018 Anak Krakatau Volcano Tsunami as Inferred from Post-Tsunami Field Surveys and Spectral Analysis, Pure Appl. Geophys, 2019
- 8. Masashi Watanabe; Kazuhisa Goto; Jeremy D Bricker; Fumihiko Imamura, Are inundation limit and maximum extent of sand useful for differentiating tsunamis and storms? An example from sediment transport simulations on the Sendai Plain, Japan, Sedimentary Geology, https://doi.org/10.1016/j.sedgeo.2017.12.026, 2018



JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE (JSPS)

DIRECTOR, JSPS BONN OFFICE



#### **Education**

- March 1986: Ph.D. in Astronomy, University of Tokyo

- April 1981- Graduate School, Department of Astronomy, University of Tokyo

March 1986:

- April 1977- Undergraduate, Department of Astronomy, University of Tokyo

March 1981:

#### **Professional Career**

- October 2018- Director, JSPS Bonn Office

Present:

-April 2018- Professor, National Astronomical Observatory of Japan (NAOJ)

September 2018:

- April 2015- Executive Director, National Institutes of Natural Sciences (NINS)

March 2018:

- April 2012- Director General, NAOJ

March 2018:

-June 2010- Professor, Department of Astronomy, University of Tokyo

March 2012:

- April 2006 – Director, Subaru Telescope, NAOJ

May 2010:

-April 1998- Professor, Subaru Telescope, NAOJ

May 2010:

- April 1994- Associate Professor, Subaru Telescope, NAOJ

March 1998:

- February 1987- Assistant Professor, Department of Astronomy, University of Tokyo

March 1994:

- April 1986- Postdoctoral Fellow, Japan Society for the Promotion of Science

January 1987:

#### **DOROTHEA MAHNKE**

DIRECTOR, DAAD OFFICE TOKYO DIRECTOR, GERMAN RESEARCH AND INNOVATION FORUM TOKYO

LINKEDIN: www.linkedin.com/in/dorothea-mahnke



#### **Profile**

Dorothea Mahnke is the director of the Tokyo office of the German Academic Exchange Service (DAAD) and the German Research and Innovation Forum Tokyo. She has worked as a Coordinator of International Relations in Kumamoto and Ishikawa and in the field of development cooperation in Ghana. In 2005 she changed to a start-up company in Germany before she began as a program manager for alumni programs at the DAAD in 2008. From 2010 to 2017 she continued as the head of the unit "GATE-Germany Office and Marketing Expertise" (GATE-Germany: Consortium for International Higher Education Marketing). She holds a master degree in Japanese studies as well as a master of public administration in Higher Education Management.

Since 3/2017	Director of the DAAD Office Tokyo and Director of the German Research and Innovation Forum Tokyo
2010-2017	Head of Unit GATE-Germany Office and Marketing Expertise, German Academic Exchange Service (DAAD)
2014	Master of Public Administration "Higher Education Management", University of Speyer
2008-2010	Project Manager, Alumni Programmes, German Academic Exchange Service (DAAD)
2005-2010	Marketing and Public Relations-Manager in a start-up internet company
2005	Diploma in Economic Principles, University of London
2003-2005	Development Assistant of the German Development Service in Accra, Ghana
1999-2002	Coordinator for International Relations, JET-Programme in Kumamoto and Unoke
1999	Master in Japanese Studies, University of Bochum

# CLOSED PRESIDENTS' MEETING



### September 9, 2021

Chair: Prof. Dr. Hideo Ohno, President, Tohoku University

DE	JP	Contents	
08:30	15:30	Greetings from President Hideo Ohno, Tohoku University	
08:35	15:35	Short self-introduction by the HeKKSaGOn university representatives	
08:50	15:50	Open discussion and exchange of opinions	
09:10	16:10	Adoption of the Joint Statement	
09:35	16:35	Group photo	
09:40	16:40	Closing	

### Participants (University Representatives)

### Heidelberg University:

Prof. Dr. Bernhard Eitel, Rector

Prof. Dr. Marc-Philippe Weller, Vice-Rector for International Affairs

### **Kyoto University:**

Dr. Nagahiro Minato, President

Dr. Kyoko Inagaki, Executive Vice-President for Gender Equality, International Affairs, Public Relations, and External Affairs

Prof. Yasuyuki Kono, Vice-President for International strategy; Director, Kyoto University North American Center

### Karlsruhe Institute of Technology:

Prof. Dr. Thomas Hirth, Vice President for Innovation and International Affairs

### Tohoku University:

Prof. Dr. Hideo Ohno, President

Prof. Toshiya Ueki, Excecutive Vice President for General Affairs, Financial Affairs and International Relations

### University of Göttingen:

Prof. Dr. Hiltraud Casper-Hehne, Representative for International Affairs



Prof. Dr. Shojiro Nishio, President

Prof. Dr. Genta Kawahara, Exective Vice President

### **Observers**

### Heidelberg University:

Dr. H. Joachim Gerke, Head of International Relations Division

Oliver Piller, Coordinator, Cooperation Asia (except China, Taiwan), International Relations Division Sabine Schenk, Heidelberg University Office, Kyoto

### **Kyoto University:**

Prof. Mika Yokoyama, Deputy Executive Vice-President for Gender Equality and International Affairs; Director, Kyoto University European Center

Chiyoko Kanno, URA (University Research Administrator), KURA; Deputy Director, Kyoto University European Center

Mitsumasa Mabuchi, Director, International Affairs Division

Daisuke Kitoba, Deputy Director, International Affairs Division

Ayako Tobita, International Relations Manager, International Affairs Division

Ainslie Kerr, Administrative Staff, International Affairs Division

Kyohei Ogawa, Administrative Staff, International Affairs Division

### Karlsruhe Institute of Technology:

Dr. Klaus Rümmele, Head, International Affairs

Oliver Schmidt, Head, International Cooperation and Projects

### Tohoku University:

Prof. Taeko Misumi, Specially Appointed Associate Professor/Coordinator, Office for International Initiatives

Aya Saito, Director, Global Engagement Division

Hirohisa Miyamoto, Deputy Director, Global Engagement Division

Kei Sato, Section Chief, Global Engagement Division

Moto Kobayashi, International Program Coordinator, Global Engagement Division

### University of Göttingen:

Dr. Tanja Falkowski, Head of International Relations; Deputy Director of the International Office

### Osaka University:

Prof. Dr. Mayumi Ishikawa, Executive Assistant to the President; Professor, Center for Global Initiatives

Yoko Kimoto, Head, International Affairs Division
Masahito Kawazoe, Assistant Head, International Affairs Division
Maiko Yamaguchi, Chief, International Affairs Division
Haruna Fukui, Deputy Chief, International Affairs Division

# **ACADEMIC CONFERENCE**

– Keynote Speech039 - 048

- Presidents' Panel 049

### Keynote Speech

HeKKSaGOn University Alliance
The 8th German-Japanese University Presidents' Conference
"How universities can contribute to building healthy,
safe and resilient societies"
KEYNOTE SPEECH;

The role of universities in building a disaster resilient society: Overviews of the 2011 Great East Japan Earthquake and tsunami

Fumihiko Imamura, IRIDeS Tohoku Univ.

- "Triple Disaster": Secondary Effects and the Limits of Hazard Maps
- A New way of countermeasures for all hazards: Sharing experience and enhancement the resilience system
- Transforming Risk into Expertise:

тоноки

http://irides.tohoku.ac.ip.



# Main Messages from the lessons learned from the 2011 GEJE

- Disaster Information/knowledge should save lives
- Resilience system should save community
- Resilience is the ability to anticipate, respond and adapt to unexpected disruptions(ISO 22316)
- A need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels.
- The recovery, rehabilitation and reconstruction phase is a critical points to Build Back Better. (Sendai F DRR,2015)

тоноки

http://irides.tohoku.ac.jp



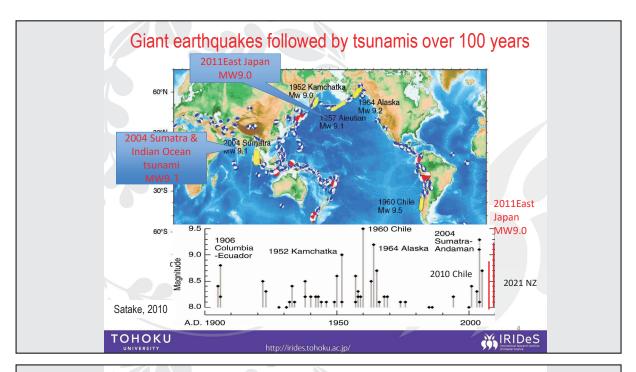
## PART1;

21st century intensifying natural disasters giant earthquake and tsunami; 2004 Indian ocean tsunami and the 2011 Great East Japan Earthquake/tsunami

TOHOKU

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**X**IRIDeS



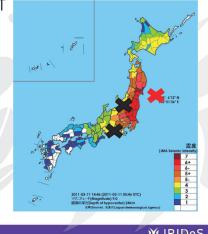
The 2004 Indian Ocean tsunami caused 230,000 casualties and shook the world. After this, the tsunami warning system was started in the Indian Ocean. German and Japanese victims are 560 and 44.



**Unfolding the 3.11 event: Triple Tragedy and Damages** 

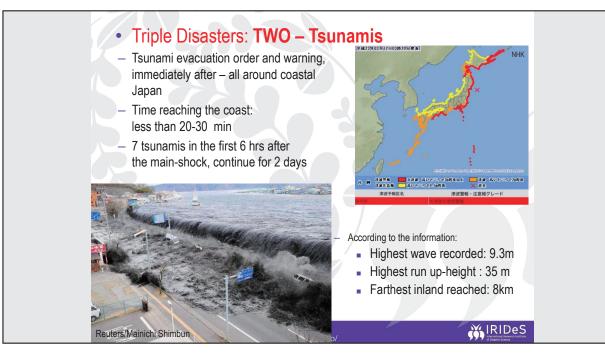
# Triple Disasters: ONE – The Earthquake

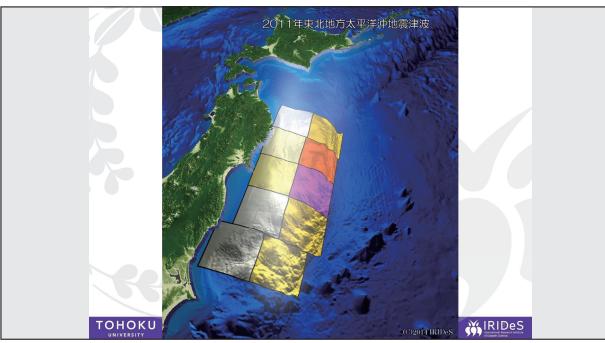
- Time: March 11, 2011, 14:46 JT
- Scale: Mw 9.0 (4th largest in the world since 1900 (USGS))
- In 5 days: 2 additional Mw 5+ earthquakes (black X)
- aftershocks continues
  - 2021 FEB Fukushima M7.3
  - 2021 March Miyagi M6.9
  - 2021 May Miyagi M6.8

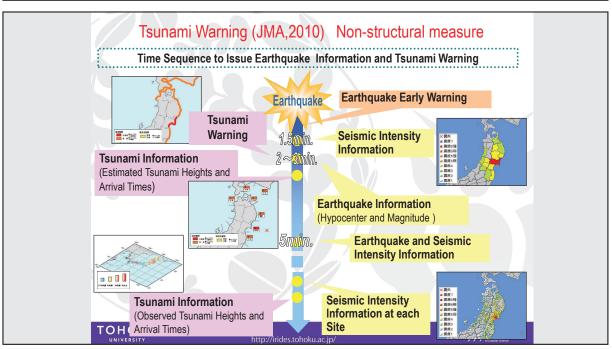


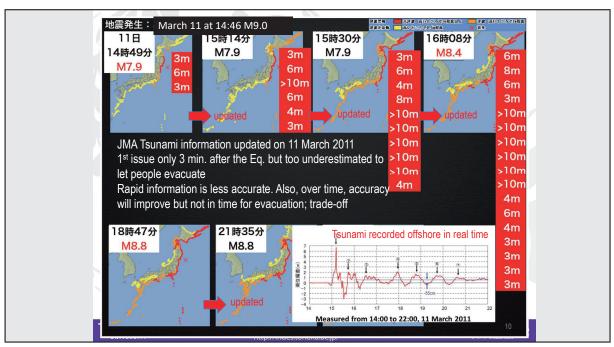
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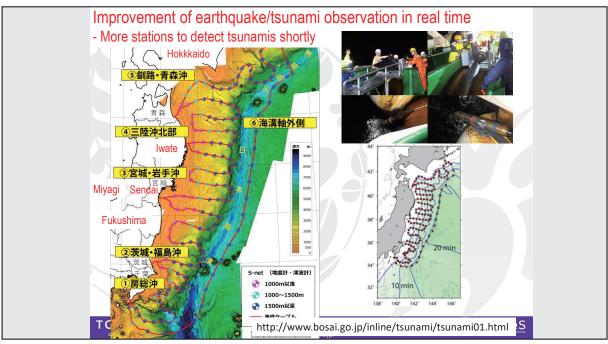
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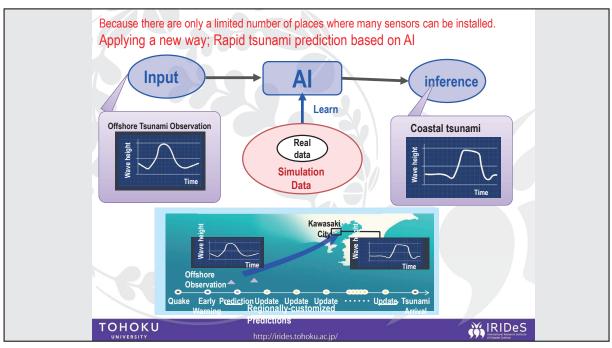












### Triple Disasters:

### **THREE - Nuclear Power Plant Failure**

- One of the worst nuclear incident, triggered by the earthquake and tsunami
- Temporarily assessed as level 7 on IAEA
- Decommissioning work continues







## PART2;

Post-earthquake response of Tohoku university and establishment of IRIDeS aiming to build a resilience society

тоноки

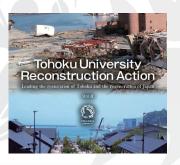
http://irides.tohoku.ac.jp



# New Institute for Disaster Reconstruction and Regeneration Research Started in Tohoku University

Eight Projects; 1.IRIDeS, 2.Community Health, 3.Environmental Energy, 4.ICT, 5.Marine Science, 6.Nuclear Decommissioning, 7.Industrial Restoration support, 8.Industry-academia collaboration Reconstruction action 100+; more than 100 various voluntary projects





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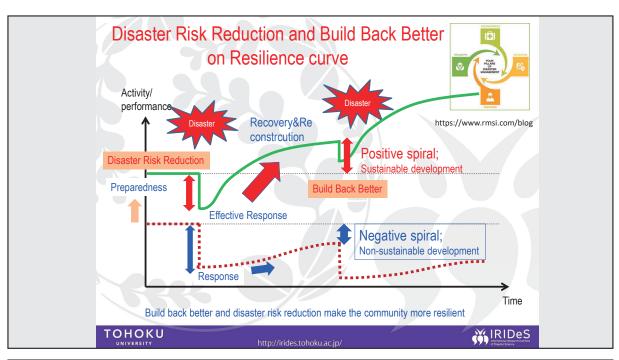
http://irides.tohoku.ac.jp/

**IRIDeS** 

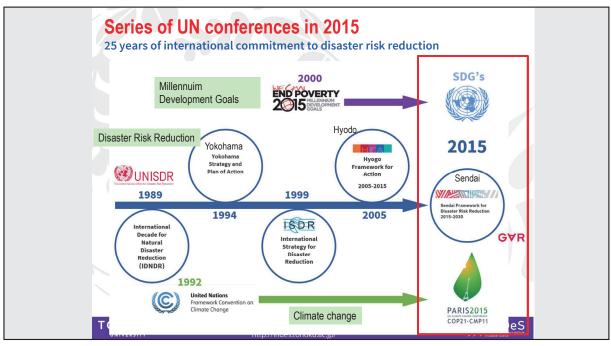












### **Global Agendas Adopted at the United Nations in 2015**







Sendai Framework for Disaster Risk Reduction 2015-2030

- Sendai, March 18 UNDRR adopted by 187 countries
- > 4 priorities
- > 7 global targets and 38 indicators

### Sustainable Development Goals

- New York, September UN Summit adopted by 193 countries
- ➤ 17 goals and 169 indicators
- > 2016-2030
- ➤ Leave no one behind/Transformation

### Paris Agreement

- Paris, December 12) UNFCCC adopted by 195 countries
- > Calling for keeping a global temperature rise this century to well below 2 °C above pre-industrial levels
- ➤ From 2020

тоноки



### The Four Priorities for Action from Sendai F for DRR

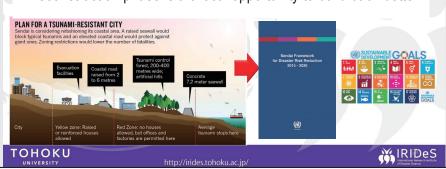
- Priority 1. Understanding disaster risk
- Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.
- Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.



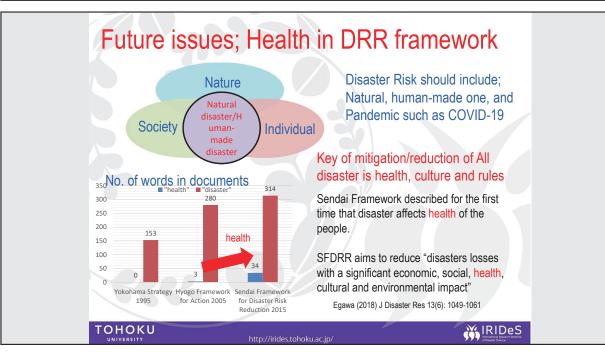
**IRIDeS** 

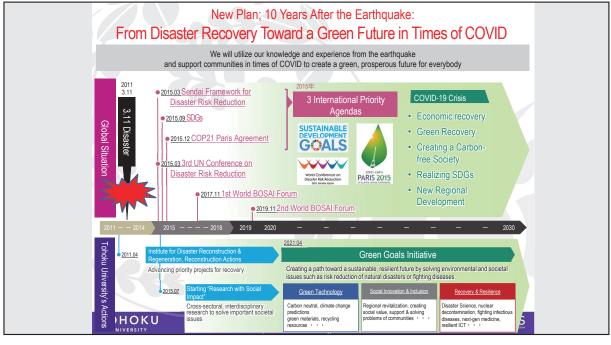
## The Four Priorities for Action from Sendai F for DRR

- Priority 4. "Build Back Better" in recovery, rehabilitation and reconstruction
- The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better.









# Conclusions

- · We can't response more than prepared.
- Disaster prevention/preparedness can certainly reduce the damage, but it cannot be reduced to zero.
- Appropriate disaster Information/knowledge should save lives.
- Judgment and response are required under uncertain circumstances.
- For this, it is necessary to build a resilient society.
  - Resilience is the ability to anticipate, respond and adapt to unexpected disruptions(ISO 22316) including any kind of RISK such as the COVID-19.
- Resilience system at all phase for disaster management cycle should save community.

тоноки

http://irides.tohoku.ac.jp/



### Presidents' Panel



### Topic 1:

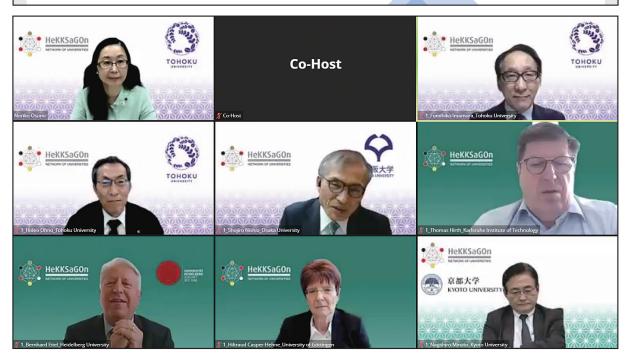
- When society is faced with a difficult situation such as a large-scale disaster or a new coronavirus pandemic in the future, what role will universities be expected to play?
- What kind of approaches/strategies/initiatives do you think are necessary for universities to contribute to the creation of a resilient society?

Please specify the key concept in one or two words, and briefly explain the reason.



### Topic 2:

HeKKSaGOn is an alliance of six leading universities in Japan and Germany. Looking towards the future, what do you think will be the significance and strength of the cooperation and collaboration between Japan and Germany in terms of education and research?



# VIRTUAL POSTER SESSION FOR EARLY-CAREER RESEARCHERS

# VIRTUAL POSTER SESSION FOR EARLY-CAREER RESEARCHERS

# **PROGRAM**

Frida	Friday, September 10, 2021 💠 08:30 - 09:50 (DE) / 15:30 - 16:50 (JP)		
DE	JP	Contents	
08:30-08:33	15:30-15:33	Opening  Moderators:  - Dr. Tafrishi Seyed Amir (Specially Appointed Assistant Professor, School of Engineering, Tohoku University)  - Dr. Tomas Kulvicius (Postdoctoral Researcher, Department for Computational Neuroscience, University of Göttingen)	
08:33-09:45	15:33-16:45	Poster Presentations and Q&A  *A5-min slot (3-min presentation and 2-min Q&A) for each presenter  *Refer to the eight HeKKSaGOn Working Group (Project 1 to Project 8) project's titles listed at the end of this Program.	
08:33-08:38	15:33-15:38	<ul> <li>Tafrishi Seyed Amir [Project 4]</li> <li>(Specially Appointed Assistant Professor, School of Engineering, Tohoku University)</li> <li>"Moonshot R &amp; D Initiatives in Japan &amp; Adaptable</li> </ul>	
08:38-08:43	15:38-15:43	Robots in Future Societies"  - Akihisa Yamamoto [Project 1]  (Assistant Professor, Institute for Advanced Studies, Kyoto University)	
08:43-08:48	15:43-15:48	"A Decade of My Scientific Activity with HeKKSaGOn"  - Moritz Tremmel [Project 1] (PhD student, Zoological Institute, Karlsruhe Institute of Technology)  "Entering the working group 'Next-Generation Biomedical Sciences-Fusion of Molecular Engineering,	
08:48-08:53	15:48-15:53	Imaging and Modeling' "  - Yuwei Liu [Project 2]  (Ph.D. student, Graduate School of Medicine, Osaka University)  "Comparison of the Therapeutic Effects of [211 At]  NaAt and [131 I] NaI in an NIS-expressing Thyroid Cancer Mouse Model"	

DE	JP	Contents
08:53-08:58	15:53-15:58	<ul> <li>Vani Novita Alviani [Project 3]</li> <li>(Assistant Professor, Graduate School of Environmental Studies, Tohoku University)</li> <li>"Geothermal hot spring utilization to hydrogen energy"</li> </ul>
08:58-09:03	15:58-16:03	- Hiroya Kawai [Project 5]  (PhD student, Graduate School of Information Sciences, Tohoku University)  "Understanding and Visualizing Deep Face Recognition"
09:03-09:08	16:03-16:08	- Philipp Lösel [Project 5]  (Research Associate, Data Mining and Uncertainty Quantification, Heidelberg University)  "Large-scale Analysis of The Honey Bee Brain Using Micro-CT Imaging and Deep Learning"
		(Short Break)
09:10 - 09:15	16:10-16:15	<ul> <li>Tomas Kulvicius [Project 4]</li> <li>(Postdoctoral Researcher, Department for Computational Neuroscience, University of Göttingen)</li> <li>"Using Robotics and Machine Learning Methods for Improved Diagnostics of Movement Disorders in Adults and Young Children"</li> </ul>
09:15-09:20	16:15-16:20	<ul> <li>Shinichiro Kobayashi [Project 6]</li> <li>(PhD student, Graduate School of Science, Tohoku University)</li> <li>"Symmetry and eigenvalues of graphs"</li> </ul>
09:20-09:25	16:20-16:25	- Benjamin Eltzner [Project 6] (Researcher, Institute for Mathematical Stochastics, University of Göttingen) "Data Space Geometry Leading to Smeary Asymptotic Rates"
09:25-09:30	16:25-16:30	- Sebastian Maslow [Project 7] (PhD Student Heidelberg University) "Crisis Narratives, North Korea and the Transformation of Japan's Postwar Security System"
09:30-09:35	16:30-16:35	<ul> <li>Momoka Asano [Project 7]</li> <li>(MA student, Heidelberg-Kyoto Joint M.A. Degree in Transcultural Studies, Heidelberg University &amp; Kyoto University)</li> <li>"The Image of God Who Is Hidden, Who Is Trampled"</li> </ul>
09:35-09:40	16:35-16:40	- Takuma Melber [Project 8]  (Lecturer, Heidelberg Centre for Transcultural Studies(HCTS), Heidelberg University)  "From Pearl Harbor to Hiroshima and Nagasaki:  Commemorative culture and legacies of World War II in the relationship of Japan and the United States of America"

DE	JP	Contents
09:40-09:45	16:40-16:45	<ul> <li>Nobuyuki Nakamura [Project 8]</li> <li>(Specially Appointed Researcher, Osaka School of International Public Policy, Osaka University)</li> <li>"Debating Conflicting World Orders: The Japan-America Student Conference during the Transwar Period"</li> </ul>
09:45-09:50	16:45-16:50	Closing

## **Eight HeKKSaGOn Working Group Projects**

	Project title	Lead coordinator
Project 1	Next-Generation Biomedical Sciences- Fusion of Molecular Engineering, Imaging, and Modeling	Prof. Dr. Motomu Tanaka, Heidelberg University
Project 2	Quantum Innovation by Interdisciplinary Medical Research	Prof. Dr. Takashi Nakano, Osaka University
Project 3	Mineral and energy resource systems for resilient, sustainable societies	Prof. Dr. Kazuyo Matsubae, Tohoku University
Project 4	Robotics for Health, Well-being, Safe and Resilient Societies	Prof. Dr. Kazuya Yoshida, Tohoku University
Project 5	HeKKSaGOnConference and Summer School: "The Digital World: Data Science, Artificial Intelligence, and Robotics"	Prof. Dr. Ramin Yahyapour, University of Göttingen
Project 6	Mathematics at the Interface of Science and Technology	Prof. Dr. Wilderich Tuschmann, Karlsruhe Institute of Technology
Project 7	Asian and Transcultural Studies: The Next Generation	Prof. Dr. Mitsuyo Wada-Marciano, Kyoto University
Project 8	Recreating Global History from Asian Perspectives: The Twentieth-Century World in Turmoil	Prof. Dr. Shigeru Akita, Osaka University

# **PLENARY SESSION**

- Presentations from theStudents' Workshop Groups 055-064
- Research Plan Reports from the Working Group Projects 065-098
- Summary Report of the 8th Presidents' Conference 099-100

### **PLENARY SESSION**

# PRESENTATIONS FROM THE STUDENTS' WORKSHOP GROUPS

### **GROUP A**

University	Name	Faculty/Department	Year of Study
Tohoku University	Ziguo Lan	School of Medicine	M1
Osaka University	Yukie Kawakatsu	School of Letters	В3
Heidelberg University	Fiona Modigell	Institute of Japanese Studies	B2
Kyoto University/ Heidelberg University	Elena Panter	Graduate School of Letters/Joint Degree Master in Transcultural Studies	M2

### **GROUP B**

University	Name	Faculty/Department	Year of Study
Offiversity	Ivallie	r acutty/ Department	rear or Study
Tohoku University	Chisato Tanaka	School of Medicine	В3
Tohoku University	Misai Shoji	School of Economics	В4
Osaka University	Kejriwal Tanvi	School of Human Science	ВЗ
Osaka University	Miho Kaneko	School of Foreign Studies	B1
Heidelberg University	Jörg Holsten	Faculty of Physics and Astronomy	M2
University of Göttingen	Kevin Kepa	Graduate School of Letters	В3

### **GROUP C**

University	Name	Faculty/Department	Year of Study
Tohoku University	Yang Xiao	Graduate School of Law	D1
Tohoku University	Haruo Ogawa	School of Economics	В4
Osaka University	Mao Sudo	School of Engineering	В3
Heidelberg University	Paula Wippermann	Psychology	В3
University of Göttingen	Lucas Spanaus	Medical School	B2



# THE 4<sup>TH</sup> HEKKSAGON STUDENTS' WORKSHOP

## **GROUP A**

ZIGUO LAN, Tohoku Univ YUKIE KAWAKATSU, Osaka Univ FIONA MODIGELL, Heidelberg Univ ELENA PANTER, Kyoto/Heidelberg Univ

# Interdisciplinary cross-university colloquium

Expanding research opportunities through online networks.

## INTRODUCTION

Our proposal for an Online International Collaborative Education Program in the Post-COVID-19 Era

2

### Who is the program aimed at:

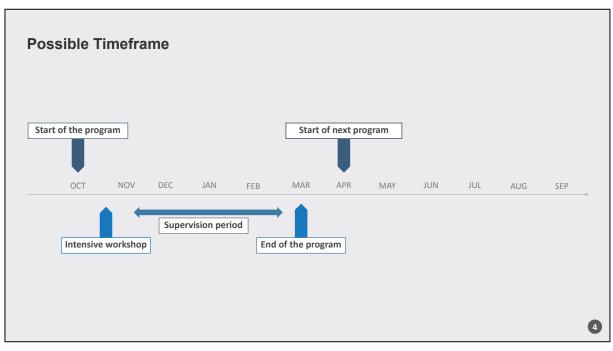
advanced undergraduate students who are writing their bachelor's thesis and graduate students of all faculties of the HeKKSaGOn Universities

→ students have to apply with a research proposal

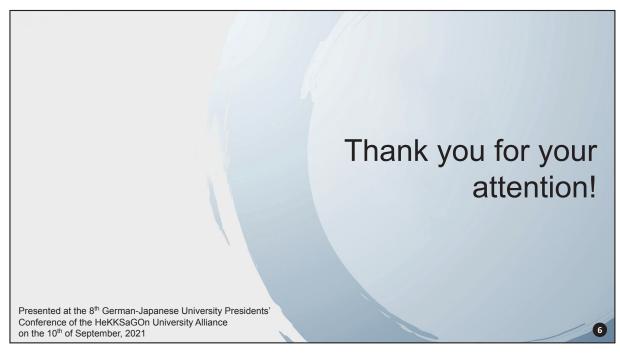
### Nature of the activities:

- Intensive workshop with presentations of the students' research topics.
   The presentations are grouped thematically into different panels. At the end of each panel there will be a discussion and feedback round.
- 2) Individual supervision

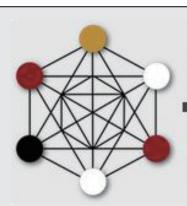
3











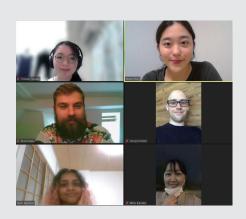
# HeKKSaGOn

# German-Japanese University Network

# Glocal Collaboration Online [GloCO] - Group B

# **Group member**

Chisato Tanaka (Tohoku University)
Misai Shoji (Tohoku university)
Kejriwal Tanvi (Osaka University)
Miho Kaneko (Osaka University)
Jörg Holsten (Heidelberg University)
Kevin Kepa (University of Göttingen)



### GloCo:

Collaborating with a local organisation (business or NGOs) online to solve issues related to SDGs

# University GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN BROWGERER

Consulting to solve issues

Offering case studies

To keep local businesses sustainable



SDGs



# Overview

**Theme**: Tackling the problems related to SDGs within businesses from a global perspective

Who is the program aimed at: Final year students or graduate students

Period: 1 year (Host university: Japan (1st sem), Germany (2nd sem))

Nature of the Activities: Fieldwork project (hybrid format)

**The reason for providing the course online**: Opportunities to learn about another country's working culture.



























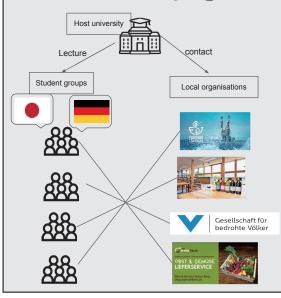








# Structure of the program



### Step1 (week1-4)

- Build groups (5-6 students each)
- Take online lectures about the local economy or culture in the area
- Choose local organisations based on each group's interests

### Step2 (week5-6)

- Make outline of the group project
- Contact to the local organisation
- First online meeting with the local organisation

### Step3 (week7-13)

- Analyze the organization
- Set the problem with a point of view of SDGs
- Make a proposal to solve the problem
- Discuss with the organization online

### Step4 (week 14-15)

Final presentation to the organisation and the entire class

# A Case Study Example -Exporting Japanese Sake into EU × University students-

Japanese Sake company wants to export sake into EU based on JEFTA and wants the products to be certified under EU ecological label

STEP1: Lectures/ seminars on e.g. local business in Japan, EU's awareness about SDGs topics, and international trade, etc.

STEP2: First meeting with a group and the company

STEP3: Working out plans together with the company on how to execute project:

- What will be a strength of the company?

Analyze their business model, compare the company to similar companies in EU

- How can the company **improve** in their business?

Eco-friendly? Contributing the local economy? Equal for both gender? etc.

- Which regulations and requirements exist?

brief owners; help to organize documents, etc.

How is administrative procedure/ what steps have to be taken?
 create time plan with farmera

STEP4: Final presentation/ Final proposal







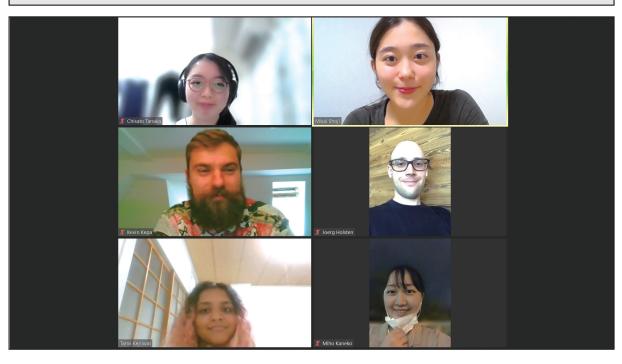


# **Outcomes**

- 1. **Networking** with potential employers internationally
- 2. **Cultural Exchange** between Germany and Japan
- 3. Practical Learning through **Collaboration**
- 4. Fostering **Creativity**
- 5. Improving Intercultural Communication
- 6. Promoting **SDGs** at the university level



# Thank you for your listening!





# HeKKSaGOn: 8th German-Japanese University Presidents' Conference



Our Team

Yang Xiao Haruo Ogawa Mao Sudo Lucas Spanaus

(Tohoku University) (Tohoku University) (Osaka University) Paula Wippermann (Heidelberg University) (Gottingen University)

# Background



### **Impact of the pandemic** (advantage )

- online teaching system is developing
- easy to collaborate with students across grades/countries

### Existing problem within universities

- hard to talk about interesting themes and share knowledge from one's major
- difficult to participate in academic conferences as students



### Theme

knowledge exchange



sharing interesting facts

## **Target Group**

- all students (regardless of major/semester)
- basic level of English required
- unlimited number of participants
- divided into 10 people groups (diverse)

### Period

- once a week for 2 months (8 sessions)
- length of session 1 hour

## **Nature of Activities**

- live online group sessions



- short presentations from participants about topic of choice
- everyone presents 2 times (1 scientific, 1 culture)
- small break out sessions to talk about input
- moderator for each session



# **Learning Goals**

exchange of cultural knowledge and experiences

training of scientific communication, presentation and language skills

evaluation: small survey or reflection talk at the end

## Outcome

**introduction** into new topics and fields of research with **new perspectives** meeting and getting to know new people

## Benefits for Universities

- strengthening of friendships between universities



- offering students the opportunity of international interaction
- possible start of **collaborations** (internationalization of universities)
- enhances knowledge exchange between students
- can cultivate individual students' knowledge so that they can make innovations or launch new projects



Activity: "Knowledge Exchange"

Background : • Use advantages of pandemic

situation universities Solve existing problems of

Goals : • Exchange of knowledge and

experience

(presentation, language, communication)

Outcomes: • Get new knowle

perspectives

Get new knowledge and

· Meet new people

Improve variety of skills

Benefits for Universities: • Stronger

friendships

New



### **PLENARY SESSION**

# RESEARCH PLAN REPORTS FROM THE WORKING GROUP PROJECTS

	Project title	Lead coordinator
Project 1	Next-Generation Biomedical Sciences- Fusion of Molecular Engineering, Imaging, and Modeling	Prof. Dr. Motomu Tanaka, Heidelberg University
Project 2	Quantum Innovation by Interdisciplinary Medical Research	Prof. Dr. Takashi Nakano, Osaka University
Project 3	Mineral and energy resource systems for resilient, sustainable societies	Prof. Dr. Kazuyo Matsubae, Tohoku University
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Project 8	Recreating Global History from Asian Perspectives: The Twentieth-Century World in Turmoil	Prof. Dr. Shigeru Akita, Osaka University



### WG1: Next-Generation Biomedical Sciences

- Fusion of Molecular Engineering, Imaging, and Modeling -



### **Lead Coordinator** Motomu Tanaka (Biophysics) Institute of Physical Chemistry, Heidelberg University Institute for Advanced Study, Kyoto University









### **Coordinators** Martin Bastmeyer (Neurobiology)

Zoological Institute, Karlsruhe Institute of Technology **Hiroshi Suito (Mathematics)** 

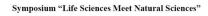
Advanced Institute for Materials Research, Tohoku University





### Our former WG 1 "Life and Natural Science Fusion" (2010 - 2020)





July 30, 2010 Heidelb Heidelberg (Germany) Coordinators: M. Tanaka (Heidelberg), N. Nakatsuji (Kyoto)







Venue 1: Lecture Hall / Chemistry (INF252)

8:30 Registration, Poster Set-up 9:00 Welcome: Motomu Tanaka (Heidelberg)

Topic 1: Stem Cell Biology and Development



not only a great scientific success (many joint publications) but also a big fun.

### Speakers

M. Tanaka, A. Ho, T. Holstein (HD) T. Ohta, K. Yoshikawa, N. Nakatsuji (Kyoto) M. Bastmeyer, D. Wedlich (KIT)

C. Schmidt (GÖ), A. Ishiiima (Tohoku)



Thanks to serious and continuous commitments by the WG members (Martin!), it was

# **HeKKSaGOn Meeting in Heidelberg**



Hosted undergrad/grad students, invited new/junior colleagues, and started the discussion for future

### Call for New WGs (2020): Discussion among Coordinators







We agreed to create an international hub of outstanding researchers, who can work together to:

- pioneer new biomedical researches under 3 pillars
- nurture next generation through top-level research, and
- strengthen our HeKKSaGOn partnership

## **New Three Pillars & Key Players (Just a Few)**



J. Korvink (Eng)

E. Blasco (Chem) Y. Takashima (Chem) F. Tamanoi (Nano) **Molecular Engineering** 

H. Suito (Math)

K. Svadlenka (Math)

# Imaging / Analyzing in vitro & in vivo











Modeling



Y. Saijo (Eng)

H. Yoshikawa (Phys) ex-Postdoc in HD

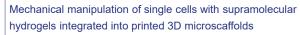
M. Bastmeyer (Bio)

A. Yamamoto (Phys) ex-HeKKSaGOn student 2012

### Showcase Research Resulting in a Publication























Y. Takashima

M. Nakahata (ex-HeKKSaGOn student 2013)

Hippler, ...Nakahata, Takashima,.., Blasco, Wegener\*, Tanaka\* & Bastmeyer\*, Science Advances (2020)





Press Release

Showcasing how the engineering of molecular systems provides with a novel tool in biomedical science

"Stretching Rack" for Cells

# **Showcase Research by Students**



PhD student Biology (Poster) Internship in Kyoto (2019)



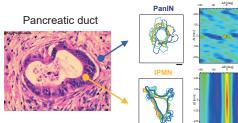
D. Yamamoto **Bachelor Student** Medicine Internship in HD (2021) cancelled, now in KUIAS



Dr. A. Yamamoto Assistant Professor Biophysics (Poster) ex-HeKKSaGOn student



Prof. H. Seno Medical Director Gastroenterology



Identifying differential prognosis of pancreatic cancer from spatio-temporal patterns of cell deformation on engineered surrogate surfaces

Moritz will stay for 3 months in Kyoto, supported by DAAD-Kyoto Programm (Bastmeyer/Tanaka).

間:AI DA

# 2nd Kyoto-Heidelberg-RIKEN Workshop Medicine and Numerical Analysis

Sept. 18 and 19 2020 (Zoom)



医学と数理

第1回のノーベル物理学賞がレントゲンに授与されるなど、医学の途少は物理はじめ 基礎科学の応用展開なしに匿れません。京都大学では、2017年に京大高等研究院 (KULIS)と単位学研究所、受難制造プログラム(THEMS)が共同で展示。不太数据科学 研究拠点(SUURI-COOL Kynto)をスタートさせ、2018年にはKUIASに医学物理・原工 計測グローバイ拠点(CIMPhy)が、さらには2019年に京大理学研究料制置サイエンス 連携開業センター(SACRA)が発足しました。



Welcome Remarks



Prof. N. Minato President (Med)

Prof. S. Mori Director General KUIAS (Math)































Cancer Left: H. Seno (Med) Right: A. Yamamoto (Phys)

## **Networking / Molecular Engineering**







German Excellence Cluster "3D Matter Made to Order"

Blasco, Tanaka, Bastmeyer & Wegener

# German-Japanese Workshop "Aquatic Materials Made to Order"

March 4 & 5, 2020

Heidelberg University (Germany)

Jointly Organized by
MEXT Grant-in-Aid for Scientific Research on Innovative Areas
"Aquatic Functional Materials"

&

German Excellence Cluster "3D Matter Made to Order"

MEXT Innovative Area "Aquatic Functional Materials"

Nakahata, Yamamoto, Tanaka & Takashima

As the goals and strongholds of two centers are fully complementary, **Tanaka acted as the organizer**.

Unfortunately, the meeting was cancelled in the last minutes due to corona pandemic.

Once the situation permits, we are ready to revive the center-to-center cooperation.

Hiroshi: potential link to AIMR?

## Thanks to --

### **Our Presidents and Vice Presidents for International Affairs**

for your understanding and continuous support.

### **Our WG Members (past, present and future)**

for all your commitments and great time we share.

### Offices of International Affairs, Research Administration

- Heidelberg: Dr. J. Gerke, O. Piller, S. Schenck (Kyoto Office)
- · KIT: O. Schmidt
- Kyoto: C. Kanno, T. Sonobe

for your patience (!), and support.

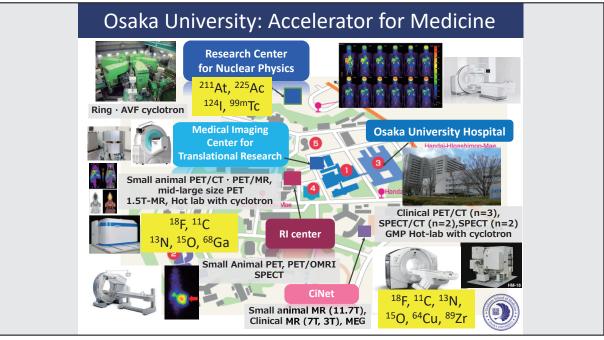


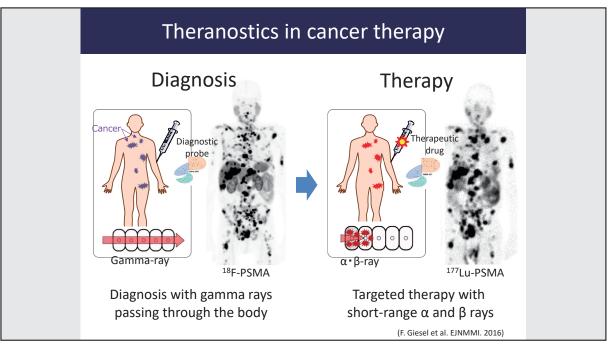


# HeKKSaGOn WG report "Quantum Innovation by Interdisciplinary Medical Research"

Tadashi Watabe<sup>1</sup> / Takashi Nakano<sup>2</sup>
Graduate School of Medicine<sup>1</sup>,
Research Center for Nuclear Physics<sup>2</sup>
Osaka University

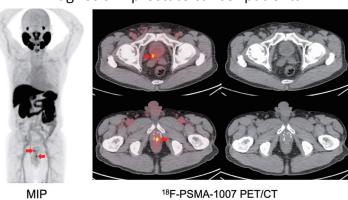
The 8th HeKKSaGOn Presidents' Conference (September 9-10, 2021)





# Collaborative clinical research with Heidelberg University

Diagnosis in prostate cancer patients



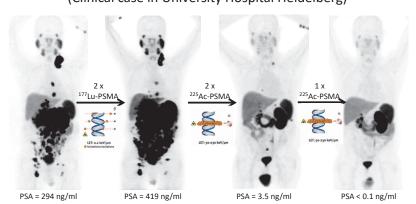
Inrohe was developed in Heidelberg University and now used

This PET probe was developed in Heidelberg University and now used in the collaborative clinical research in Osaka University Hospital

(Watabe T, et al. Ann Nucl Med. 2021) 4

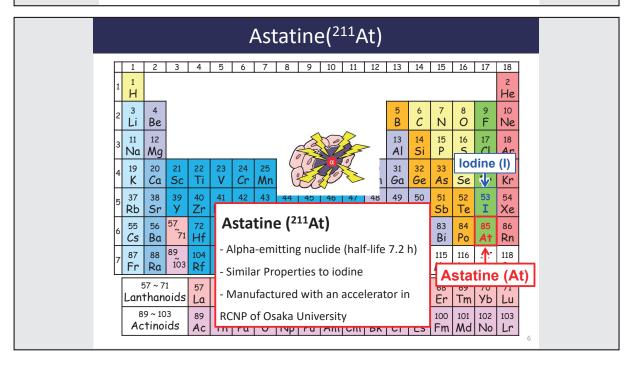
# Alpha therapy using <sup>225</sup>Ac-PSMA

(Clinical case in University Hospital Heidelberg)



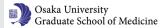
Alpha therapy is effective for refractory patient against beta therapy.

(C.Kratochwil et al. JNM 2016) 5



#### Project research plan for 2021

- Online meeting for continuing basic research in each institution and extend to the international collaborative research.
- The goal is to make a possible collaboration plan in the field of nuclear medicine with HeKKSaGOn alliance members, based on their experience including young researchers.
- Milestone 1) <u>Determination of the possible</u> <u>collaboration plan for group working in each</u> speciality



#### Project research plan for 2022

- Advanced communication to get practical funding to start the collaborative research
- Mutual exchange visits can be planned if Corona virus allows us to do so, mainly by young students, doctors and scientists for direct discussion for the collaboration research.
- Milestone 2) <u>Submission of international</u> research grants in each speciality by group <u>discussion and mutual exchange</u>



2



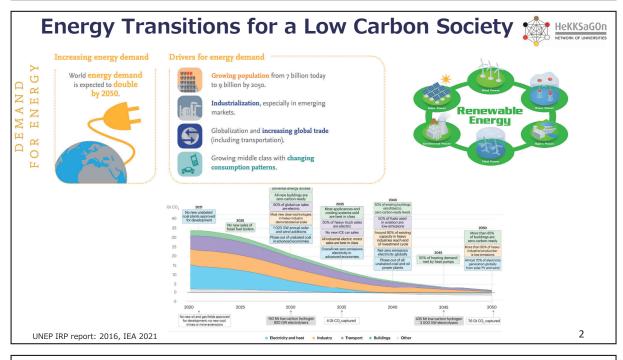
## WG3:Mineral and energy resource systems for resilient, sustainable societies

Lead coordinator: Kazuyo Matsubae, Graduate School of Environmental Studies, Tohoku University

Sub-coordinator: Witold-Roger Poganietz, Institute for Technology Assessment and Systems Analysis, Karlsruhe Institute of Technology

Sub-Lead coordinator: Benjamin Craig McLellan, Graduate School of Energy Science, Kyoto University

10, Sep 2021 Online

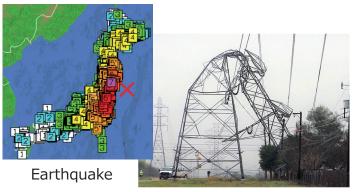


#### Resilience of energy systems





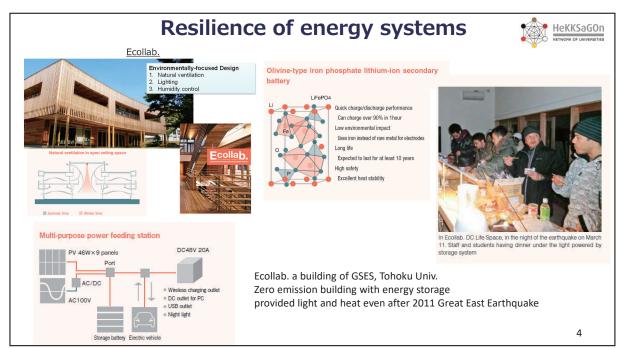
Flood

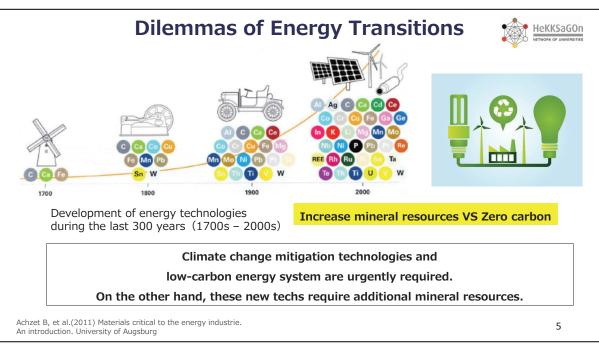


Extreme weather events

https://www.euronews.com/2021/07/15/at-least-8-dead-in-heavy-rains-floods-in-germany-and-belgium https://www.sacurrent.com/the-daily/archives/2017/02/20/officials-confirm-tornado-touchdown-overnight-in-northeast-san-antonio?utm\_source=widget&utm\_medium=articleblog&utm\_campaign=rightrail&utm\_content=RelatedStories

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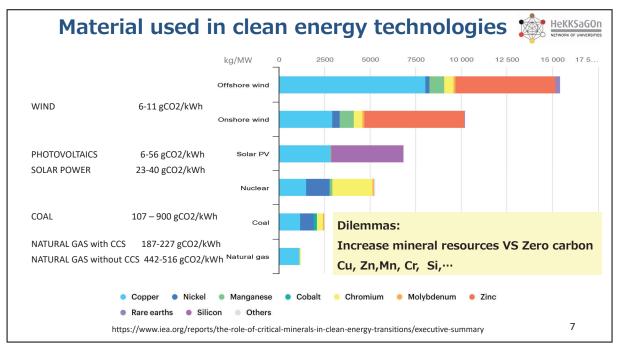


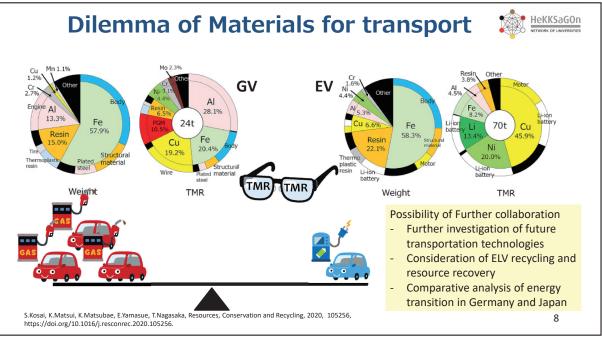
# WG3:Mineral and energy resource systems for resilient, sustainable societies



- 1. R&D for future energy technologies
- 2. Resources for sustainable energy
- 3. Policy and social governance of energy systems













#### Geothermal energy VS Hot Spring waste

The possibility of reduced heat capacity is expected to lead to conflicts between energy suppliers and hot-spring owners.

#### **Hydrogen production**

<< Waste hot spring water + Low grade Al scrap
>> No conflicts, but need LCA for utilization of Al scrap

#### Possibility of further collaboration

- Further investigation of future renewable energy technologies
- Comparative analysis of renewable energy systems in Germany and Japan
- Green hydrogen production technologiess and their challenges

9

#### Policy and social governance of energy systems





Green buildings Zero Emission Houses, Zero Emission Buildings

Heidelberg "Green" Village



https://www.heidelberg-village.de/



#### Possibility of Further collaboration

- Further investigation of future green building and city
- Comparative analysis of green cities in Germany and Japan
- Their challenges and opportunities

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#### **Collaborative education**











#### **Future aspects:**

- Acceleration of exchanging researchers and students
- Aim to establish a fund for bilateral joint research projects
- Jointly organized Summer/Winter School





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# WG3:Mineral and energy resource systems for resilient, sustainable societies























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8<sup>th</sup> HeKKSaGOn Presidents' Conference organized by Tohoku University September 9-10, 2021



#### Robotics for Health, Well-being, Safe and Resilient Societies

HeKKSaGOn Robotics Working Group

Dept. of Aerospace Engineering Tohoku University, Japan

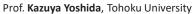
#### Kazuya Yoshida



Robotics for Health, Well-being, Safe and Resilient Societies

#### **Robotics WG Members**

#### Coordinators:



Prof. Tamim Asfour, Karlsruhe Institute of Technology (KIT)

#### Participating scholars:

Prof. Franziska Mathis-Ullrich, Karlsruhe Institute of Technology (KIT)

Prof. Gerhard Neumann, Karlsruhe Institute of Technology (KIT)

Prof. Rüdiger Dillmann, Karlsruhe Institute of Technology (KIT)

Prof. Florentin Wörgötter, University of Göttingen

Dr. Alexander Schubert, Heidelberg University

Prof. Katja Mombaur, University of Waterloo (Canada)/ Heidelberg University

Prof. Fumitoshi Matsuno, Kyoto University

Prof. Takayuki Kanda, Kyoto University

Assoc. Prof. Shinya Aoi, Kyoto University

Assoc. Prof. Takahiro Endo, Kyoto University

Prof. Koh Hosoda, Osaka University

Prof. Satoshi Tadokoro, Tohoku University

Prof. Yasuhisa Hirata, Tohoku University



Robotics for Health, Well-being, Safe and Resilient Societies

Population aging, natural disasters, severe weather, and the COVID-19 pandemic are priority issues of our society



Essential Workers in the NEW NORMAL under the pandemic



### Robotics and AI are crucial for Health, Well-being, Safe and Resilient Societies

- 1. Robots will interact and collaborate with humans
- 2. Robots will assist humans and predict consequences of actions
- 3. Robots will work in complex and challenging environments





Robotics for Health, Well-being, Safe and Resilient Societies

### Our goal is to research & develop Robot-Al systems to improve the quality of our everyday life

#### **ROBOTICS & AI emphasizes**

- the **interaction** between cognitive abilities and intelligent bodies
- perception-action coupling for intelligent behavior





Robotics for Health, Well-being, Safe and Resilient Societies

#### **Topics for our collaboration (1)**







#### Stay Young with Robot - Versatile Assistance for Everyday Life!

Tamim Asfour

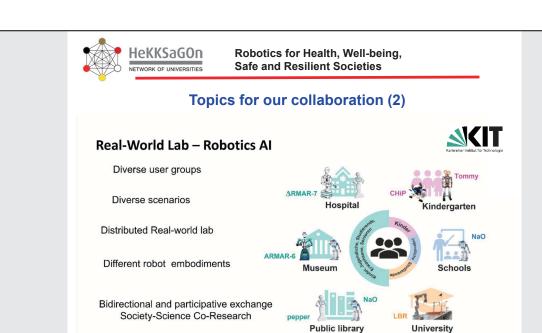
Institute for Anthropomatics und Robotics

www.humanoids.kit.edu



KIT - The Research University in the Helmholtz Association

www.kit.edu





Robotics for Health, Well-being, Safe and Resilient Societies

#### **Topics for our collaboration (3)**

#### Vision of the Society of 2050



H2T

- · Robots will be everywhere in our daily lives, and we will all be using them naturally
  - ✓ Our goal is to develop AI robots that can provide appropriate support and services depending on where they are used and the condition of the user



Adaptable AI Robots



Robotics for Health, Well-being, Safe and Resilient Societies

#### **Topics for our collaboration (4)**

#### Vision of the Society of 2050



- Adaptable AI robots will be used at many places as part of the infrastructure of society
   Commercial facilities, Cultural facilities, Sightseeing spots, Sports facilities, Nursing homes, Hospitals, Childcare facilities, etc.
- · Smarter Inclusive Society
  - ✓ A society where everyone lives a healthy life by coexisting with AI robots
  - ✓ A society cultivating the feeling of "I want to do or to be something" and fulfills it using AI robots.



#### Robotics for Health, Well-being, Safe and Resilient Societies

#### **Topics for our collaboration (5)**

Poster presentations by early-career researchers:

 "Using Robotics and Machine Learning Methods for Improved Diagnostics of Movement Disorders in Adults and Young Children"
 Tomas Kulvicius, University of Göttingen













Robotics for Health, Well-being, Safe and Resilient Societies

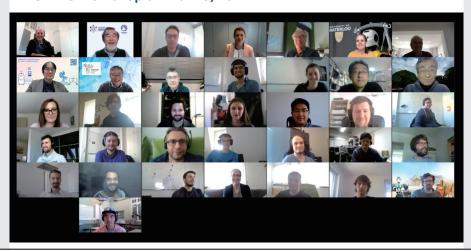
#### Past and future collaborative activities

- Tohoku University Engineering Summer Program on Robotics
  - Participation from KIT (2015, 2017, 2019)
- Participation from Göttingen (2018)
- Undergraduate student from KIT at Kyoto University
- Meeting at ICRA, May 2019, Montreal, Canada
- SWARM conference 2019 (Organizer: Kyoto Univ; PC: from all other universities)
- Workshop "Robotics and AI"/Presidents' conference, Sep 2019, Heidelberg
- Online Workshop "Robotics for Health, Well-being, Safe and Resilient Societies," Mar 29, 2021
- DARS-SWARM conference 2021 (Organizer: Kyoto Univ; AdCom and PC: from other universities), June 2021
- Presidents' conference, Sep 9-10, 2021
- Online Workshops and WG meetings at Presidents' conferences are planned for every upcoming year



Robotics for Health, Well-being, Safe and Resilient Societies

#### Online Workshop on Mar 29, 2021







# HeKKSaGOn Project Report of Robotics Working Group September 2021

#### Approved Project Title:

#### Robotics for Health, Well-being, Safe and Resilient Societies

#### Lead coordinators

Name: **Kazuya Yoshida** Position: Professor

Institution: Tohoku University

Department, Faculty: Graduate School of Engineering, Department of Aerospace

Engineering

Name: **Tamim Asfour** Position: Professor

Institution: Karlsruhe Institute of Technology (KIT)

Department, Faculty: Department of Informatics, Institute for Anthropomatics and Robotics

#### Participating scholars / scientists

Name: Franziska Mathis-Ullrich

Position: Junior Professor

Institution: Karlsruhe Institute of Technology (KIT)

Department, Faculty: Department of Informatics, Institute for Anthropomatics and Robotics

Name: Gerhard Neumann

Position: Professor

Institution: Karlsruhe Institute of Technology (KIT)

Department, Faculty: Department of Informatics, Institute for Anthropomatics and Robotics

Name: Rüdiger Dillmann

Position: Professor

Institution: Karlsruhe Institute of Technology (KIT)

Department, Faculty: Department of Informatics, Institute for Anthropomatics and Robotics

Name: Florentin Wörgötter

Position: Professor

Institution: University of Göttingen

Inst. Physics 3, Department: Comp. Neuroscience and Robotics

Name: **Alexander Schubert** Position: Scientific Manager Institution: Heidelberg University

1

Department, Faculty: Heidelberg Center for Motion Research

Name: **Katja Mombaur** Position: Professor

Institution: University of Waterloo (Canada)

Department, Faculty: CERC Chair in Human-Centred Robotics and Machine Intelligence [Note that Prof. Katja Mombaur was Head of Optimization, Robotics and Biomechanics Chair at Institute of Computer Engineering of Heidelberg University and moved to University of Waterloo, recently. She and her students in Heidelberg will continuously participate in the proposed HeKKSaGOn project.]

Name: **Fumitoshi Matsuno** Position: Professor Institution: Kvoto University

Department, Faculty: Department of Mechanical Engineering and Science

Name: **Takayuki Kanda** Position: Professor Institution: Kyoto University

Department, Faculty: Department of Social Informatics

Name: Shinya Aoi

Position: Associate Professor Institution: Kyoto University

Department, Faculty: Department of Aeronautics and Astronautics

Name: **Takahiro Endo**Position: Associate Professor
Institution: Kyoto University

Department, Faculty: Department of Mechanical Engineering and Science

Name: **Koh Hosoda** Position: Professor Institution: Osaka University

Department, Faculty: Graduate School of Engineering Science

Name: **Satoshi Tadokoro** Position: Professor

Institution: Tohoku University

Department, Faculty: Graduate School of Information Sciences

Name: **Yasuhisa Hirata**Position: Professor
Institution: Tohoku University

Department, Faculty: Graduate School of Engineering, Department of Robotics

#### 1. Introduction of the project

Robotics is an interdisciplinary research area that involves mechanics, electronics, computer science, biomedical engineering, artificial intelligence and even more. It is a key technology for health, well-being, safe and resilient society, by expanding our ability and changing our lifestyle.

The development of the intuitive and efficient human-machine interfaces has enabled a variety of applications. One is the robots that snuggle up with humans to provide assistance for handicapped persons and care for the elderly generation. Advancement of robotics combined with biomedical engineering, artificial intelligence and neuroscience improves the

quality of life. Another application is remotely-operated robots for hazardous operations at locations that are difficult and/or dangerous to access such as mining, construction, contaminated sites, disaster response, and space exploration. The capability to present a sense of realism and execute appropriate actions beyond distance and time develops a new teleoperation ability. An extreme application in this direction is outer space exploration that will expand the boundary of our scientific knowledge and our habitable zones in the future. The recent rapid progress of AI and machine learning technologies bring synergies to robotics to create higher-level of motion intelligence in these applications.

Today, we are facing difficult challenges of natural disasters and emerging deceases. In particular, COVID-19 imposes a new normal lifestyle to prevent the infection to the virus by keeping enough distances. The robotics that enables substantial snuggling-up interaction at large physical distance will also contribute in such situations.

In the project, we have an online workshop and an in-person workshop every year to facilitate the discussions among the participating researchers from the six HeKKSaGOn Universities, to promote substantial collaborations using possible Germany-Japan funding schemes and to accelerate the exchange of young researchers such as PhD students and Postdoc fellows.

#### 2. Contribution of Robotics and AI to the sustainable development of society

Robotics is crucial for one of the HeKKSaGOn priority areas, that is **health**, **well-being**, **safe and resilient society**, as it provides cutting-edge technologies and solutions to enhance human abilities and address changes in our lifestyle.

The development of intuitive and efficient human-machine interfaces has enabled a variety of applications. One is the robots that snuggle up with humans to provide assistance for handicapped persons and care for the elderly generation. The advancement of robotics combined with biomedical engineering, artificial intelligence and neuroscience improves the quality of life. Another application is remotely-operated robots for hazardous operations at locations that are difficult and/or dangerous to access, such as mining, construction, contaminated sites, disaster response, and space exploration.

The recent rapid progress of Al and machine learning technologies bring synergies to robotics to create higher-level of motion intelligence in these applications. Robotics and Al technology and their applications can offer solutions to the problems that our society is facing, such as assisting handicapped persons, caring for elderly generations, medical treatments and disaster responses.

In addition, we are facing more and more difficult challenges of natural disasters and emerging diseases. In particular, COVID-19 imposes a new normal lifestyle to prevent the infection of the virus by keeping enough distances. A number of questions have been raised and discussed on how we can maintain the essential works for making our society sustainable. Robotics and Al will offer substantial solutions to these problems by enabling physical actions from a distance in smart, comfortable and intuitive ways.

#### 3. History and on-going discussions in the Robotics Working Group

From the beginning of the HeKKSaGOn Conference, the Robotics Working Group has been actively discussing up-to-date issues for the challenges and opportunities in the 21st Century among the robotics professors from the six universities. In the recent conference in Heidelberg in October 2019, we had focused discussions on Robotics and Al.

Today's AI technology achieves superhuman performance in computer vision and speech, medical diagnosis and games. This has been done along with the progress of advanced computing architectures to handle a large amount of data, machine learning (Deep Learning) and new hardware (sensors, computers, few robots.) But a recent discussion with representatives from industry has shown that industry is increasingly troubled about modern AI due to the lack of proven robustness, standardization and transparency of the technology for the developers and users. After the discussion in Heidelberg, we agreed as an answer to the key questions in Robotics and AI that we should move toward the research and development of robot systems for real-world applications with the enhanced features of safe, secure and trustworthy with social acceptance, as well as ethical and legal aspects.

Our project aims to facilitate the discussions among the participating researchers to promote substantial collaborations using possible Germany-Japan funding schemes and accelerate the exchange of young researchers such as PhD students and Postdoc fellows. Seeking external funding opportunities and implementing substantial collaborations, and young researchers' involvement are crucial and will result in sustainable growth.

#### 4. Chronological list of our collaborative activities in Robotics WG

- Tohoku University Engineering Summer Program on Robotics
  - Participation from KIT (2015, 2017, 2019)
  - Participation from Göttingen (2018)
- Undergraduate student from KIT at Kyoto University
- Meeting at ICRA, May 2019, Montreal, Canada
- SWARM conference 2019

(Organizer: Kyoto Univ; PC: from all other universities)

- Workshop "Robotics and Al"/Presidents' conference, Sep 2019, Heidelberg
- Online Workshop "Robotics for Health, Well-being, Safe and Resilient Societies," Mar 29, 2021
- DARS-SWARM conference 2021 (Organizer: Kyoto Univ; AdCom and PC: from all other universities), Jun 1-4, 2021
- Presidents' conference, Sep 9-10, 2021
- Online Workshops and WG meetings at Presidents' conferences are planned for every upcoming year

(end of report)

# HeKKSaGOn Report on WG 5 Data Science

Prof. Ramin Yahyapour (Göttingen University) Prof. Shinji Shimojo (Osaka University)

#### **Status**

- The workgroup established good collaboration and regular meetings to investigate joint topics on Data Science:
  - Teaching
  - Research
  - o Institutional collaboration
- Key measures:
  - webinars
  - o summer school
  - staff exchange
  - Joint projects
- COVID slowed down collaboration in 2020/21

#### Past webinar

Date	Title	Lecturer	Affiliation	applicants	attendees
	Learning to teach machines to learn: bridging		Institute for Datability Science,		
10/2/2018	the gap between formulas and code	Matthew J. Holland	Osaka University	26	19
			Institute of Computer Science,		
11/9/2018	Introduction to classification	Steffen Herbold	University of Göttingen	19	
			Graduate School of		
	Introduction to Deep Learning For		Information Sciences, Tohoku		
12/14/2018	Communication Networks	Zubair Fadlullah	University	21	29
	Sustainable Software Development in an		Karlsruhe Institute for		
3/22/2019	Academic Setting	Dr. Hartwig Anzt	Technology (KIT)	31	13
	"RDM policy and infra. at Japan" and "Citizen	Dr. Eiri Ono and Dr.			
11/21/2019	Science and data science"	Takaaki Aoki	Kyoto	13	12

In 2020, it was postponed by COVID19

#### Proposed Research Plan

### The Digital World: Data Science, Artificial Intelligence, and Robotics

#### Project abstract:

Data science, artificial Intelligence, and robotics are major forces to change our societies. For example, deep neural networks and machine learning have by now massively changed many application fields from science to industry. It is obvious that these methods will continue to strongly influence all of us and potentially pave our way to reach the UN social development goals.

Science has an obligation to shape this development by providing the necessary basic research, its application as well as by teaching and training young scholars of these fields. As artificial intelligence poses many questions in terms of privacy, ethics and social impact, we also need to critically engage in discussions about how to balance (perceived) dangers with (potential) benefits. HeKKSaGOn is a network of six research universities from Japan and Germany, which are committed to collaborate on these subjects. HeKKSaGOn has a track record in these topics through its working groups: Data Science, Robotics and Mathematics. While working on specific domain topics, we see the need to broaden our activities through a joint initiative. Thus, we propose the organization and implementation of two actions focused on the topic: "The Digital World: Data science, artificial Intelligence, and robotics" which are:

- In 2021 International Summer School paired with an on-line conference and
- In 2022 International Summer School paired with a life conference.
- Webinar series which enhance collaboration opportunity and extend outreach.

#### Data Science Summer Schools (DS3) Göttingen

#### **July 2017**

applications: 227

• participants: 35 (12 female, 23 male)

#### August 2018

• applications: 183

• participants: 32 (12 female, 20 male); 16 nationalities

#### August 2019 (funded by DAAD)

• applications: 348

• participants: 33 (17 female, 16 male); 15 nationalities

#### 2020:

applications: 125CANCELLED

2021 not opened





#### Summer School on hold ...

Due to the pandemic situation international travelling and large meetings were made impossible.

Summer School plans for the future:

- in presence again in 2022 to foster young career network building
- better interaction with lecturers
- combined with online learning to reach larger audience

Make use of the new online tools and personal online experiences

# Example of individual collaborations: Kyoto – Göttingen Cooperation

- DAAD funded project "Supporting Open and Citizen Science"
   Das Firit Open (North University)
  - O Dr. Eiri Ono (Kyoto University)
  - O Dr. Sven Bingert (University of Göttingen)
- (Mobility grant not yet used due the current situation)

Project idea supporting Sustainable Development Goals (17SDGs)

- Goal 4: Quality Education
- Goal 9: Industry Innovation and Infrastructure
- Goal 13: Climate Action
- Goal 15: Life on Land

Research Topics for citizen air quality sensor network

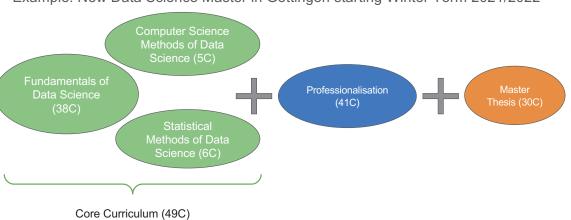
- Citizen incentive to participate
- How to include new citizens
- Infrastructure and Service development
- Research using sensor data



### Exchange on Teaching in Data Science in HeKKSaGOn

Activities at all universities

Example: New Data Science Master in Göttingen starting Winter Term 2021/2022



#### Data Science WG Workshop Day 1

September 7

Opening Remarks: Prof. Mitsuyuki Nakao

**Data Science and Computing Resource Integration** (Chair: Prof. Shinji Shimojo)

Session 1: How to Integrate HPC Resources in Different Workflow Environments., Dr. Sven Bingert

Session 2: Dynamic Compute Resource Integration for Collaborative Scientific Analyses, Prof. Max Fischer

Session 3: Learning and Evidence Analytics Framework (LEAF) - Educational Data Science with Multimodal Learning Traces., Prof. Rwitajit Majumdar

Poster Session (open session)



#### Data Science WG Workshop Day 2

September 8

Special Session on Data Science for Studies Using Large Scale Science Infrastructures (Chair: Prof. Mitsuyuki Nakao)

Session 1: Machine Learning Applications for Particle Accelerators., Dr. Andrea Santamaria Garcia

Session 2: Application of the Machine Learning to the Collider Experiments, Prof. Masako Iwasaki

Session 3: Collaboration between X-ray Ptychography and Data Science for the Use of Next-generation Synchrotron Radiation., Prof. Yukio Takahashi

Poster Session(open session)

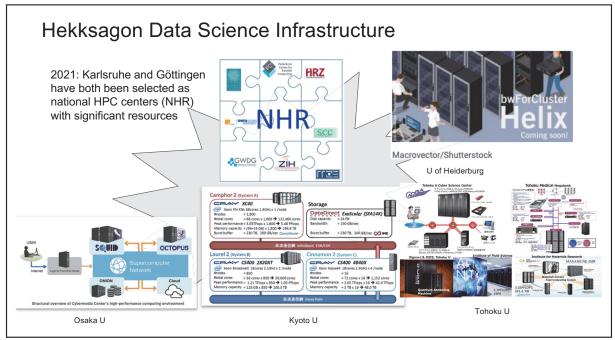
Closing remarks: Prof. Ramin Yahyapour



#### **Data Science WG Posters**

- P01: Philipp Lösel Large-scale Analysis of The Honey Bee Brain Using Micro-CT Imaging and Deep Learning
- P02: Hiroya Kawai Understanding and Visualizing Deep Face Recognition
- P03: Hendrik Nolte A Provenance Aware Data Lake for Sciences
- P04: Triet Doan System Architecture for the integration, processing, and publishing of many heterogeneous text resources
- P05: Changhao Liang Group Learning Orchestration Based on Evidence (GLOBE) framework and its implementations
- P06: Van-Quang Nguyen Look Wide and Interpret Twice: Improving Performance on Interactive Instruction-following Tasks
- P07: Michael Zielewski A Method for Reducing Time-to-Solution in Quantum Annealing Through Pausing
- P08: Fangzhou Lin Cosmos Propagation Network: Deep learning model for point cloud completion
- P09: Siwalee Choilek Effects of Habitual Sleep/Wake Pattern and Menstrual Cycle on Subjective SleepQuality and Heart Rate Variability
- P10: Xiyue Wang Predicting Children's Behavior Problems with Toy Block Play Actions and Patterns





#### Results from the Workshop 7.9. + 8.9.

- 30+ attendees
- Exploring link between data science and high-performance computing.
  - o Common topic: The HeKKSaGOn partners have significant HPC resources and activities.
- Scalability
  - o Common topic: Supporting large-scale data management and analytics use-cases
- Data Science in Teaching and Learning/Teaching and Learning on Data Science
- Common use-cases e.g. image analysis
- Big facility requires Data Science (Particle Accelerators, the Collider Experiments, X-ray Ptychography)

#### Future plans:

- Planning Data Science Summer School for 2022
- Restart Webinar series
- Follow-Up on individual collaborations





### Mathematics at the Interface of Science and Technology - Research Plan Report

HeKKSaGOn 2021 8th German-Japanese University President's Conference Prof. Dr. Wilderich Tuschmann (KIT) & Prof. Dr. Senjo Shimizu (Kyoto) | September 10, 2021



Mathematics at the Interface of Science and Technology - Research Plan Report



#### The present HeKKSaGOn working group members

- Prof. Dr. Anna Marciniak-Czochra, Heidelberg University
- Prof. Dr. Anna Wienhard, Heidelberg University
- Dr. Rafael Dahmen, KIT
- Prof. Dr. Peer Kunstmann, KIT
- Dr. Kaori Nagatou, KIT
- Prof. Dr. Wilderich Tuschmann, KIT (Chair)
- Prof. Dr. Tsuyoshi Kato, Kyoto University
- Prof. Dr. Senjo Shimizu, Kyoto University (Co-Chair)
   Prof. Dr. Satoshi Tsujimoto, Kyoto University
- Prof. Dr. Takao Yamaguchi, Kyoto University

- Prof. Dr. Shouhei Honda, Tohoku University
- Prof. Dr. Hideo Kozono, Tohoku University
- Prof. Dr. Takashi Shioya, Tohoku University
- Dr. Benjamin Etzel, Göttingen University
- Dr. Carsten Gottschlich, Göttingen University
- Prof. Dr. Stephan Huckemann, Göttingen University
- Prof. Dr. Ryushi Goto, Osaka University
- Prof. Dr. Hisashi Kasuya, Osaka University
- Prof. Dr. Takashi Nakazawa, Osaka University
   Prof. Dr. Katsutoshi Yamanoi, Osaka University

Prof. Dr. Wilderich Tuschmann (KIT) & Prof. Dr. Senjo Shimizu (Kyoto) -

September 10, 2021

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### Mathematics at the Interface of Science and Technology - Research Plan Report



#### Since last meeting: Broadening the scope and goals of the group

#### Now there are collaborators from

- Discrete Mathematics
- Dynamical Systems
- Differential Geometry
- Mathematical Analysis
- Mathematical Biology
- Medical Robotics
- Stochastics
- Topology

**General Goal:** Building New Bridges between Analysis, Geometry, and Stochastics towards Applications in Data Science and Medical Robotics

Prof. Dr. Wilderich Tuschmann (KIT) & Prof. Dr. Senjo Shimizu (Kyoto) – Mathematics at the Interface of Science and Technology - Research Plan Report

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### Mathematics at the Interface of Science and Technology - Research Plan Report



#### HeKKSaGOn Funded Research Activities

- Kyoto, Research Institute for Mathematical Sciences (RIMS):
   Symposium Analysis, Geometry and Stochastics on Metric Spaces
- Göttingen: HeKKSaGOn Conference and Summer School: The Digital Word: Data Science, Artificial Intelligence, and Robotics
- Sendai: Geometry Conference as satellite workshop to the HeKKSaGOn Presidents' Meeting

(All scheduled for 2021 — and all postponed due to the pandemic. But see below . . .)

Prof. Dr. Wilderich Tuschmann (KIT) & Prof. Dr. Senjo Shimizu (Kyoto) — Mathematics at the Interface of Science and Technology - Research Plan Repo

September 10, 202

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### Mathematics at the Interface of Science and Technology - Research Plan Report



#### New Research Focus: Dynamics and Forecasting of Epidemics

**Understand and Fight Covid-19** by combining Tools from Analysis, Geometry and Stochastics with Machine Learning Techniques

#### **Initial Research Works:**

- Epidemic dynamics via wavelet theory and machine learning with applications to Covid-19, T. T. Dat, W. Tuschmann et al., Biology (2020).
- Unified modeling of epidemics by coupled dynamics via Monte-Carlo Markov Chain algorithms, F. Protin, W. Tuschmann et al., preprint, arxiv:2106.13463v1, (2021)

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### Mathematics at the Interface of Science and Technology - Research Plan Report



#### Featured HeKKSaGOn Collaboration in 2020-21

H. Kozono (Tohoku), P. C. Kunstmann (KIT), S. Shimizu (Kyoto)

Analyticity in space-time of solutions to the Navier-Stokes equations via parameter trick based on maximal regularity

In the domain  $\Omega\subset\mathbb{R}^n$  ( $n\geq 2$ ) with the smooth boundary  $\Omega$ , we consider the initial boundary value problem of the Navier-Stokes equations:

$$\begin{cases} \partial_t u + (u \cdot \nabla)u - \Delta u + \nabla \pi = t, & \operatorname{div} u = 0 & \operatorname{in} \Omega \times (0, T), \\ u = 0 & \operatorname{on} \partial \Omega \times (0, T), \\ u|_{t=0} = a & \operatorname{in} \Omega. \end{cases} \tag{NS}$$

We prove analyticity in the time variable of solutions to (NS) by using the method of "parameter trick" based on maximal Lorentz regularity of the Stokes equations. Maximal Lorentz regularity on the homogeneous Besov space enables us to handle even such a singular data for existence and uniqueness results on global strong solutions. For instance, in the 2D case, the initial vorticity and the external force as the Dirac measure in  $\mathbb{R}^2$  were treated. In the 3D case, the single layer potential supported on the sphere yields a strong solution.

4 D > 4 B > 4 E > 4 E > E 9 Q C

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### Mathematics at the Interface of Science and Technology - Research Plan Report



#### Future HeKKSaGON Mathematics Groups Plans and Activities

#### Resume in 2022

- Kyoto, Research Institute for Mathematical Sciences (RIMS):
   Symposium Analysis, Geometry and Stochastics on Metric Spaces
- Göttingen: HeKKSaGOn Conference and Summer School: The Digital Word: Data Science, Artificial Intelligence, and Robotics
- Travel and direct exchanges between working group members

#### Plan for 2023

- Karlsruhe: International Summer School and Conference Mathematics meets Robotics at KIT
- Outreach activities relating our results to a broader public
- Obtain external funding from, e.g., DFG, Helmholtz, DAAD and JSPS for launching future projects and collaborations

Prof. Dr. Wilderich Tuschmann (KIT) & Prof. Dr. Senjo Shimizu (Kyoto) – Mathematics at the Interface of Science and Technology - Research Plan Report

September 10, 2021

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### Mathematics at the Interface of Science and Technology - Research Plan Report



Last not least ...

#### Vielen Dank!

### ありがとうございました。

4 D > 4 B > 4 E > 4 E > E 990

Prof. Dr. Wilderich Tuschmann (KIT) & Prof. Dr. Senjo Shimizu (Kyoto) – Mathematics at the Interface of Science and Technology - Research Plan Report

September 10, 2021

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### Past Achievements: New Structures of Cooperation in *Graduate* Education

M.A. in Transcultural Studies since 2011 (Heidelberg): 125 students from 34 nations; Joint M.A. Degree with Kyoto University (full quota of 20 students), model for Erasmus Mundus in Global Markets for Glasgow-Göttingen-Kyoto.

PhD Double Degree Program with Tohoku University (Law/Letters) model for Joint PhD GS Asia/Transcultural Heidelberg/Ca. Foscari University in Venice.

Visiting Professorships: Toshiba Foundation, DAAD Visiting Professorships and GS Int. Japanese Studies (20 professors for 1-3 months in last 5 years). 2021/2022 Profs: Kawaguchi/Tohoku and Takezawa/Kyoto, Hirata/Osaka Joint online teaching Heidelberg-Osaka with Arokay-likura GSL (WiSe 2021) Joint M.A. Degree online teaching (Fuess SoSe 2021)

#### Financial Support and Future Targets



**Continuous External Funding Stream** about two million euro for mobility measures from Heidelberg to Japanese HeKKSaGOn Humanities units

Last DAAD grants for Osaka (ISAP/Arokay) and Kyoto (ISAP/Fuess) totaling over 500.000 euro 2019-2023, received/applied for 600.000 euro for 2019-21/2022-2026
Japanese side support: tuition waiver, university housing and monkasho scholarships

- ⇒ Doctoral and postdoctoral exchange up to a total of 15 people per year (6-24 months), minimum 3 per university
- ⇒ **B.A. undergraduate exchange** needs *more coherent* English-language offerings and pairing but contract expansion still recommended to **10 people per university**

**HeKKSaGOn Multilateral Learning of Bilateral Best Practice** 

#### Current Multilateral Activities: Transcultural Encounters Conference



New Normal Lifestyles during/post-COVID-19: from Crisis to Opportunity

(Online)

Next Generation

Two Day Workshop

for

Graduate Students

25-26 Sept 2021 (Organized by Kyoto U.)

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### Future Multilateral Activities: Transcultural Encounters Workshop Series



#### **Global Asian and Transcultural Studies (GATS)**

History, Society, and Culture

2022 Workshop at Heidelberg University (Gender and Culture)

Lead: Professor Emiko Ochiai and Professor Ute Hüsken

2023 Workshop at **Osaka** University (Global History and Memory)

<u>Lead:</u> Professor Shigeru Akita and Professor Dominic Sachsenmaier

2024 Workshop at **Heidelberg** University (Cultural Heritage and "Asia")

Lead: Professor Christiane Brosius and Professor Kaoru Nakao

2025 Workshop at **Kyoto** University (Visual Media and Popular Culture)

<u>Lead:</u> Professor Mitsuyo Wada-Marciano and Professor Barbara Mittler

2026 Workshop at **Tohoku** University (Literature, Language and Religion)

Lead: Professor Judit Arokay and Professor Naomi Koda

### HeKKsaGOn University Internationalization Japanese Universities hiring from Germany

#### **Tenured Faculty Members from Heidelberg at Kyoto University**



Knaudt Humanities RI



Ivings GS Economics

#### **Tohoku and Osaka University Job Offers**



Moniz-Bandeira Tohoku Law



Full Prof. Heé Osaka History





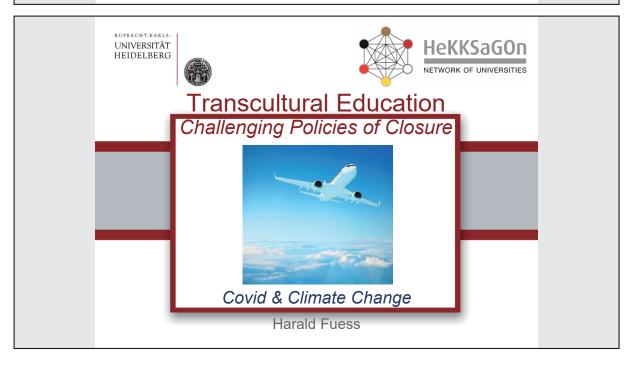
Klautau Tohoku Int. Culture

#### German HeKKSaGOn Universities hiring form Japan

We need *more* transcultural Japanese!!!



Yamamoto
Heidelberg, HCTS
(B.A. Tokyo University & Ph.D. London School of Economics)



#### **PROJECT 8**





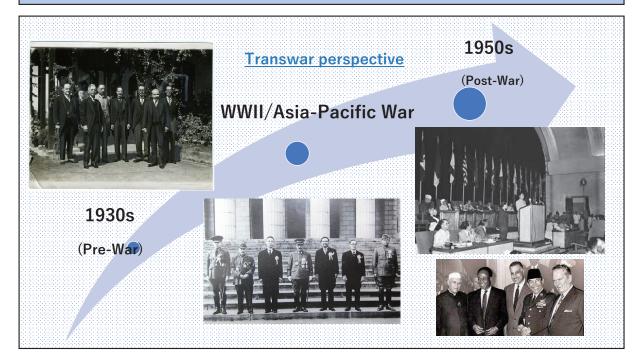
Transwar and Transimperial History in the Asia-Pacific —Development, Environment and Decolonization—

Eurocentric World/Global History ←→Asian Perspectives

- (1) Transwar perspectives: transformation (change) and continuity
- (2) Transimperial perspectives:

Intra-Asian Trade regional trading networks, Asian merchants
Asian industrialization

"Cold War" (Cold war regime)  $\Leftrightarrow$  **Decolonization** 



### Space in Global History

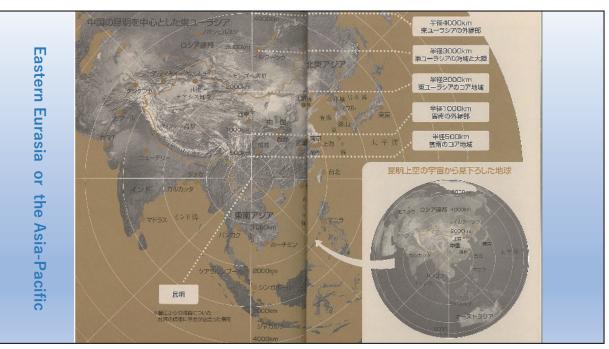
#### Four layers interactions

**《local history⇔national history⇔regional history⇔global history》** 

**Wider Region:** flexible and changeable unit of analysis (ex.) **Central Eurasia**, **Maritime Asia**, the Asia-Pacific

Eastern Eurasia >> East Asia/NE Asia/SE Asia/South Asia

Transimperial ≫ nation-state ≫ Transnational in the Asia-Pacific Transregional





#### Publication plan



(tentative) Transwar and Transimperial History in the Asia-Pacific
—Development, Environment and Decolonization—

Harald Fuess, Shigeru Akita and Hiroaki Adachi (eds.)

- ⇒ 1st-3rd Sep. 2021: 1st Workshop by ZOOM at Tohoku University
- ⇒ 29th-30th March 2022: 2nd Workshop by ZOOM at Osaka University
- ⇒ Early July 2022: Final Workshop (Offline) at University of Heidelberg
- ⇒ October 2022: Submission of all drafts to the Publisher (Cambridge U.P.)
- ⇒ August 2023: Book Publication Party at Kyoto University





#### The 8th HeKKSaGOn Presidents' Conference

2

#### The Virtual Poster Session

- The first time at this Presidents' Conferences and online
- 14 posters in the multidisciplinary fields





#### ● The Students' Workshop

- The first time online
- 15 member university students from diverse backgrounds





#### The 8th HeKKSaGOn Presidents' Conference

3

#### Academic Conference

- Live streamed, open to the public
- Opinions exchanged on the role of universities in situations where they are faced with difficulties such as pandemics and natural disasters
- Reaffirmed the potential for social contribution that the HeKKSaGOn Alliance can make.



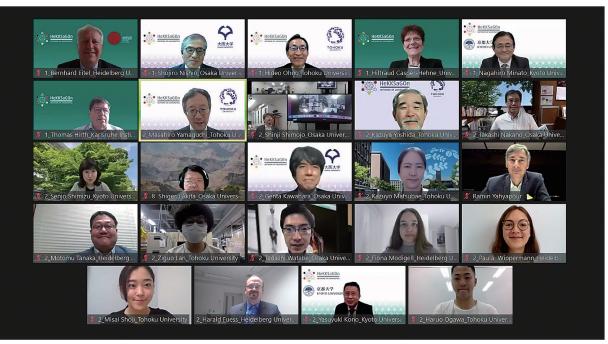
#### **Academic Conference**

Thursday, September 9 [DE] 10:00-11:20 [JP]17:00-18:20









# JOINT STATEMENT

#### **JOINT STATEMENT**

The theme of the 8th HeKKSaGOn German–Japanese University Presidents' Conference is "How universities can contribute to building healthy, safe and resilient societies." This theme reflects our collective and individual experiences of the COVID–19 pandemic, which has not only threatened our health and well-being, but has also caused great socio-economic disruption to our global society. In this time of crisis, we, the leaders of the HeKKSaGOn universities, reaffirm our belief that the knowledge produced by higher education institutions is important in seeking solutions to global challenges, and we agree to work together to implement the following:

#### **Premises**

- 1. Lead the advancement of multidisciplinary research and the dissemination and transfer of knowledge to address and solve global issues in health, safety and resilience, with a focus on areas of existing academic collaboration.
- 2. Advance our engagement with local and global communities to help achieve the UN Sustainable Development Goals through collaboration with each other and with other parties in research, education, and transfer/social engagement.
- Make the best use of existing and emerging technologies and methods of digitalization to exchange and disseminate knowledge in research, education, and transfer/social engagement, in addition to conducting these activities in the traditional in-person manner.
- 4. Enhance organizational preparedness with respect to multi-hazards such as natural disasters and pandemics to allow universities to continue conducting research and providing education.

The HeKKSaGOn Alliance intends to pursue the above premises through the following actions:

- Invite both early-career and senior researchers to participate in the defined priority areas
  of research and education as well as on the working group projects of the HeKKSaGOn
  Alliance to provide them with the opportunity to jointly contribute to solving the global
  challenges for the future.
- Promote further opportunities for early-career researchers to engage in collaborations and encourage them in particular to share their ideas for shaping the post COVID-19 era, taking into consideration their respective institutional strengths.
- Enable students to supplement their academic qualifications with the opportunity to experience intercultural exchanges that allows them to grasp global challenges and develop innovative approaches to solving them.
- Jointly promote in-person as well as online events through symposia, workshops, and

programs in order to maintain a stable environment in which the member universities have opportunities to engage in advanced research and education development.

- Jointly disseminate outstanding research outcomes and best practices that are the result of HeKKSaGOn activities related to globally challenging issues, especially those in the fields of health, safety and resilience, to academic communities and civil societies.
- Make every effort to resume in-person academic exchange among its members at the earliest date possible, and share the latest information on COVID-19 prevention measures at the member universities with the assistance of the HeKKSaGOn liaison offices in Kyoto and Heidelberg.

September 10, 2021



# PRE-VIEWED MATERIALS

In order to provide information in advance to participants, videos made by three organizations which presented "Trends in Japanese-German Academic Collaborations" were posted on a special website.

#### Japan Society for the Promotion of Science (JSPS)

Dr. Masahiko Hayashi



#### Deutscher Akademischer Austauschdienst (DAAD) Office Tokyo

Dorothea Mahnke



#### Deutsche Forschungsgemeinschaft (DFG)

Dr. Ingrid Kruessmann / Raoul Wagner



# LIST OF PARTICIPANTS

#### **HEIDELBERG UNIVERSITY**

Eitel	Bernhard	Rector
Gerke	H. Joachim	Head of International Relations Division
Piller	Oliver	Coordinator, Cooperation Asia (except China, Taiwan), International Relations Division
Schenk	Sabine	Heidelberg Univesity Office, Kyoto
Weller	Marc-Philippe	Professor, Vice-Rector for International Affairs

#### **KYOTO UNIVERSITY**

Inagaki	Kyoko	Executive Vice-President for Gender Equality, International Affairs, Public Relations, and External Affairs
Kanno	Chiyoko	URA (University Research Administrator), KURA; Deputy Director, Kyoto University European Center
Kerr	Ainslie	Administrative Staff, International Affairs Division
Kitoba	Daisuke	Deputy Director, International Affairs Division
Kono	Yasuyuki	Professor, Vice-President for International strategy; Director, Kyoto University North American Center
Mabuchi	Mitsumasa	Director, International Affairs Division
Minato	Nagahiro	President
Ogawa	Kyohei	Administrative Staff, International Affairs Division
Tobita	Ayako	International Relations Manager, International Affairs Division
Yokoyama	Mika	Professor, Deputy Executive Vice-President for Gender Equality and International Affairs; Director, Kyoto University European Center

#### KARLSRUHE INSTITUTE OF TECHNOLOGY

Hirth	Thomas	Vice President for Innovation and International Affairs
Rümmele	Klaus	Head, International Affairs
Schmidt	Oliver	Head, International Cooperation and Projects

#### **TOHOKU UNIVERSITY**

Imamura	Fumihiko	Director, International Research Institute of Disaster Science
Kobayashi	Moto	International Program Coordinator, Global Engagement Division
Misumi	Taeko	Specially Appointed Associate Professor/ Coordinator, Office for International Initiatives
Miyamoto	Hirohisa	Deputy Director, Global Engagement Division
Ohno	Hideo	President
Osumi	Noriko	Professor, Vice-President for Public Relations and Promotion of Diversity
Saito	Aya	Director, Global Engagement Division
Sato	Kei	Section Chief, Global Engagement Division
Ueki	Toshiya	Professor, Excecutive Vice President for General Affairs, Financial Affairs and International Relations
Yamaguchi	Masahiro	Professor, Vice-President for Education Reform and Global Engagement

#### **UNIVERSITY OF GÖTTINGEN**

Casper-Hehne	Hiltraud	Representative for International Affairs
Falkowski	Tanja	Head of International Relations; Deputy Director of the International Office

#### **OSAKA UNIVERSITY**

Fukui	Haruna	Deputy Chief, International Affairs Division
Ishikawa	Mayumi	Executive Assistant to the President; Professor, Center for Global Initiatives
Kawahara	Genta	Professor, Exective Vice President
Kawazoe	Masahito	Assistant Head, International Affairs Division
Kimoto	Yoko	Head, International Affairs Division
Nishio	Shojiro	President
Yamaguchi	Maiko	Chief, International Affairs Division

Global Engagement Division Tohoku University

2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan Tel: +81-22-217-5578 Fax: +81-22-217-4846

