Global Environmental Systems Leader Program

Global Environmental Research and Education for KEIO SFC & Science-Technology Master and Ph.D course with Science/Technology and Governance:

http://gesl.sfc.keio.ac.jp/

Yasushi Kiyoki
KEIO University, SFC

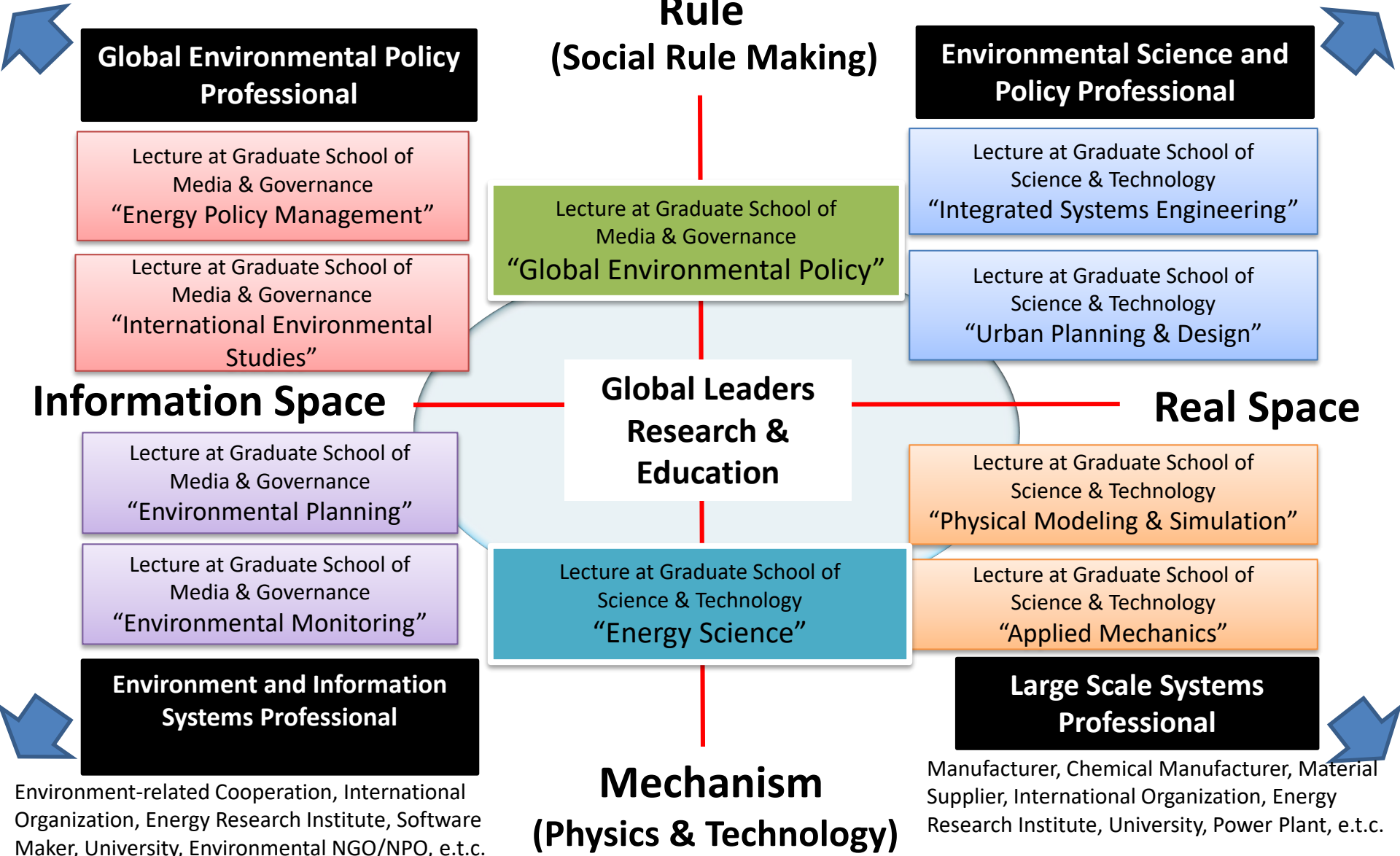# GESL Visions and Missions

- GESL aims to realize world-class master's and doctoral courses by combining **a team of professionals, graduate students** and **international collaborative institutes** in academic, industrial, and governmental sectors from all over the world.

- The important mission of GESL is to educate and bring up PhD students to be Global Environment System Leaders, with **interdisciplinary and international aspects** including social rule making and science and engineering to achieve the recovery, continued improvement and safekeeping of the global environment, and the initiative to drive the design and creation of technological and social environmental systems.

Outline of GESL Program and Career Path (Major / Minor)

International Organization, Energy Research Institute, Governmental Agency, International University, Local Government, Environmental NGO/NPO, e.t.c.

Energy Research Institute, Governmental Agency, Local Government, Environmental NGO/NPO, International University, International Organization, e.t.c.

**Rule
(Social Rule Making)**

Global Environmental Policy Professional

Lecture at Graduate School of Media & Governance
"Energy Policy Management"

Lecture at Graduate School of Media & Governance
"International Environmental Studies"

Environmental Science and Policy Professional

Lecture at Graduate School of Science & Technology
"Integrated Systems Engineering"

Lecture at Graduate School of Science & Technology
"Urban Planning & Design"

Lecture at Graduate School of Media & Governance
"Global Environmental Policy"

Information Space

Lecture at Graduate School of Media & Governance
"Environmental Planning"

Lecture at Graduate School of Media & Governance
"Environmental Monitoring"

Global Leaders Research & Education

Real Space

Lecture at Graduate School of Science & Technology
"Physical Modeling & Simulation"

Lecture at Graduate School of Science & Technology
"Applied Mechanics"

Lecture at Graduate School of Science & Technology
"Energy Science"

Environment and Information Systems Professional

Large Scale Systems Professional

Environment-related Cooperation, International Organization, Energy Research Institute, Software Maker, University, Environmental NGO/NPO, e.t.c.

Mechanism
(Physics & Technology)

Manufacturer, Chemical Manufacturer, Material Supplier, International Organization, Energy Research Institute, University, Power Plant, e.t.c.

2. 3 Pillars in GESL International Training System

A. International Supervising Group

Each PhD student is supervised by three members: Professors in KEIO graduate schools of "Media and Governance and Science and Technology" and an International Institute.

B. International Training

3 months in master course and total 6 months in PhD course at international organizations and research institutes.
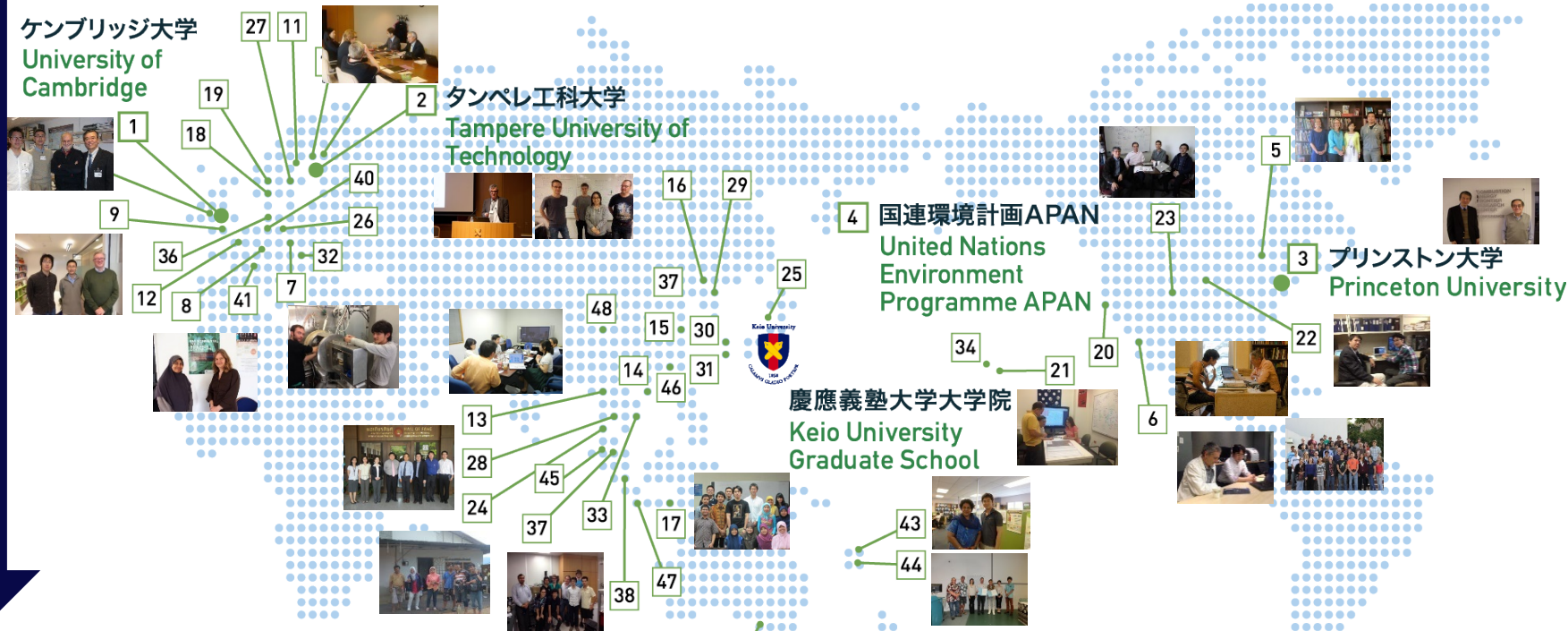
C. Distant Collaboration System

Multiple access distant collaboration system for educating and studying environmental systems, mechanisms and governance.

A. International Supervising Group
B. International Training

Each PhD student is supervised by three members: Professors in KEIO graduate schools of "Media and Governance and Science and Technology" and an International Institute.

3 months in master course and total 6 months in PhD course at international organizations and research institutes.

ケンブリッジ大学
University of Cambridge

タンペレ工科大学
Tampere University of Technology

国連環境計画APAN
United Nations Environment Programme APAN

プリンストン大学
Princeton University

慶應義塾大学大学院
Keio University Graduate School

Continuous International Collaborative Research and Education

GESL International Research/Education Collaboration

GESL International Research/Education Collaboration and Partnerships

Tampere Univ. of Tech. (Finland)

Imperial College (UK)

Univ. of Jyväskylä (Finland)

Helsinki Univ. (Finland)

MSRA

MIT (US)

Cambridge U. (UK)

Karolinska Institutet (Sweden)

Carnegie Mellon Univ. (US)

LSE (UK)

UN Asia Pacific Adaptation Network

Univ. of Kiel. (Germany)

Univ. of Rochester (US)

Yonsei Univ. (Korea)

Univ. of Halle-Wittenberg (Germany)

École Centrale (France)

Max-Planck-Institut (Germany)

Fudan Univ. (China)

UCSD (US)

Princeton Univ. (US)

Munich Univ. of Tech. (Germany)

Hanoi U. (Vietnam)

Univ. of Southern California (US)

Charles Univ. (Czech)

VNU-UET. (Vietnam)

Univ. of Hawaii (US)
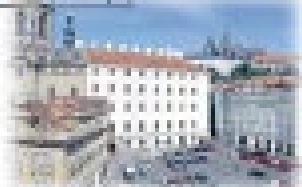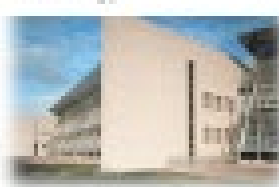
Chulalongkorn Univ. (Thai)

EEPIS (Indonesia)

NECTEC (Thai)

- 🔴 Partner University/Institute
- 🟢 University/Institute (already with MOU)
- 🔵 University/Institute (under discussion of MOU)

GESL Program

M1   M2   D1   D2   D3

| Major Subject | Master Thesis | Subject | Ph.D Thesis | Ph.D Degree |

Minor Subject ... or Subject

Student-Advisory Group Meetings by GESL Faculty Members
（Black Wednesday） Every Semester

International Supervising Group
（ Professors in KEIO graduate schools of "Media and Governance , Science and Technology" and an International member）

- International Internship and Field Work (3 months in master course

- International Internship and Field Work (total 6 months in PhD course

Degree-Regulations

Master Course Lectures（4 Main Subjects：
**Global Environmental Policy Professional,
Environment and Information Systems
Professional, Environmental Science and
Policy Professional, Large Scale Systems
Professional)**

PhD Course Lectures（4 Main Subjects：
**Global Environmental Policy
Professional,
Environment and Information Systems
Professional, Environmental Science
and Policy Professional, Large Scale
Systems Professional)**

Ph.D Candidate Evaluation (Syllabus, Lecture, 2ndary Language, Skill Subject)

Final Presentation

Formal Presentation

Final Examination

(1) **Consciousness** (Vision, Mission, Passion and Inspiration)

(2) Interpretation of current environmental situations in **society and technology**

(3) **Regional (Local) Analyses** and Innovative Methods to be applied to **Global** Environmental System and Research

Under GESL

$\rightarrow$

- Design and Implement the Systematic Way to lead to Global Leaders

Advantages for graduate students in GESL

GESL has the following three advantages:

● **Advantage 1 International Training System**

● **Advantage 2 International Advisory Group with Academia-Industry-NPO and Distant Collaboration System**

● **Advantage 3 Distant Collaboration System**

● **<u>Advantage 1 International Training System</u>** :

- GESL students study abroad for total six months during their doctoral work (two three-month periods) - at **international collaboration institutes** (foreign partner institutions), such as **Princeton University** (USA), **University of Cambridge** (UK), **Tampere University of Technology** (Finland) and **United Nations APAN**.

- By exposing students to foreign cultures and research environments during the GESL course itself, this program aids in developing human resources with design, implementation and communication skills for global environmental systems.

- Travel and living expenses are supplied by this program.

- The international training should be conducted from Fall Semester in 2020 (September 2020).

● **Advantage 2** **International Advisory Group**

During the whole GESL course, students are advised by the international advisory group:

- one professor in Graduate School of Media and Governance,

- one professor from the Graduate School of Science and Technology, and

- one adviser from GESL's extensive network of foreign partner institutions (international collaboration institutes)

● **Advantage 3 Distant Collaboration System**

- Students are educated by using multiple access distant collaboration system which combines 5D data visualization, and high-definition real-time video communications in order to communicate with their advisory committee.

International Collaborative Research via Distant Collaboration System (5D World Map System) 1/3

インドネシア・国際会議KCIC (2012-)

タイ・環境センシングフィールドワーク
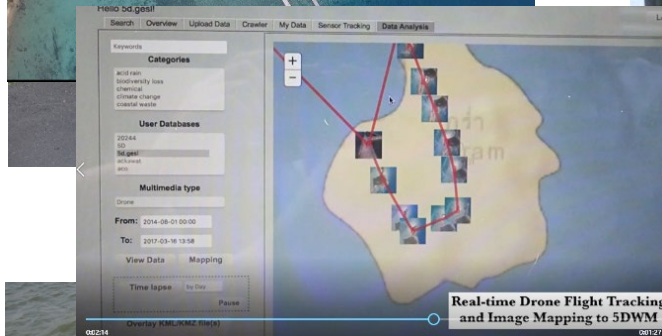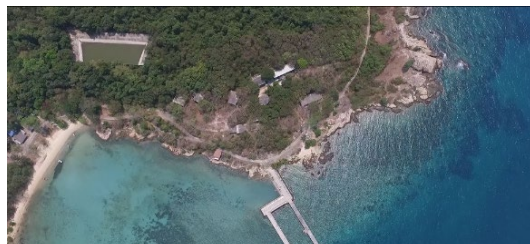
協働研究者：Dr. Ali Ridho Barakbah, Dr. Sritsta Sukaridhoto, Dr. Dadet Pramadiyanto, Dr. Wahjo Sesulihatien, Dr. Tri Harsono他，EEPIS, インドネシア（ワイヤレスセンサネットワーク，IoT, ロボティクス）、Prof. Chawan Koopipat, Prof. Aran Hansuebsai, チュラロンコーン大学，タイ（画像処理・リモートセンシング），Hazard and Disaster Research Center , インドネシア（環境・災害分析）、Prof. Virach sornlertlamvanich，タマサート大学，タイ（ビッグデータ分析），Prof. Petchporn Chawakitchareon, チュラロンコーン大学，タイ（環境工学），Prof. Hannu Jaakolla, タンペレ工科大学、フィンランド（ソフトウェア工学、モバイル・コンピューティング），Prof. Bernhard Thalheim, Christian-Albrechts University, ドイツ（データモデリング）等

NY国連SDGsワークショップ（2017年7月）

NY国連SDGsワークショップ（2017年3月）

国連大学との国際模擬交渉・合同ワークショップ（2014 – 2017）

Asia Pacific Ministerial Summit（2017年9月）より、
国連SDGs Help Desk Teamとの共同研究教育開始

Collaboration with
UN ESCAP SDG HELPDESK

http://sdghelpdesk.unescap.org/toolboxes

16
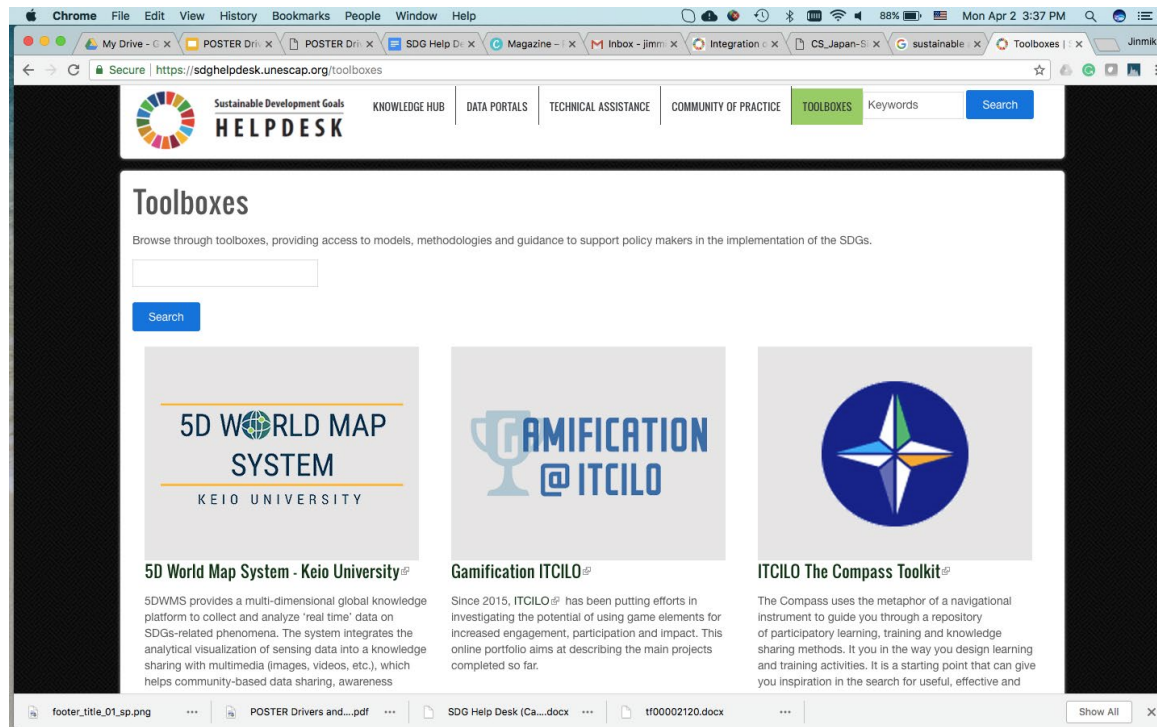
GESL International Research/Education Collaboration and Internship Activities

US・CMU

US・UCSD

US・UCSB

Finland TUT
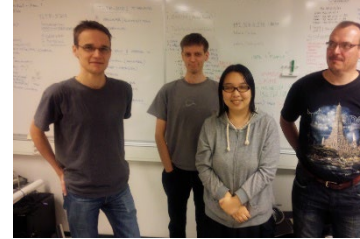
UK・Cambridge
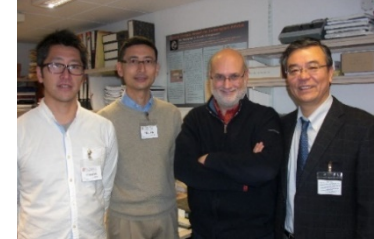
US・HAWAII
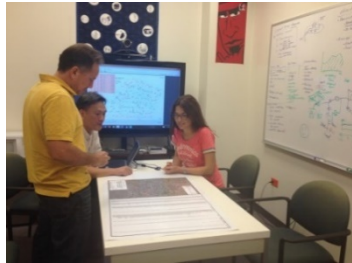
Surabayam ITS/EEPIS

UK・Oxford
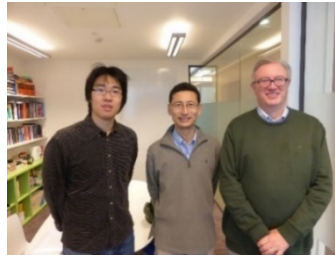
Swiss・CERN
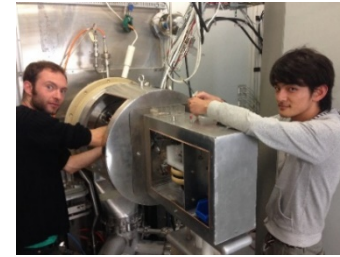
Finland Jyuvaskyla

Fiji（UNDP）

Singapore
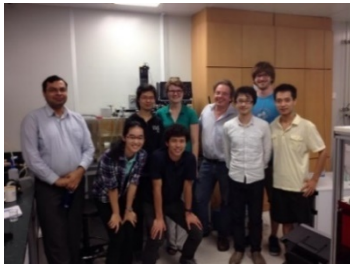
Germany

US・Colorado
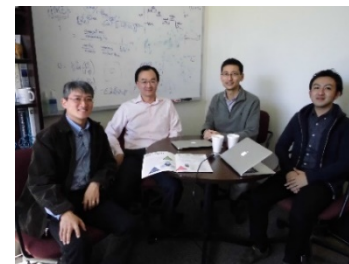
Thai Chulalongkorn

Fiji USP

Malaysia

US・Nebraska
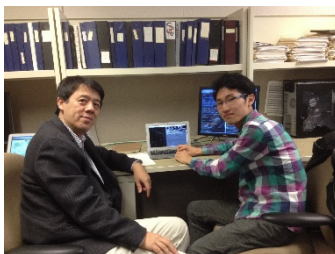
Thai・NECTEC

USA: Kakehashi

International Training Network

GESL has a strong and wide network with 108 international institute/universities.
GESL students conducted their international training 95 times.
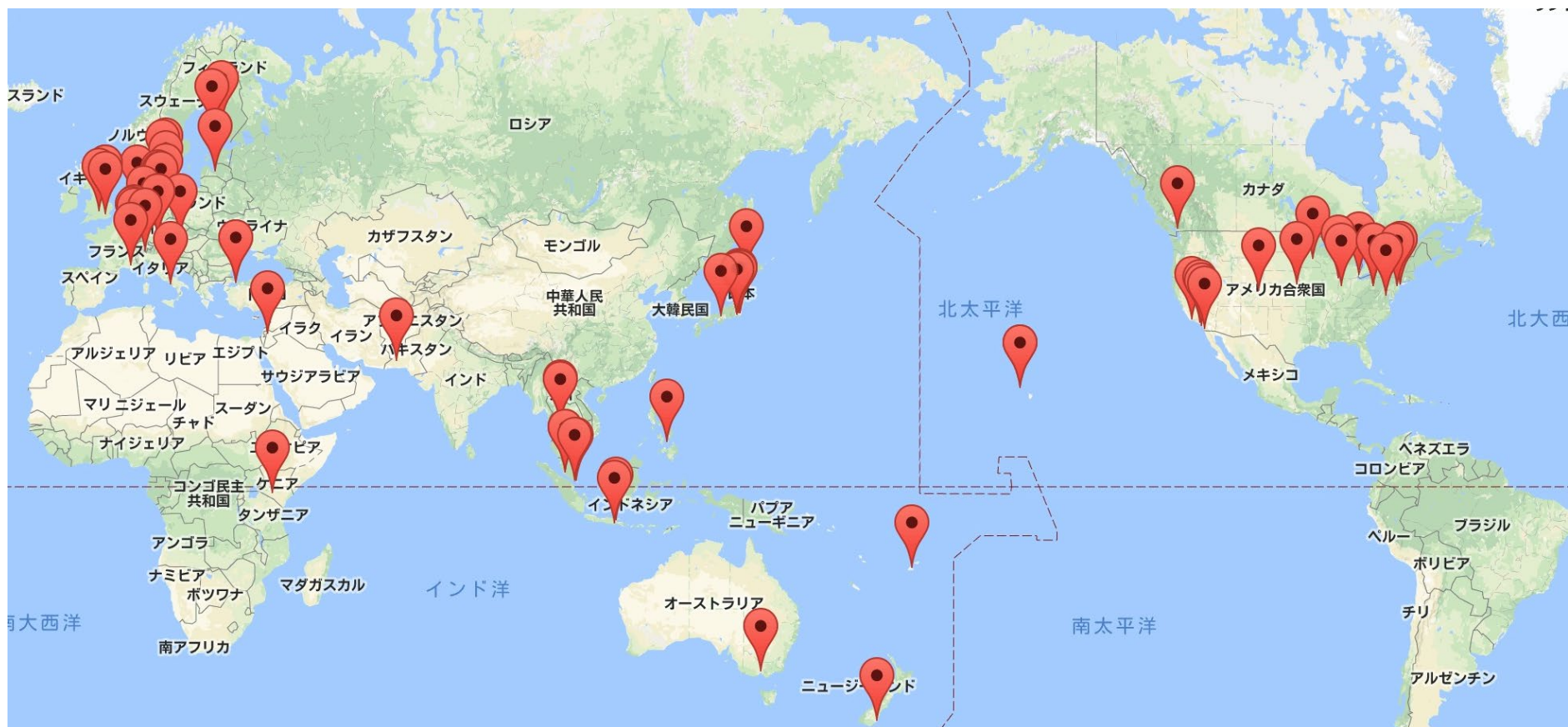
International Activities
of GESL program

GESL has international collaborative network with 108 international institutions. GESL provides several opportunities to conduct international activities (workshop, seminar, conference, paper co-writing, etc.) based on this network.

The GESL method for fostering global leaders is becoming popular among the international institutions in the network.

Workshop for Career-Path Development in US University of Washington(UW), Microsoft Research, Gates Foundation, Boeing

University of Washington

GESL students have made a plan to hold a workshop for career-path development by them selves at University of Washington(UW), Microsoft Research, Gates Foundation, Boeing etc.

They have created young-researcher's network and promote the collaborative researches.

Microsoft Research

Gates Foundation, Boeing

Workshop for Career-Path Development in Paris and Geneva [1/2]

 GESL offers a opportunity to hold a workshop for career-path development.

 In 2017, we visited several UN-related international organizations in Paris and Geneva.

*   国際エネルギー機関(IEA),
*   経済協力開発機構環境局(OECD),
*   国際連合教育科学文化機関環境セクション(UNESCO),
*   国連環境計画産業技術経済局(UNEP)

Mr. Rintaro Tamaki
Deputy Secretary-General, OECD

IEA

OECD

Mr. Eisaku Toda
Senior Programme Officer
Chemicals and Waste Branch, UNEP

UNEP Chemicals

UNESCO

UNEP

International Negotiation Role-play
with United Nations University [1/2]

Ms. Jimena Leiva Roesch (Policy Analyst, the International Peace Institute, Austria, 元グアテマラ国 外交官)

Ms. Ye - Min Wu (Directorate, Ministry of Foreign Affairs, Singapore, 現職シンガポール国 外交官)

In one of GESL 4 lecture courses, "Global Environmental Policy Management", we offers a joint workshop on International Negotiation Role-play (simulation) with UN University and 2 guest lecturers (active diplomats).

GESL students discuss on UNFCCC or other international negotiation on water-resourses for example at the role-play (simulation) as a representative of each developing or developed county.

C. RA Activities with Remote Collaboration System

Public Relations Team: Information transmission of GESL activities for outside

Webページ

Newsletterとパンフレット

GESL SYMPOSIUM 2013

RAによるWebページの公開、Newsletterの編集・発行

- Newsletterとホームページを利用して情報発信し、新たなコラボレーション，活動エリアの拡大，キャリアパスの構築を促進
- メンバー（12名）:花野井俊介(リーダー)、今西智哉、野澤拓磨、小松万里子、湯原大輔、徳島泰、野村昴太郎、林侑江、矢本昌平、Goumehei Elham、Shaheen Maisoon、梁俊晗

Research & Education Team: Effective Management of GESL equipment and contents

RAが主体となって本プログラムの備品を運用

- RA同士の知識共有 データベースである"5D World Map"や，遠隔コラボレーションシステム"3D collaboration system"を始め，3Dスキャナ&プリンタ，大規模並列計算マシン，電子走査型顕微鏡，フライス盤等，他分野に渡る10種以上の物品を管理
- メンバー(13名): Haitham Alkhalaf(リーダー)、Tatiana Endrjukaite 、友部勝文、山下達也、Iza Husna Mohamad Hashim、Siti Nor Khuzaimah Amit、Ahmad Muzaffar bin Baharudin、近藤智貴、Chalisa Veesommai、今城哉裕、巽瞭子、山口雅己、Marco Capitanio

Capacity Building Team: Support for RA activities & Communication among RA-Faculty-Secretariat Office

RAによる内部Webサイトの構築や新入生・留学生のサポート

- RA間のコラボレーションを促進するためのミーティング／ワークショップの企画・実施として、新入生RAや留学生RAのサポート、国際トレーニング円滑化のための準備ガイドの作成企画、新入生を支援するためのメンターシステムの構築
- メンバー(17名)：小林周(リーダー)、前田知貴、西山勇毅、鈴木悠、鈴木良、井上岳、西田健治朗、西岡宗、姜ソンウ、中曽爽香、小川愛実、遠藤冬玲、Helena Machin Cavalle, Soyeng Kaku, Xie Lijun, Jinmika Wijitdechakul, Wahyu Sesulihatien

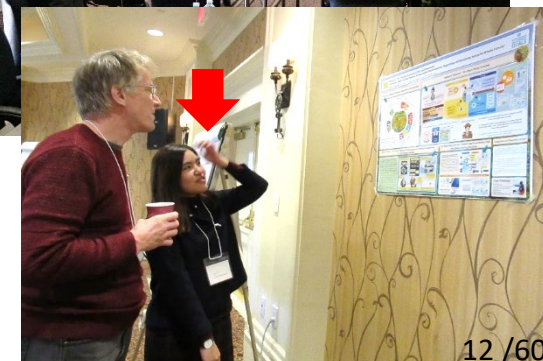# UN SDGs-GESL Joint Workshop with Remote Collaboration System in NY (March 5-7th, 2017)
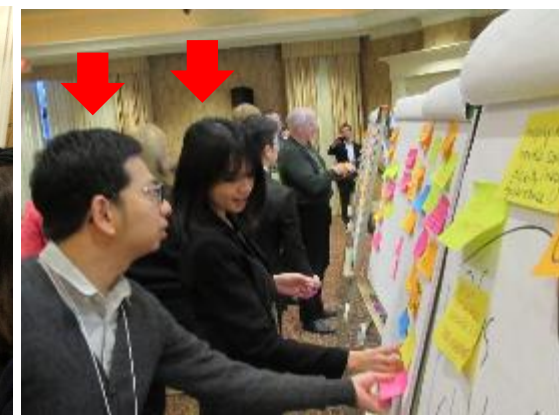
(1) Group Discussion

(2) Research project presentation
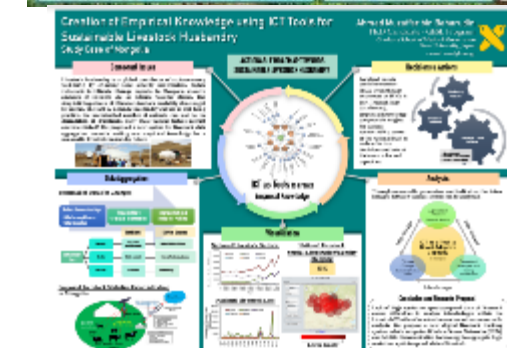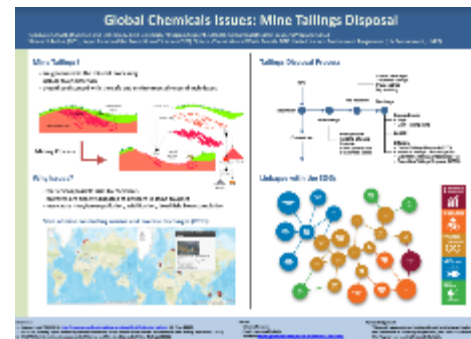
(3) Poster presentation

Knowledge Platform Creation on **S**DG 14 with **S**DG HELP DESK in ESCAP

https://sdghelpdesk.unescap.org/

A new environmental-semantic computing system for **O**cean Environment-analysis with 5D

- 5D World Map System provides a platform to collect and analyze **'r**eal time'** information across SDG partnership and **c**ivil societies** members for facilitating **p**olicy making** in the region.

- 5D World Map System, and the applications in the field of Agenda 2030 implementation is to **i**ntegrate** the analysis of **s**ensing data** into a knowledge sharing system with **m**ultimedia**, based on the framework of Sensing-Processing-Actuation of Cyber-Physical Systems that allow to acquire SDG related data and perform **a**nalytical visualizations** from multiple sites around **A**sia and Pacific region**.

- By using 5D World Map System integrated with these functions, the users are able to perform a **g**lobal analysis** on the environmental **s**ensing data** along with the related **m**ultimedia** data on a **s**ingle view** of time-series maps, based on the spatiotemporal and semantic correlation calculations.
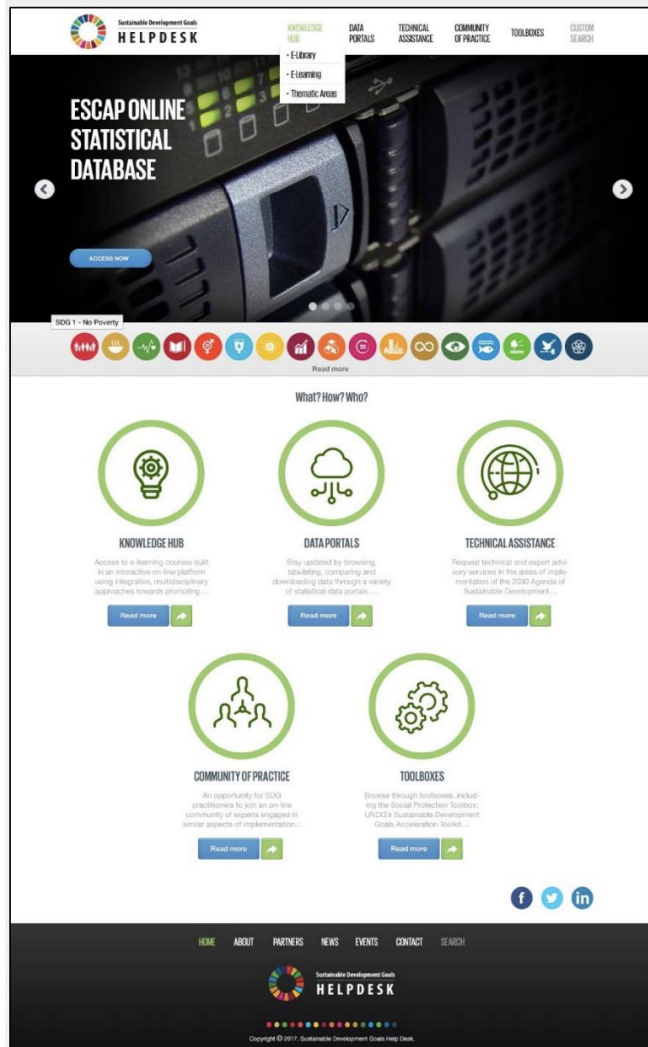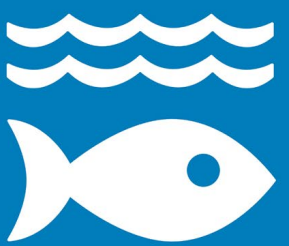
Knowledge Platform Creation on SDG 14 with SDG HELP DESK in ESCAP

GESL

Sustainable Development Goals
HELPDESK

SDG 14 TARGETS:

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds

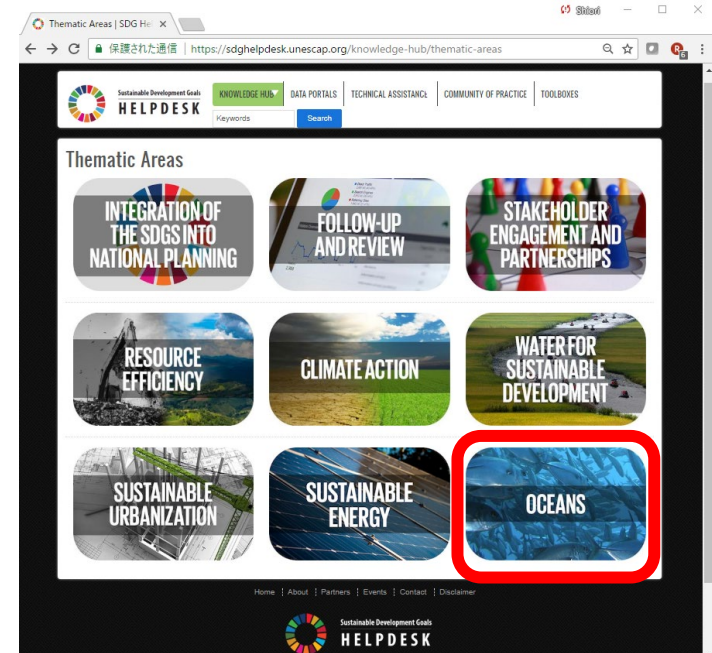**14.2** By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices

14.5: By 2020, conserve at least 10 per cent of coastal and marine areas

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing

14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources

14 LIFE BELOW WATER

SUSTAINABLE DEVELOPMENT GOALS | NEREUS PROGRAM Predicting Future Oceans

https://sdghelpdesk.unescap.org/
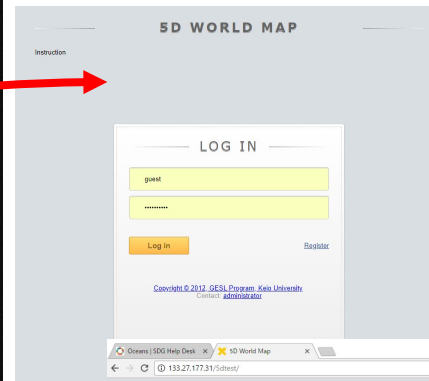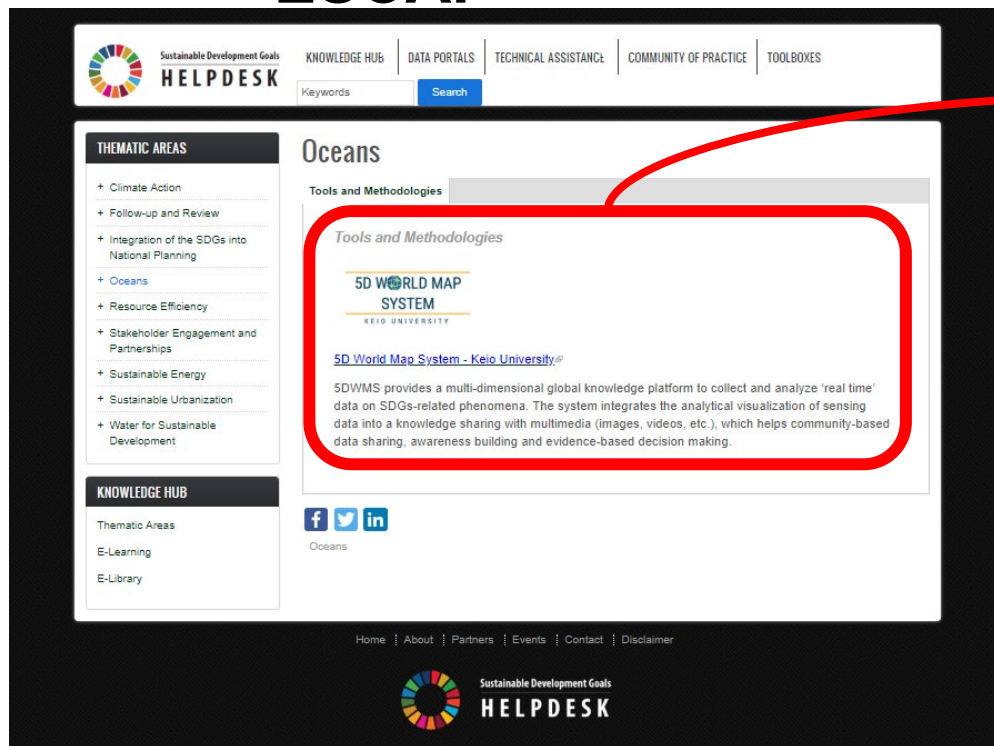
TOP => KNOWLEDGE HUB => OCEANS

SDG 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources. The increasingly adverse impacts of climate change, overfishing and marine pollution are jeopardizing recent gains in protecting portions of the world's oceans.
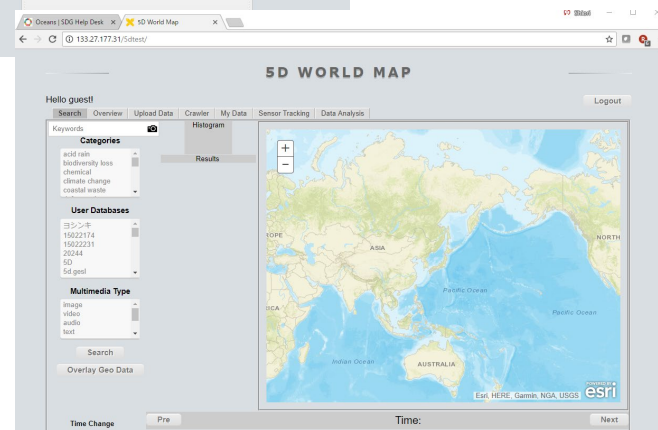
Global Environmental System Leaders Program (GESL), Keio University is developing 5D World Map for implementing **Goal 14: Life below water (OCEANS)**

Source: http://www.nereusprogram.org/tag/sdg-14/

Knowledge Platform Creation on **S**DG 14 with **S**DG HELP DESK in ESCAP

Anyone can log-in as a guest

https://sdghelpdesk.unescap.org/
TOP => KNOWLEDGE HUB => OCEANS

Conserve and sustainably use the oceans, seas and marine resources. The increasingly adverse impacts of climate change, overfishing and marine pollution are jeopardizing recent gains in protecting portions of the world's oceans.

http://133.27.177.31/5dtest/

Global Environmental System Leaders Program (GESL), Keio University is developing 5D World Map for implementing **Goal 14: Life below water (OCEANS)**

Knowledge Platform Creation on SDG 14 with SDG HELP DESK & SDG 9, 11 with IDD in ESCAP
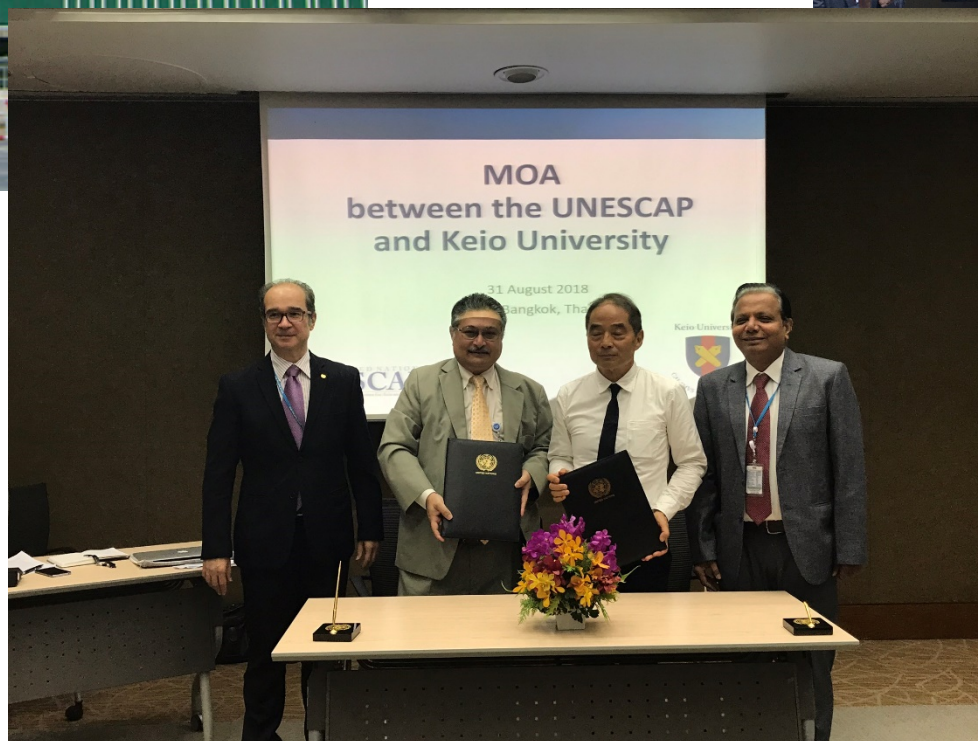
GESL Certification

When a student complete Ph.D. course and receive a Ph.D. degree, the certification of GESL will be indicated onto the diploma.

- 和文：「グローバル環境システムリーダー（博士）」
- English ：「Global Environmental System Leader (Ph.D)」

Call for Application

"Global Environmental System Leaders Program (GESL)"

Doctoral students of

Graduate School of Media and Governance who entered in April, 2020.

GESL official website: http://gesl.sfc.keio.ac.jp/

<Selection schedule>

May 18 (Mon) 17:00: Deadline of submission

Documents：

Form1　：Application for Enrollment in GESL Program

Form2　：Research Achievement List

Form3　：Resume

Please send the above 3 forms to GESL office (gesl-office@sfc.keio.ac.jp) in PDF form.

*Please make sure to input your supervisor's name in Form 1, while we accept it without his/her signature, when he/she is

included in CC of the submission mail.

May 21 (Thur): Notification of Document Review

*The date and time of interview will be announced by e-mail later.

After May 25 (Mon): Interview (by Skype)

Sender: Global Environmental System Leaders Program (GESL) Office

Contact: gesl-office@sfc.keio.ac.jp

Keio University

（様式 1/Form1

年 Year	月 Month(3-letters)	日 Date
2017	●	●

様式1：GESLプログラム参加申請書
Form1：Application for Enrollment in GESL Program

Academic Year　　**2017**　年度

GESL プログラム参加申請書
Application Form for Enrollment in GESL Program

●GESL RA への応募 Application for GESL RA	☑希望する　・　□希望しない I (☑wish　/　□do not wish) to apply for the GESL Research Assistant
●氏名 Name	㊞ seal
学籍番号 Student ID	
●研究科名 Name of Graduate School	
●専攻 Major	
●学年 Grade	

●生年月日 Date of Birth	年 Year	月 Month(3-letters)	日 Date	年齢 Age

●GESL プログラムにおける 研究テーマ Research Theme at GESL Program	

●現在行っている研究概要：
Overview of your current research:

＊枠の大きさは変更しないこと。Please do not change the size of this text field.

様式1：2枚目　　GESLにおける研究計画

●GESL における研究計画（GESL プログラムとの関連性について明確に記述してください）：
Research plan while at GESL program (please indicate clearly about the relationship between GESL program and your research issues):

＊枠の大きさは変更しないこと。Please do not change the size of this text field.

様式1：3枚目　GESLにおける下記活動計画、
【受入担当教員記入欄】

●GESL における下記活動計画（実施予定時期や具体的内容を記述してください）：
1）国際トレーニングの計画
2）マイナー研究の計画
3）キャリアパスの構築計画

Concerning plan of your following GESL activities (Please indicate the term of your plan and concrete idea of each plans):
1) International training
2) Minor research
3) Career path creation

＊枠の大きさは変更しないこと。Please do not change the size of this text field.

●【受入担当教員記入欄】　※重要！！

本プログラムの主旨を理解し、学生のプログラムへの参加申請を承認します。
Having understood the purpose of the GESL program, I approve this application for the program by the student.

GESL プログラムへの参加申請について Approval for Application for GESL Program	☐ 承認する Approve to apply for the GESL Program
受入担当教員（主査）氏名 Name of Main Advisor (seal or signature is required)	印 seal
受入担当教員　研究科名 Name of Graduate School of Main Advisor	
受入担当教員　専攻またはプログラム名 Major or Name of Program of Main Advisor	

※受入担当教員（主査）の氏名は必ず記入してください。
※受入担当教員（主査）からの承認を得て，申請を行ってください.
※受入担当教員（主査）からの承認を得た上で、やむを得ない事情により、指導教員の押印またはサインを得られなかった場合は、当該書類提出メールの Cc リストに受入担当教員（主査）のメールアドレスを追加することにより，受付可能となります.
※Please fill the name and information about your main advisor.
※Please obtain your main advisor's consent to this application.
※After obtained your main advisor's consent to this application, please add your main advisor's email address to the Cc list, if you couldn't get signature or seal from your main advisor by unavoidable circumstances.

様式2：Form2　研究業績リスト
Form2：Research Achievement List

（様式 2/Form 2）

年 Year	月 Month(3-letters)	日 Date
2017	●	●

Keio University

様式3：履歴書
Form3：Resume

（様式 3/Form 3）

年 Year	月 Month(3-letters)	日 Date
2017	●	●

履歴書
Resume

氏名 Name	Family Name	First Name	Middle Initial	写真 Photograph 4cm × 3cm
フリガナ Pronunciation in "Kana"				
現住所 Address	〒			
国籍 Nationality				
メールアドレス Email				

生年月日・年齢・性別 Date of Birth・Age・Sex	年 Year	月 Month(3-letters)	日 Date	年齢 Age	性別 Sex
					男 Male・女 Female

学歴 Academic Background

在学期間　Period of enrollment		大学名・学部名（研究科名） Name of University/ Department	卒業・修了・在学中 Graduated/ Completed/ Enrolled
年 Year 月 month	- 年 Year 月 month		
	-		
	-		
	-		
学位 Academic Degree			
学位取得大学名 Name of University of receive the academic degree			

学位取得年月日 Receiving date of the academic degree	年 Year	月 Month(3-letters)	日 Date

職歴 Work Experience

在籍期間　Period of Employment		企業名・機関名 Name of Company / Institute	役職・業務 Position・Job Description
年 Year 月 month	- 年 Year 月 month		
	-		
	-		
	-		

GESL プログラム志望動機・アピールすべきこと(英語力等を含む)・特技・特記事項等
Reason for applying GESL program, self-promotion (including English skills), special ability or special notes