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)

Global Environmental Policy Professional
- Lecture at Graduate School of Media & Governance “Energy Policy Management”
- Lecture at Graduate School of Media & Governance “International Environmental Studies”

Global Leaders Research & Education
- Lecture at Graduate School of Media & Governance “Environmental Planning”
- Lecture at Graduate School of Media & Governance “Environmental Monitoring”

Mechanism (Physics & Technology)
- Lecture at Graduate School of Science & Technology “Energy Science”

Information Space
- Environment and Information Systems Professional

Rule (Social Rule Making)
- Global Environmental Policy Professional
- Lecture at Graduate School of Media & Governance “Global Environmental Policy”
- Lecture at Graduate School of Science & Technology “Integrated Systems Engineering”
- Lecture at Graduate School of Science & Technology “Urban Planning & Design”

Real Space
- Large Scale Systems Professional
- Manufacturer, Chemical Manufacturer, Material Supplier, International Organization, Energy Research Institute, University, Power Plant, e.t.c.


Energy Research Institute, Governmental Agency, Local Government, Environmental NGO/NPO, International University, International Organization, etc.
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.
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.
GESL International Research/Education Collaboration and Partnerships

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

Minor Subject

Ph.D Thesis

Ph.D Degree

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)

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)

Formal Presentation

Final Presentation

Final Examination

Degree-Regulations
New directions to Leadership development for Global Environmental Systems

(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

→

• 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
Advantage 1  International Training System:

- 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

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 somrlertlamvanich, 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
国連大学との国際模擬交渉・合同ワークショップ（2014－2017）

NY国連SDGsワークショップ（2017年3月）

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

International Collaborative Research via Distant Collaboration System（5D World Map System）2/3

NY国連SDGsワークショップ（2017年7月）
International Collaborative Research via Distant Collaboration System (5D World Map System) 1/3

Collaboration with UN ESCAP SDG HELPDESK

http://sdghelpdesk.unescap.org/toolboxes
GESL International Research/Education Collaboration and Internship Activities
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.
GESL students have made a plan to hold a workshop for career-path development by themselves at University of Washington (UW), Microsoft Research, Gates Foundation, Boeing etc. They have created young-researcher’s network and promote the collaborative researches.
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)
Workshop for Career-Path Development in Paris and Geneva [2/2]

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

UNESCO

UNEP Chemicals

UNEP
In one of GESL 4 lecture courses, “Global Environmental Policy Management”, we offer a joint workshop on International Negotiation Role-play (simulation) with United Nations University and 2 guest lecturers (active diplomats).
GESL students discuss on UNFCCC or other international negotiation on water-resources 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

- 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、野村昂太郎、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、鈴木進、井上岳、西田健治朗、西岡宗、姜ソウ、中曽爽香、小川愛実、遠藤冬玲、Helena Machin Cavalle, Soyeng Kaku, Xie Lijun, Jinnika 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
A new environmental-semantic computing system for Ocean Environment-analysis with 5D

- 5D World Map System provides a platform to collect and analyze ‘real time’ information across SDG partnership and civil societies members for facilitating policy making in the region.
- 5D World Map System, and the applications in the field of Agenda 2030 implementation is to integrate the analysis of sensing data into a knowledge sharing system with multimedia, based on the framework of Sensing-Processing-Actuation of Cyber-Physical Systems that allow to acquire SDG related data and perform analytical visualizations from multiple sites around Asia and Pacific region.
- By using 5D World Map System integrated with these functions, the users are able to perform a global analysis on the environmental sensing data along with the related multimedia data on a single view of time-series maps, based on the spatiotemporal and semantic correlation calculations.

https://sdghelpdesk.unescap.org/
**Knowledge Platform Creation on SDG 14 with SDG HELP DESK in ESCAP**

**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.

**SDG 14: Life Below Water**

Conserv 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.

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

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

https://sdghelpdesk.unescap.org/
Global Environmental System Leaders Program (GESL), Keio University is developing 5D World Map for implementing Goal 14: Life below water (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.

Anyone can log-in as a guest.
Knowledge Platform Creation on SDG 14 with SDG HELP DESK & SDG 9, 11 with IDD in ESCAP
GESL Certification

When a student completes a Ph.D. course and receives a Ph.D. degree, the certification of GESL will be indicated on the diploma.

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

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

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<th>Academic Year</th>
<th>2017年度</th>
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<td>学籍番号</td>
<td>Student ID</td>
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<td>研究科名</td>
<td>Name of Graduate School</td>
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<th>GESLプログラムにおける研究テーマ</th>
<th>Research Theme at GESL Program</th>
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<td>現在行っている研究概要</td>
<td>Overview of your current research</td>
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●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.
**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 plan):

1) International training
2) Minor research
3) Career path creation

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<th>GESLプログラムへの参加申請について</th>
<th>□ 承認する</th>
<th>Approve to apply for the GESL Program</th>
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<td>受入担当教員（主査）氏名</td>
<td>Name of Main Adviser (seal or signature is required)</td>
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<td>受入担当教員研究科名</td>
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<td>受入担当教員専攻またはプログラム名</td>
<td>Major or Name of Program of Main Advisor</td>
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※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

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<td>国際会議発表論文（投稿中を含む）&lt;br&gt;Presentations at international conference (please include the paper under reviewing)</td>
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<td>国内会議論文、研究会発表論文（投稿中を含む）&lt;br&gt;Presentations at domestic conference, seminars or workshops (please include the paper under reviewing)</td>
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<td>その他（著書、特許、開発実績、受賞等）&lt;br&gt;Other achievements (publications, patents, developments, award, etc.)</td>
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※申請者にアンダーラインを引いてください<br>*Please underline the name of the applicant.

※枠の大きさは調整可能です。複数ページ可になってもかまいません。<br>*Please change the size of each text field as required. Multiple pages are permitted.
様式3:履歴書
Form3: Resume

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写真
Photograph
4cm x 3cm

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

学歴
Academic Background

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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

学位
Academic Degree

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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

職歴
Work Experience

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GBSL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 GBSL program, self-promotion (including English skills), special ability or special notes

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