Science, Technology and Innovation Policy Program

GiST GRIPS Innovation, Science and Technology Policy Program

GRIPS 政策研究大学院大学
National Graduate Institute For Policy Studies

National Graduate Institute for Policy Studies
Science, Technology and
Innovation Policy Program

Photo: Masao Nishikawa

Science, Technology and Innovation

STI Policy Research to Respond to Transformation in the STI Landscape

Prof. Takayuki HAYASH
Program Director
Science, Technology and Innovation Policy Program

Several decades have passed since the arrival of the knowledge-based society, where knowledge has a substantial impact on the development of society and economy. Since then, society and the economy have been increasing in complexity, in an atmosphere of uncertainty, to the point where appropriate promotion of science, technology and innovation (STI), accompanied by integration of advanced knowledge, has emerged as an important factor affecting decisions as to what kind of world, not just what kind of Japan, we should be working to achieve.

On the other hand, it is not easy to plan and implement STI policy. Science and technology research and development are now highly specialized, so there is a need for a long-term, complex process for implementing research results and innovation to benefit society. Also, realizing a sustainable development society requires multi-faceted decision-making that involves a wide range of stakeholders. To deal with such complex challenges, there is an urgent need for STI policies that are sufficiently advanced to enable planning, implementation and evaluation based on objective evidence.

The STI Program is the educational program in Japan that grants Master's and Doctoral degrees focusing on STI policy. This program nurtures both superbly capable STI policy researchers; and highly specialized professionals who can plan, draft, implement, evaluate and revise STI policies and strategies, using a scientific approach.

Moreover, the program expanded its offerings in 2020 to include evening and Saturday classes in Japanese that enable students to study in the program without taking time off from their jobs. The 2020 expansion also introduced the Short-Term STI Policy Management Training Program. These new program elements open the door for more people to engage in STI policy studies.

The Graduate Institute for Policy Studies (GRIPS) is expanding its global network to train mid-career politicians, government administrators, and people in industry to become policy and strategy formulation professionals. This expansion gives the Japanese students in the STI Program an opportunity to interact with students from abroad.

I sincerely hope that people with a strong interest in STI policy issues will join this program. The knowledge they gain in their studies here will surely enhance their careers, and be of use in their work to implement policies.

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Who should apply

- Government officials in charge of science, technology and innovation policy
- Management staff at research and funding institutions
- Local government officials in charge of science, technology and innovation related policy
- Faculty members and research administrators with an interest in, or whose work is related to, research & development management at universities
- Business personnel in charge of research management and innovation at corporations and nonprofit organizations.
- Individuals studying or conducting research at universities, research institutes and the like.
- Individuals with an interest in science, technology and innovation policy who wish to acquire advanced knowledge in that field and aim to become government officials or researchers.

Qualities and abilities that students are expected to acquire in the program

1 Advanced academic and interdisciplinary expertise in science, technology, and innovation and policy, and the ability to apply that expertise to policy issues in a variety of ways.

2 A wide range of knowledge of public policy, and the ability to understand science, technology, and innovation policy, and to analyze such policy from multiple perspectives.

3 The ability to: solve problems related to science and technology innovation policy, using a scientific approach; frame problems based on past scientific knowledge; construct hypotheses; conduct independent analyses of various quantitative and qualitative data, including data specific to science and technology innovation; compose research papers and policy proposals and present them to policy makers.

4 A strong understanding of the formulation and implementation of science and technology innovation policy; and the ability to make practical policy recommendations that bridge theory and practice.

5 The ability to act as a leader while respecting the various sets of values and systems in global society; an understanding of science, technology, and innovation policy; and a strong interest in communicating about such policy matters.

FACULTY MEMBERS

HAYASHI, Takayuki

Professor, Program Director

Specialty

Science and technology policy, scientometrics, higher education policy, evaluation

SUMIKURA, Koichi

Professor, Associate Director

Specialty

Intellectual Property Policy, Science and Technology Policy

INTARAKUMNERD, Patarapong

Professor, Associate Director

Specialty

Innovation Policy and Innovation Systems in Developing Countries

SUZUKI, Jun

Professor

Specialty

Science, Technology and Innovation Policy

IIZUKA, Michiko

Professor

Specialty

Science, Technology Innovation Policy in Developing and Emerging Countries

HIROKI, Kenzo

Professor

Specialty

Water and Disaster; International Cooperation

TAKAHASHI, Kazuaki

Professor

Specialty

Development Economics, Applied Microeconometrics

BRUMMER, Matthew

Assistant Professor (tenure-track)

Specialty

Science, Technology and Innovation Policy (STI); International Relations Theory; Japanese foreign and security policy

SUNAMI, Atsushi

Special Advisor to the President for Strategic Partnership; Adjunct Professor (President, The Sasakawa Peace Foundation)

Specialty

Science and Technology Policy, Science and Technology Diplomacy

ARIMOTO, Tateo

Adjunct Professor
(Senior Advisor to the President, Japan Science and Technology Agency (JST)
Fellow, International Science Council)

Specialty

Science & Technology policy

UEYAMA, Takahiro

Adjunct Professor (Chief Executive Member of the Council for Science, Technology and Innovation, Cabinet Office)

Specialty

Science and technology policy, history of science and technology, innovation policy, studies in higher education

NEI, Hisanori

Adjunct Professor; Professor Emeritus
(President and CEO, Japan Underground Oil Storage Co.Ltd.)

Specialty

Energy Policy, Nuclear Safety Policy, Policy for Regional Industry Promotion

... and many guest lecturers, including researchers, practitioners, current policy administrators, and corporate representatives

MASTER'S PROGRAM

Graduation requirements

Students are required to: complete a minimum 30 credits as stipulated in the curriculum of the Science, Technology and Innovation Policy Program: and receive a successful evaluation of their master' s thesis or policy paper.

Thesis seminar (Required Courses)	Coursework (Recommended and Elective Courses)	Total 30 credits or more
4 credits	26 credits or more	

Program duration	two years
Degree offered	Master of Public Policy

Schedule

The curriculum is designed to enable students to acquire the knowledge and skills necessary for problem analysis and policy & strategy planning, through coursework; and to produce a master's thesis or policy paper on one or more issues of their choice.

Model Schedule for Completion

		1st Year				2nd Year			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
Coursework (recommended and elective courses)	26 credits or more	8 credits	2 credits	7 credits		8 credits	1 credits		
Thesis Seminar (required courses)	4 credits			Research Methods	Research plan	Progress presentation		Progress presentation	Defense

Basic Courses *Courses offered in Japanese

科学技術イノベーション政策概論／科学技術イノベーション政策史／公的機関からのイノベーション創出／イノベーションと経済学／科学技術イノベーション政策立案演習、他

Advanced Courses *Courses offered in Japanese

ビブリオメトリクスとその応用／科学技術イノベーション政策と評価／計量分析演習／科学技術外交論／科学技術イノベーション政策の史的比較／科学技術とアントレプレナーシップ／知的財産マネジメント、他

This program aims to foster both a) skilled professionals who can plan, draft, implement, evaluate and revise science and technology innovation (STI) policy and strategies using scientific approaches; and b) well-prepared Ph.D. entrants who aim to become researchers. In order to give the participants the advanced policy research capabilities and the ability to plan and implement policy and strategy that are required of such human resources, the curriculum is designed to equip them with knowledge and skills in multiple essential disciplines; analytical skills in various fields of social science; and foreign language skills.
As of April 2020 some of the classes are held in the evenings and on Saturdays, which makes it possible for the students to obtain a master's degree without taking leave from work. Since the main target group of the master's program is Japanese working professionals, most of the classes are taught in Japanese.

Examples of Past Thesis Titles

AY	Theme
2023	● デジタル技術が社会課題解決への「参画」を促進するには ── 実践者へのインタビュー調査 ── ● 国立大学の統合が及ぼす影響 ── 医学系大学と総合大学の統合についてのDID分析 ──
2022	● 共創の場形成支援プロジェクトの採択地区から見る産学官民の共創的な関係性とその効果 ● 日本の地方中枢都市の起業エコシステムの分析と起業エコシステム概念の再検討 ── 札幌･仙台･広島･福岡の比較分析 ──
2021	● 開発途上国におけるソーシャルイノベーションの実現にかかる開発協力機関と各主体との共創のあり方とその効果について ── 社会課題解決にかかる国際協力機構(JICA)の事業を例にして ● i-Constructionの政策効果の実証分析に基づくイノベーションの創出と普及に必要な公共調達部門の能力の考察

Alumni Voices

KOBAYASHI Kiyokazu (Japan, 2023)
Nagano City Hall

Aiming to Create an Innovation-Driven Community

After completing my master's degree in environmental engineering, I joined Nagano City Hall, where I worked on environmental policy, transportation policy, and senior citizen initiatives. To further enhance my comprehensive skills as a civil servant and become a public policy professional capable of making Nagano a city to be proud of on the world stage, I enrolled in a master's program after a short-term course. The program's evening and weekend classes allowed me to enhance my expertise in public policy without taking a leave of absence from work, and I was drawn to the opportunity to explore ways to foster innovation in the Nagano region. In my master's thesis, I conducted a multifaceted analysis of the effects of national large-scale research and development programs, the characteristics of regions conducive to innovation, inter-organizational relationships, local government structures, and the proximity to residents. Based on this analysis, I made policy recommendations for advancing the creation of innovation-driven communities.

KASAI, Hidekazu (Japan, 2021)
Ministry of Internal Affairs and Communications

Accelerating Digital Transformation in the Local Regions

After some years engaged in development and operation of information systems in a private company, I joined the Ministry of Internal Affairs and Communications. In my daily work there, I felt the need to formulate policy with consideration of changing technologies and the environment, so I applied to GRIPS, where I could learn systematically about STI policy. The appeal of this program is its rich curriculum. Moreover, there are many faculty members who are actively working in government advisory councils, so you can hear about their background in policy. Another point that appeals to me is I was able to have discussions with working professionals from diverse sectors including foreign students—which made me realize once again the importance of thinking from various perspectives. In my master's thesis, I conducted case studies to confirm that one of the key factors is utilization of external human resources to accelerate DX in the local regions.

GRIPS also offers a full-time STI master's course: those who are able to attend full-time during the daytime can earn a master's degree in public policy in one year. Visit the URL below for details.

https://www.grips.ac.jp/jp/education/dom_programs/public/innovation/

DOCTORAL PROGRAM

Graduation requirements

Students are required to take a sufficient number of the courses listed in the curriculum of the Science, Technology and Innovation Policy Program; pass the Qualifying Examination (QE); and successfully complete a dissertation defense.

Research Seminar (Required Courses)	Coursework (Recommended and Elective Courses)	Total 14 credits or more
4 credits	10 credits or more	

*In 2021, the number of required credits was changed from 20 to 14 for students who have completed a master's degree program related to science, technology and innovation policy, and for those who have sufficient knowledge of this field. However, students who have not completed a master's degree program related to science, technology and innovation policy and do not have sufficient knowledge of this field are strongly recommended to acquire approximately 20 credits in this program.

Program duration	3 years
Degree offered	Doctor of Policy Studies Ph.D. in Public Policy

Schedule

The first year of the program is designed to enable students to acquire interdisciplinary knowledge and methodology through coursework mainly in the field of science, technology, and innovation policy, and to develop practical policy-making skills through discussions and group work in courses that offer practical training. From the second year onward, the students focus on their research seminars and cultivate their research ability through research and presentations related to their doctoral dissertations.

Model schedule for completion (in the case of October enrollment)

1st Year				2nd Year				3rd year			
Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer
Coursework (10 credits or more from recommended and elective courses)											
Thematic Research (1 credit)		Thematic Research (1 credit)		Thematic Research (1 credit)		Thematic Research (1 credit)		Thematic Research (1 credit)		Thematic Research (1 credit)	
				★ Qualifying Examination (QE) (conducted around the end of the first year, after completion of 10 credits or more)						★ Dissertation Defense	

Basic Courses

Economics of Innovation / Politics of Innovation / History of Japanese Science, Technology and Innovation Policy / Outline of Energy Policy

Advanced Courses

Comparative Paths of Science, Technology and Innovation Policy / Bibliometrics and Applications / Policy for Higher Education and University-Industry Cooperation / Roles of Intellectual Property Rights in Globalized World / Comparative Analysis of Science, Technology and Innovation Policy: Asian Experiences / Science, Technology and Innovation Policy in Developing Country Context / Energy and Environmental Science & Technology / Energy Data Analysis / Energy Security / Energy Policy in Japan / Advanced Energy Policy

This program aims to develop (a) researchers with superlative knowledge of their field and state-of the art research skills; and (b) highly skilled professionals who can plan, draft, implement, evaluate, and revise science and technology innovation policy and strategies. In order to cultivate capabilities in advanced policy research capabilities and in the policy planning and implementation that are required of such human resources, the curriculum is designed to equip the students with: knowledge of the various necessary disciplines; analytical skills in various fields of social science; higher education teaching skills; and advanced foreign language skills.

Examples of Past Thesis Titles

AY	Theme
2024	• Techno-Economic Analysis of Hydrogen and Ammonia Production in Isolated Microgrids for Sustainable Development • Science, Technology, Innovation in the Gulf: Security, Institutions, and Agents of Change in the GCC
2023	• Towards a Decarbonized and Sustainable Energy System: Multi-Criteria Decision-Making Applications for Evaluation of Energy Efficiency Projects and Hydrogen Production Technologies
2022	• Fostering Further Participation in Agri-Food Business Global Value Chains: A Multiple Case-Study on Intermediary Roles and Capabilities in the Philippine Rice and Mango Industries • Essays on Evaluation of Global Health Policy on Tuberculosis Control
2021	• Renewable Energy Policy and Investment Decision-Making in Electricity Markets • Influence of Systemic Analytical Capacity on Policy-relevant Knowledge Production and Utilization: Case of Science of Science and Innovation Policy
2019	• An Inquiry of Government's Extending the Role of State-owned Enterprises for the Interest of Science, Technology and Innovation Policy : Case Studies from Indonesia
2018	• Promoting Scientodiversity through Research Grants

Alumni Voices

GO, Kevin Christopher Liao (Philippines, 2022)
Ateneo de Manila University

Aiming to Promote STI Policy in Philippines

There is so much that society may gain from a properly built STI environment. However, one reality that many developing countries face is that STI, at times, may take a backseat to other development or industrial policies. Still, many recognize and realize the indispensable impacts that STI policies have on the economy, environment, poverty, and many other SDGs. To help the community of STI advocates and practitioners grow, I am taking what I have learned from my time in GRIPS to the Philippines. I know the STI culture cannot be built by simply applying my lessons in the public arena. Therefore, I started to teach and stimulate the minds of students from the Ateneo de Manila University as a faculty in its Development Studies Program. Nonetheless, my work for STI in the Philippines does not end there. I am continuing to share my learnings, especially from my dissertation, with concerned government offices and sectors in the hope that I may contribute to the development of my country.

SHIMADA, Yoshiaki (Japan, 2018)
Japan Science and Technology Agency

Pursuing policy research from awareness of problems arising from practical operations

In the course of working at the National Museum of Emerging Science and Innovation and at a funding agency, I became interested in the relationship between science and society, so I decided to go to university using my agency' s domestic study abroad system. Among the offerings of various universities, GRIPS' STI program was attractive because it encompassed a wide range of fields, including development economics, public policy, and diplomacy. By taking STI program courses, I was able to get a sense of what data is available and who is analyzing academic publications and academic institutions—all of which has been very helpful in my current work. In my doctoral research I focused on the diversity of scientific research and analyzed the effect of the nature and scale of funding programs on diversity of research. I reported that research in my doctoral thesis.

SHORT-TERM TRAINING and SEMINAR

In addition to master's and doctoral courses, the Science, Technology and Innovation Policy Program offers a wide range of opportunities to learn from experts from Japan and overseas in short-term programs, summer camps and seminars.

Short-Term STI Policy Management Training Program

Launched in 2020, this program enables central and local government officials, university administrators, and other individuals involved in STI Policy and Management to take classes on weekends and during the summer. The credits earned in this program can be carried over to the STI Program if the attendee is admitted to GRIPS at a later date.

This is a domestic program taught in Japanese.

3 subjects (6 credits)

科学技術イノベーション政策概論 ／ 公的機関からのイノベーション創出 ／ 科学技術イノベーション政策立案演習

Schedule (for AY2025)

Spring Term Session

	1st period (9:00-10:30)	2nd period (10:40-12:20)	3th period (13:20-14:50)	4th period (15:00-16:30)	5th period (16:40-18:10)
June 7-July 19, 2025 Every Saturday	公的機関からのイノベーション創出		科学技術イノベーション政策概論		———

Summer Term

	1st period (9:00-10:30)	2nd period (10:40-12:20)	3th period (13:20-14:50)	4th period (15:00-16:30)	5th period (16:40-18:10)
August 2, 3 & 9, 2025 3day Intensive	科学技術イノベーション政策立案演習				

Tuition and Fees

● Application Fee: 9,800 yen ● Admission and Tuition Fee: 114,600 yen

Application Period

Once a year, in December and January, the program recruits students for the following academic year.

Summer Camp

Summer Camp is held annually at one of the six member universities with year-specific topics. The member universities are the University of Tokyo, Hitotsubashi University, Kyoto University, Osaka University, Kyushu University and GRIPS (which conducts the SciREX Program). The SciREX Program is a Japanese government program focused on research and education for the formulation of evidence-based science policy. SciREX stands for REdesigning Science, Technology and Innovation Policy. Summer Camp is a program several days in length, offered by GRIPS in collaboration with MEXT, NISTEP, and RISTEX. During the program, students with different specialties work in groups and do mock policy making.

GiST Seminar

Invited experts from institutions around the world, including the OECD, the London School of Economics, UNU-MERIT, and the National University of Singapore, speak on the latest trends in research and practice.

ACADEMIC RESOURCES & FACILITIES

GRIPS' faculty administrators and program-specific coordinators, who are in charge of the operation and administration of our diverse program, work together to provide detailed and attentive support to the participants.

International Environment

Around 20% of the faculty and 70% of students are recruited from outside Japan. Our vibrant, diverse student body consists of almost 400 members hailing from 63 countries and regions – all with the ambition to advance good governance across the globe or contribute to policy related research.

Library

The GRIPS Library offers an extensive collections of publications in the field of policy studies from around the world. The collections contains over 200,000 volumes, including reference books, statistical collections, working papers, and government documents. The Library' s large collections of periodicals includes more than 17,000 journals, many of which are available online. To serve our academic community, the Library staff is well trained to respond to research-related requests.

Institutional Repository

The Institutional Repository at GRIPS provides open access to outcomes, mainly doctoral dissertations and discussion papers, created through education and research activities at GRIPS. Students in the program can post their outcomes to "SciREX Working Papers" after consulting with their advisors.

Center for Professional Communication

The mission of the Center for Professional Communication (CPC) is to support GRIPS students, faculty, and staff in developing the effective professional communication skills and competencies needed to communicate and interact productively in an environment of multiple stakeholders. CPC offers a range of instruction, services, and support in fundamental areas of professional communication in English and Japanese.

Student Rooms

All students, Japanese and international, are provided with a study space in Study Rooms. GRIPS also has a prayer space in the Student Lounge.

Admission Schedule

For the latest information and full details, please see the following website:
https://www.grips.ac.jp/en/admissions/index/

Doctoral Courses

	1st examination	2nd examination
Application deadline	In late November	Middle of May
1st screening result	Within two months after the application deadline	
2nd screening (interview)	The details of the 2nd screening will be provided only to the applicants who pass the 1st screening.	
2nd screening result	Within two months after the 2nd screening	
Enrollment	April or October	October

*International applicants must apply for the 1st examination; their enrollment is in October.
*2nd examination is only for applicants residing in Japan with N1 Certificate and applicants who have been selected by JICA as candidates for JICA's 'GX Human Resource Development Program.

Scholarships

Scholarship allocated through GRIPS: Japanese Government (MEXT) Scholarship
Scholarship open to application through the sponsoring organizations: JICA Scholarship (SDGs Global Leader)

https://www.grips.ac.jp/en/admissions/expenses/

Tuition and Fees for self-financed applicants

● Application fee: 30,000 yen ● Admission fee: 282,000 yen ● Tuition (yearly): 642,960 yen (effective April, 2022)

Financial Aid for Doctoral Students

The following options are available (if conditions are met):

● Tuition Exemption ● Teaching Assistants (TA) ● Research Assistants (RA) ● Research Support Grant



Photo: Masao Nishikawa

Admissions and scholarships

Admissions Office
7-22-1 Roppongi, Minato-ku, Tokyo 106-8677
E-mail: admissions@grips.ac.jp

https://www.grips.ac.jp/en/admissions/index/

Accommodation and campus life support

Student Office
7-22-1 Roppongi, Minato-ku, Tokyo 106-8677
E-mail: studentoffice@grips.ac.jp

https://www.grips.ac.jp/en/education/students/

Science, Technology and Innovation Policy Program

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