



L-INSIGHT

Program for the Development of
Next-generation Leading Scientists with
Global Insight

The L-INSIGHT logo expresses the possibilities and the future that lies ahead through the wide application of various insights toward the world. The circles symbolize researchers taking wing into the world as well as the explosive expansion of their insights.

L-INSIGHT

LEADING INSTITUTE | KYOTO UNIVERSITY



Program for the Development of Next-generation
Leading Scientists with Global **Insight** (L-INSIGHT)

“Strategic Professional Development Program for Young Researchers”,
Ministry of Education, Culture, Sports,
Science and Technology-Japan

Leading Institute



Partners (in random order)



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L-INSIGHT

The Program for the Development of Next-generation Leading Scientists with Global Insight (L-INSIGHT) aims to develop, validate, and spread programs to train the next-generation of world-class researchers with global insight who can spearhead new paths to the future.



OUR AIMS

By 2030, researchers of the L-INSIGHT will:

- Play leading international roles in cutting-edge research
- Engage in frontier research and new disciplines
- Bring about innovation in industries

WHAT IS "GLOBAL INSIGHT"?

L-INSIGHT defines global insight as the ability to span various boundaries – such as time, geography, academic disciplines, sectors, and cultural spheres – with broad overviews, astute perceptions, and foresight.

A program that acts as a strong driving force toward the growth of early career researchers striving to be leading scientists through the provision of as much time and opportunities as possible for cogitation and deliberation

In November 2019, Kyoto University's Program for the Development of Next-generation Leading Scientists with Global Insight (L-INSIGHT) was adopted as a Strategic Professional Development Program for Young Researchers, a Project for the Development of Human Resources in Science and Technology FY2019 under the Ministry of Education, Culture, Sports, Science and Technology, Japan.

Core Program Group
Understanding and fostering global insight (mindsets, skill sets) through dialogues with mentors and next-generation researchers in other field.

Practical Program Group
Fellows utilize and develop their rich global insight, thereby boosting new collaborative endeavors—with partners overseas or in industry—related to their research topics

Types of Global Insight Acquired through Two Program Groups
(SELF / INTERPERSONAL / SYSTEM) × (MINDSETS / SKILL SETS)

SELF

INTERPERSONAL

SYSTEM(GLOBAL/SOCIETY)

Financial Support
Program activation support: covers costs of holding international conferences, domestic and international travel, open access publishing in international journals.

Professional Development Opportunities in Diverse Real-World Spaces
Crossing diverse international, interdisciplinary, and industry perspectives (as horizontal axes) with fellows' creativity and expertise (as vertical axes).

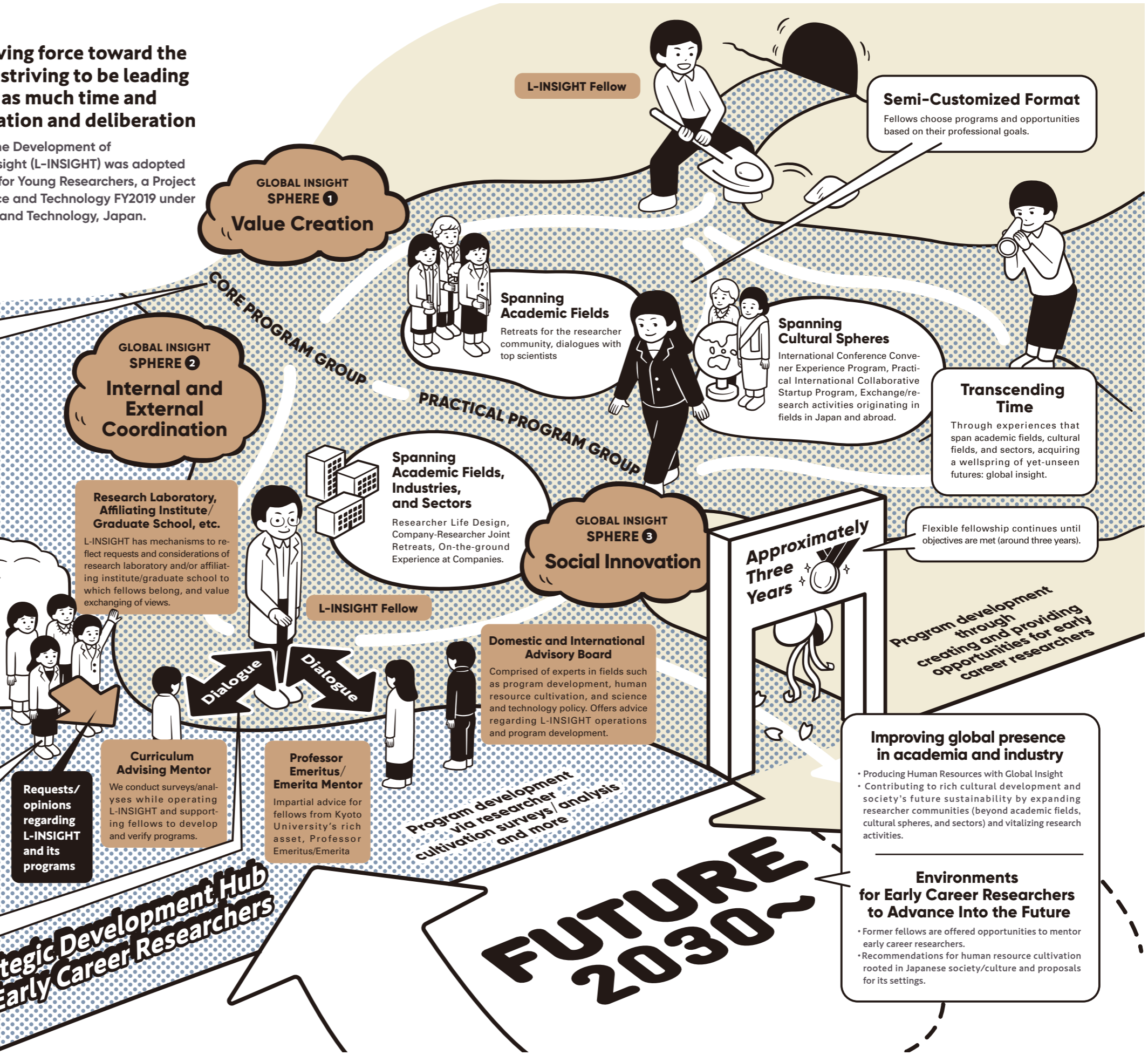
International Collaboration Approach

Industry Collaboration Approach

Early Career Researcher Community Development Plan
Community creation via synergy with researcher cultivation at Kyoto University → Interactions with early career researchers at partner institutions (universities, companies) → Gaining program participants throughout Japan.

Self-Assessment Through Dialogue
Making clear objectives and efforts towards objectives through dialogues with professor emeritus/emerita mentors and curriculum advising mentors.

Strategic Development Hub for Early Career Researchers



L-INSIGHT Fellow

Semi-Customized Format
Fellows choose programs and opportunities based on their professional goals.

Transcending Time
Through experiences that span academic fields, cultural fields, and sectors, acquiring a wellspring of yet-unseen futures: global insight.

Flexible fellowship continues until objectives are met (around three years).

Improving global presence in academia and industry

- Producing Human Resources with Global Insight
- Contributing to rich cultural development and society's future sustainability by expanding researcher communities (beyond academic fields, cultural spheres, and sectors) and vitalizing research activities.

Environments for Early Career Researchers to Advance Into the Future

- Former fellows are offered opportunities to mentor early career researchers.
- Recommendations for human resource cultivation rooted in Japanese society/culture and proposals for its settings.

About L-INSIGHT

Background and Expectations

In November 2019, Kyoto University's Program for the Development of Next-generation Leading Scientists with Global Insight (L-INSIGHT) was adopted as a Strategic Professional Development Program for Young Researchers, a Project for the Development of Human Resources in Science and Technology FY2019 under the Ministry of Education, Culture, Sports, Science and Technology, Japan.

In order to operate the L-INSIGHT program, the Strategic Development Hub for Early Career Researchers was established in the Center for Enhancing Next-generation Research (E-NER), the Center for the Promotion of Interdisciplinary Education and Research (C-PIER), Kyoto University.

Early career researchers (ECRs) currently face inherent difficulties in acquiring the practical training and experience across disciplinary, geographical, and industry-academia boundaries needed to become next-generation leading scientists. Short-term exposure to different disciplines and experiences of cultural exchanges rarely facilitates practical accomplishments in interdisciplinary or frontier research. L-INSIGHT was therefore created to overcome these inadequacies in researcher training programs.

L-INSIGHT aims to develop and implement programs to train scientists with Global Insight who can become world-class researchers by 2030 and beyond, and to create and spread integrated and systematized training programs through continued improvements.

Here, Global Insight refers to the ability to span various boundaries – such as time, geography, academic disciplines, sectors, and cultural spheres – with broad overviews, astute perceptions, and foresight.

Against the backdrop of ever-increasing globalization, international competition in the academic and industrial landscapes is escalating and changing.

More than ever, there is a need for Japan to develop world-class ECRs with Global Insight who can play leading roles in next-generation research. These scientists will be entrusted by society with the role and mission of advancing Japan's academic research in the future and raising its international standing.

We anticipate that the achievements of ECRs supported by L-INSIGHT will increase the presence of academia and industries, and subsequently aid the rich cultural development and sustainability of future societies.

Developing L-INSIGHT

L-INSIGHT is operated in collaboration with educators, researchers and graduate schools possessing extensive experience in international human resource development. The program will investigate best practice examples of ECR training programs from Japan and overseas, and apply existing initiatives from Kyoto University. By incorporating these efforts, L-INSIGHT will systematically develop programs that traverse international and industry-academia borders.

Furthermore, core ECRs supported by L-INSIGHT (referred to as "L-INSIGHT Fellows") will be provided with opportunities to clearly identify their own goals and to connect with researchers in partnering industry and overseas institutes, through which L-INSIGHT Fellows will be able to foster, enhance, and expand the skill sets and mindsets needed to achieve their goals.

For this, L-INSIGHT will establish Global Insight competencies, build a method to validate the program, and promote active participation of ECRs from Kyoto University, other education/research institutes, as well as industries/companies.

The knowledge gained in this program will then be used for its expansion in the Kansai region and Western Japan, and ultimately throughout the nation.

In L-INSIGHT, we will work to develop and enhance the skill sets as well as to foster and expand mindsets of L-INSIGHT Fellows crucial to the development of research capabilities that form the foundation of competitiveness and excellence.

For example, we will provide opportunities for Fellows to interact with researchers from overseas partner institutes and business enterprises to encourage the initiation of joint research. To allow Fellows to make the most of these opportunities, the program will support the development and enhancement of skill sets such as academic writing skills, abilities to communicate results, management skills, leadership qualities, and the ability to acquire external funding. In addition, we will aid the fostering and expansion of mindsets such as a co-creation mentality, future-focused thinking, challenging spirit, and internationality.

Global Insight Spheres and Components

"Global Insight" comprises mindsets and skill sets applied in three spheres critical for leading next-generation researchers. Mindsets and skill sets are used across L-INSIGHT as tools. They come in three types: self, interpersonal, and system (global/society).

Three Spheres

Producing New Values Sphere 1 Value Creation

Creating new values, elucidating mechanisms, and acquiring new knowledge as a researcher.

Nourishing Nascent Values Sphere 2 Internal and External Coordination

Accommodation and resolution during conflicts that arise when developing values, applying elucidated mechanisms, and spreading acquired knowledge.

Spreading Values in Society and the World Sphere 3 Social Innovation

Applying, spreading, and enhancing the fruits of research in society.

Mindsets and Skill Sets: Three Types

SELF

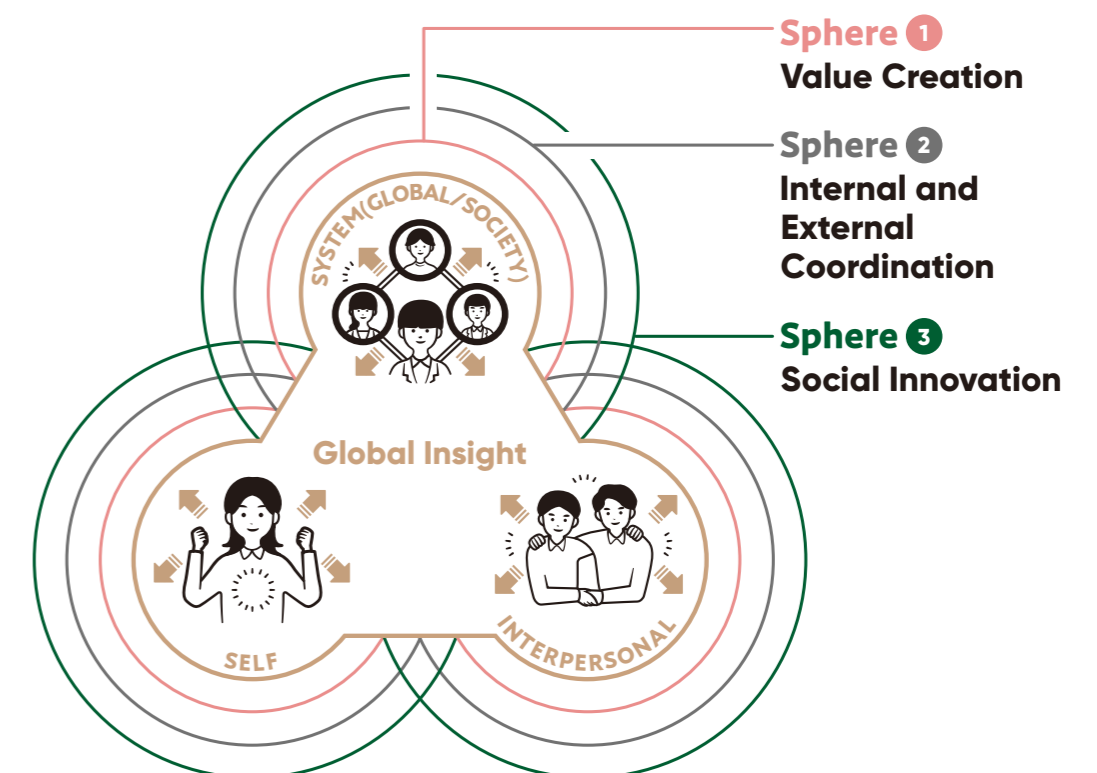
The mindsets and skill sets to foster/re-energize one's mind and cultivate/strengthen one's skills.

INTERPERSONAL

Makes an effort in improving interpersonal skills for one-on-one situation and in small groups.

SYSTEM

Tries to demonstrate readiness, spirit, scientific expertise and research performance that are self-obtained so as to implement them effectively as a system in a larger community or complicated society.



Minato Nagahiro
President, Kyoto University



As Society 5.0 and Industry 4.0 continue to drive extensive changes in social and industrial structures, it is imperative that Japan endeavors to promote scientific and technological innovation to ensure the nation’s sustainable development. In order to propel future innovations, it is vital to continuously foster exceptional researchers. Since 2014, Kyoto University has been collaborating with Osaka University and Kobe University to establish a consortium for the development of human resources, and constructed a training system for early-career researchers. Now, we have built upon the accomplishments of that consortium to create a new program to develop the next generation of leading scientists, and launched a project to institute a systematic training support system. This project aims to foster the development of globally competitive personnel who transcend industrial and academic boundaries: individuals who can excel in international academia while also engaging in creative research and development in the industrial world. We plan to integrate and systematize the program, ultimately expanding it nationwide.

Tokitoh Norihiro
Executive Vice-President,
Kyoto University



This program, which was adopted in November 2019, aims to promote scientific and technological innovation in Japan, and elevate the nation’s research capabilities by strategically developing outstanding researchers. The achievement of these goals requires the establishment of a program to train individuals who, as leading scientists, can transcend the boundaries between industry and academia, as well as the creation of a systematic training support system. The program will enroll motivated and talented early-career researchers with advanced expertise who aim to become internationally competitive principal investigators (PIs), and will train them as next-generation leading scientists with global insight who can forge new paths to the future. By applying the early-career researcher

development framework created for The Keihanshin Consortium for Fostering the Next Generation of Global Leaders in Research (K-CONNEX), this program will not only develop and strengthen the skill set needed by early-career researchers, but will also adopt an integrated approach to foster and stimulate their mindset. The program will contribute to the expansion of Japan’s research and development capabilities and international presence in scientific, technological, and academic fields through the cultivation of leading scientists.

Yoshikawa Minako “Jen”
Director, The Strategic Development Hub for
Early Career Researchers



The Strategic Development Hub for Early Career Researchers was established within the Center for Enhancing Next-Generation Research. It manages the Program for the Development of Next-generation Leading Scientists with Global Insight (L-INSIGHT), and is composed of academic staff who develop and implement a variety of sub programs, university research administrators (URAs), and others. With the aim of transforming early career researchers into next-generation world-class scientists, L-INSIGHT emphasizes the importance of cultivating global insight to open new paths to the future. This principle is represented by the program’s name: L-INSIGHT, which means “acquiring insight” in Japanese. The aims of L-INSIGHT overlap with those of The Keihanshin Consortium for Fostering the Next Generation of Global Leaders in Research (K-CONNEX), of which Kyoto University is a leading member. As L follows K in the alphabet, the naming of L-INSIGHT is indicative of a progression in our efforts to develop, operate, and promote even more advanced programs. The mission of L-INSIGHT is to greatly accelerate the development of early career researchers as the next-generation of leading scientists, while providing them with experience of international and industrial-academic collaboration. By providing rich opportunities for growth experiences across disciplinary, geographic, and industrial-academic boundaries, L-INSIGHT provides early career researchers with the time and space needed to acquire the skill sets and mindsets essential to attaining their personal goals. In order to effectively and strategically boost the development of early career researchers, the program design is based not only on the advice of industry, government, and academic experts, but also prioritizes input from the early career researchers themselves.

SEVEN POLICIES

L-INSIGHT Policies

L-INSIGHT aims to develop, validate, and spread programs to train next-generation leading scientists with Global Insight who can spearhead new paths to the future.

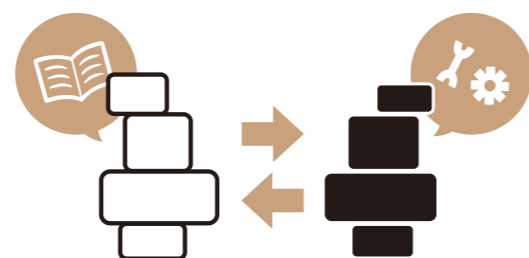
We will look for motivated and talented ECRs (L-INSIGHT Fellows) who aspire to become internationally competitive principal investigators (PIs). We welcome such individuals who take pride in their role as next-generation scientists and produce research achievements that demonstrate exceptional creativity and advanced expertise.



4 Co-creation of the program through dialogue

L-INSIGHT will be developed and improved by incorporating the Fellows perspectives and advice from internal and external experts.

For example, the establishment of the Global Insight competencies will actively incorporate the opinions of the ECRs and experts from Kyoto University and beyond. In this way, the programs will be co-created through dialogue.



1 Interplay between core fundamentals and practical applications

The L-INSIGHT program will be designed to enable mutual interplay between core fundamentals and practical applications during the Core and Practical Stages in order to support the acquisition and enhancement of Global Insight by L-INSIGHT Fellows.

Even after Fellows advance from the Core Program stage to the Practical Program stage, the program will retain a degree of flexibility that allows additional training for those who wish to reinforce their understanding of the competencies.



5 Flexible cooperation with international institutes

L-INSIGHT is working in collaboration with Kyoto University's overseas centers* and overseas partner institutes to provide Fellows opportunities to interact with other ECRs and distinguished researchers based in other countries.

This will facilitate the initiation of joint research and provide opportunities for Fellows to gain experience as international conference conveners.

* North America (Washington DC, US), Europe (Heidelberg, Germany), and ASEAN (Bangkok, Thailand)



2 Semi-customized program approach

L-INSIGHT does not require Fellows to undergo all of the training programs.

Instead, we adopt a semi-customized program approach in which each Fellow will strategically select components from the suite of available programs based on his/her individual targets for Global Insight competencies and self-evaluations.



6 Application of industry's practical capabilities

L-INSIGHT places a strong emphasis on directly incorporating advice from industrial perspectives.

The program will provide numerous opportunities for planning joint research between Fellows and corporate researchers, thereby building and expanding a network that connects ECRs in industry and academia.



3 Evaluations facilitated by mentors' support

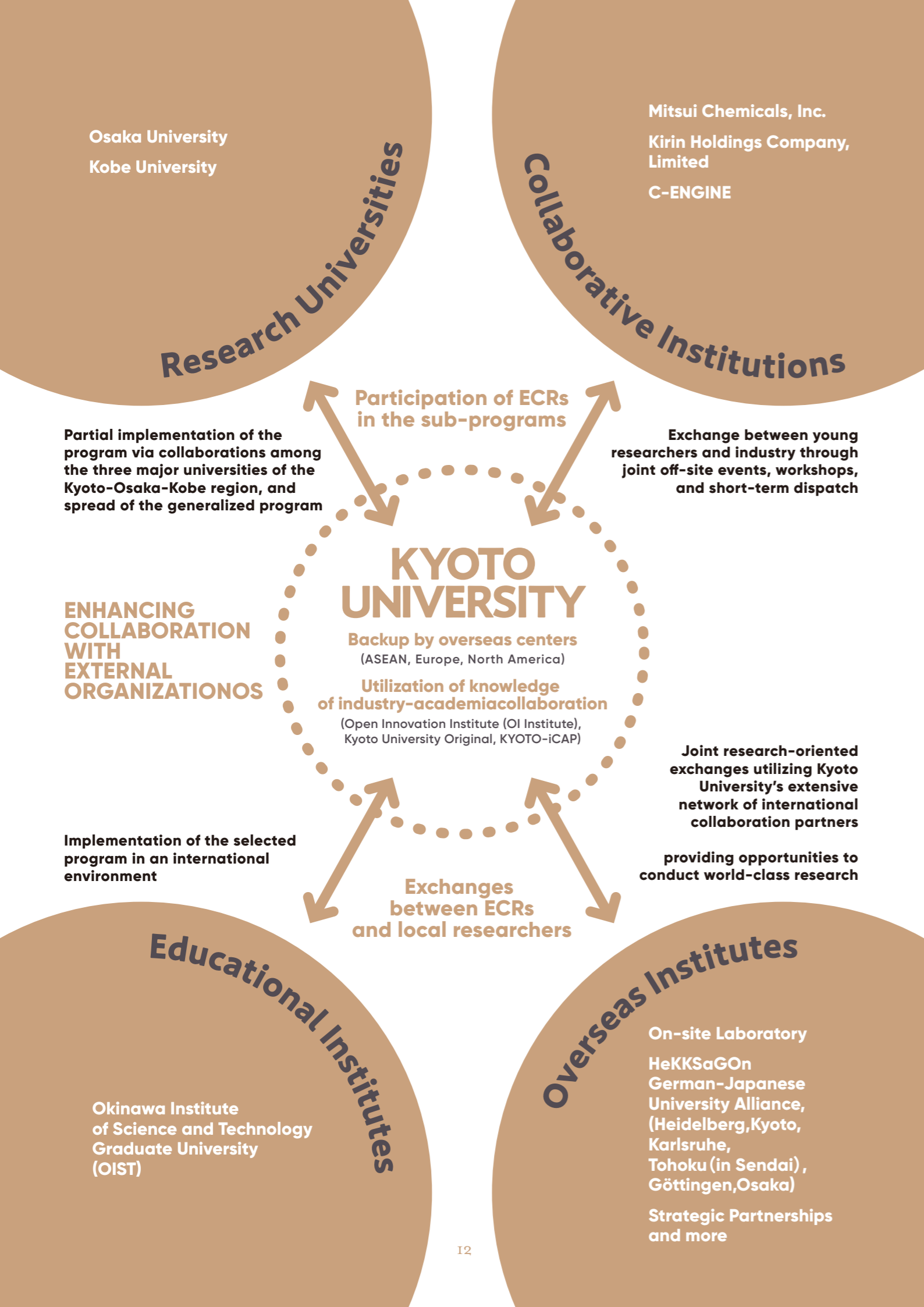
Each L-INSIGHT Fellow will be assigned a Kyoto University Professor Emeritus/Emerita with close expertise as a Mentor.

Each Mentor will support the assigned Fellow in the self-assessment of his/her goal attainment with consideration to the required skill set and mindset.

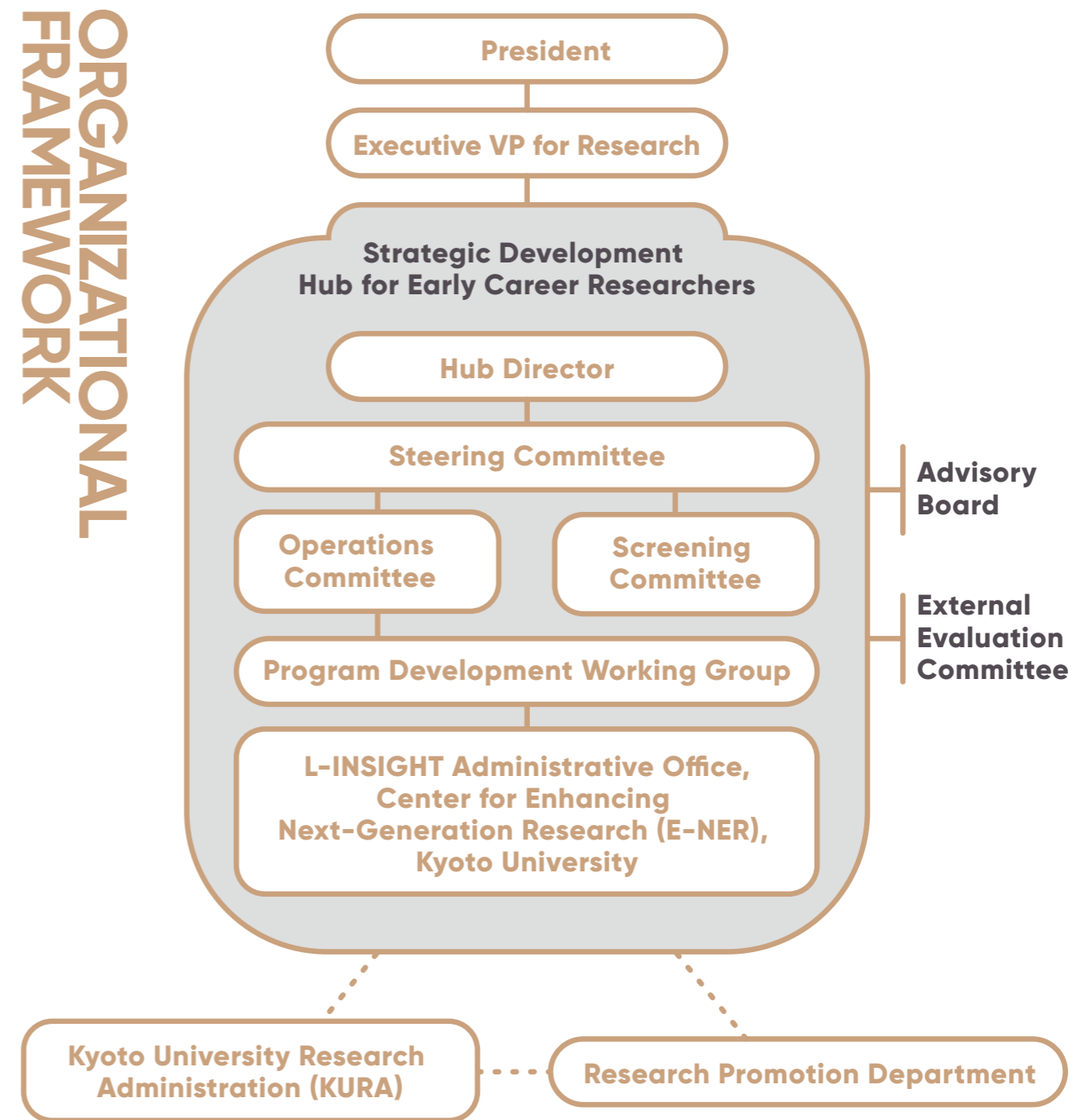


7 Financial support that encourages active participation

To encourage "autonomous participation by financial support", we provide "Program Activation Support" for each L-INSIGHT Fellow who actively participates in our core and practical programs. The support includes travel expenses to attend the programs and publication charges to disseminate the results of one's research work.



ORGANIZATIONAL FRAMEWORK



Curriculum Advising Mentor

E-NER faculty also function as Curriculum Advising Mentors, and help fellows strategically choose programs based on their performance objectives for global insight competencies.
Program-Specific Professor/Program Manager: Yoshikawa Minako "Jen"
Program-Specific Associate Professor: Nakano Asa

Professor Emeritus/Emerita Mentor

With professor emeritus/emmerita mentors, fellows discuss their progress towards their global insight competencies (approx. 2x/year). Fellows can draw from these discussions during self-evaluations and when reworking objectives.

Advisory Board

Experts from Japan and abroad periodically offer advice regarding L-INSIGHT operations.

NEW FELLOWS IN 2020

Arai Yasuyuki

Isobe Masanori

Okamura Ryosuke

Katsura Yukako

Gomi Ryota

Takahashi Yusuke

Tanaka Tomohiro

Nakano Genta

Numata Kenji

Fujii Toshihiro

in Japanese syllabary order

Arai Yasuyuki

Assistant Professor, Center for Research and Application of Cellular Therapy, Department of Clinical Laboratory Medicine, Kyoto University Hospital



Graduate of the Medical Science Department in Kyoto University's Faculty of Medicine (2006). After clinical training at Kitano Hospital (Tazuke Kofukai Medical Research Institute) and Kurashiki Central Hospital, graduated from the doctoral course of Kyoto University's Graduate School of Medicine (hematology, oncology). Subsequently engaged in immunology research for three years as a postdoctoral fellow at the National Institutes of Health (USA). After returning to Japan and working as a clinical fellow at Kyoto University Hospital's Hematology and Oncology Department, in 2018 became an assistant professor at the hospital's Departments of Transfusion Medicine and Cell Therapy (today, Center for Research and Application of Cellular Therapy, Department of Clinical Laboratory). Works on the development and application of cell therapy, including hematopoietic stem cell transplantation.

Katsura Yukako

Assistant Professor, Cellular Biology Section, Primate Research Institute, Kyoto University



Graduate of the five-year doctoral course of the Department of Evolutionary Studies of Biosystems in School of Advanced Sciences at the Graduate University for Advanced Studies (SOKENDAI). Katsura's dissertation was on the evolution of mammalian sex chromosomes. Worked as JSPS overseas research fellowship postdoctoral researcher at UC Berkeley, Pennsylvania State University. After serving as an assistant professor in Nihon University School of Medicine, assumed current position in 2019. Specializes in phylogenetics, genome analysis and other areas in evolutionary genetics.

Isobe Masanori

Assistant Professor, Department of Psychiatry, Kyoto University Hospital



Graduate of the Medical Science Department in Kyoto University's Faculty of Medicine. After clinical training, became the psychiatrist in charge of child and adolescent outpatient services. Ph.D. (Medicine; Kyoto University). After acquiring doctoral degree, engaged in clinical research on ADHD and addictive disorders as a specially appointed researcher in Behavioural and Clinical Neuroscience Institute and Department of Psychiatry at the University of Cambridge. Upon returning to Japan, became a program-specific assistant professor at Kyoto University Hospital's Department of Psychiatry and was involved in launching the Center for Child and Adolescent Psychiatry. Isobe does clinical work and research on childhood/adolescence and eating disorders. Assumed current position in November 2019.

Gomi Ryota

Assistant Professor, Department of Environmental Engineering, Graduate School of Engineering, Kyoto University



In September 2016, graduated from the Department of Environmental Engineering's doctoral course in Kyoto University's Graduate School of Engineering. Subsequently worked as an assistant professor in the Environmental Systems Engineering Environmental Risk Analysis Laboratory (Department of Environmental Engineering). Carried out research on genomic analysis of *Klebsiella pneumoniae* (bacteria that live in river water) at the University of Melbourne from August to December 2018 and at Monash University from January to August 2019. Current research topic is drug-resistant Enterobacteriaceae genome analysis.

Okamura Ryosuke

Program-specific Assistant Professor, Department of Gastrointestinal Surgery, Kyoto University Hospital



Nara Medical University Faculty of Medicine graduate (2006). Initial clinical training at Nara Medical University Hospital. After working at Hyogo Prefectural Amagasaki Hospital (today, Hyogo Prefectural Amagasaki General Medical Center) as a general surgeon from 2008 to 2013, studied clinical research at Kyoto University's Graduate School of Medicine (Department of Surgery). Starting in 2017, for three years carried out research on personalized cancer therapy that uses molecular profiling at the University of California San Diego Moores Cancer Center. Assumed current position in April 2020. While working as a clinical surgeon, also researches cancer treatments. Ph.D. (Medicine; Kyoto University, 2018).

Takahashi Yusuke

Associate Professor, Division of Cognitive Psychology in Education, Graduate School of Education, Kyoto University



Ph.D. (Department of Multi-Disciplinary Sciences, Graduate School of Arts and Sciences, The University of Tokyo). After fixed-term posts at Kyoto University (Center for the Promotion of Excellence in Higher Education, Collaborative Graduate Program in Design, and The Hakubi Center for Advanced Research), joined current position in April 2020. Specializes in educational psychology, development psychology, and behavioral genetics. Engages in research that elucidates developmental aspects and underlying mechanisms of individual differences in human psychological characteristics and psychiatric symptoms, as well as that seeks a deeper understanding the complex interactions between genes and environments therein.

Tanaka Tomohiro

Assistant Professor, Department of Natural Resources, Hall of Global Environmental Research, Graduate School of Environmental Studies, Kyoto University



Graduate of the master's and doctoral courses of the Department of Civil and Earth Resources Engineering in Kyoto University's Graduate School of Engineering. JSPS DC2 research fellow (April 2016), JSPS PD research fellow (October 2016). Assumed current post in March 2017. Research includes numerical modelling of flood-inundation during heavy rainfall and its quantitative flood risk assessment, as well as, recently, nation-scale impact assessment of climate change on extreme floods across Japan and economic model-based assessment of climate change adaptation measures. Received awards include Japan Society of Hydrology and Water Resources Best Paper Award (2014), Japan Society of Civil Engineers Best Paper Award (2020), Japan Society of Civil Engineers Hydrology Young Author Excellent Paper Award (2020).

Numata Kenji

Professor, Department of Material Chemistry, Graduate School of Engineering, Kyoto University



Graduate of the Department of Polymer Chemistry in Tokyo Institute of Technology (2003). Doctor of Engineering from Tokyo Institute of Technology (2007). JSPS Overseas Research Fellow at Tufts University (USA, 2008), Team Leader (PI) of RIKEN (2012), Cabinet Office ImPACT project leader (2014), JST ERATO research director (2016). Assumed the current post in 2020. His research topic is the synthesis and degradation of biopolymers, especially, structural proteins. Major awards include the American Chemical Society's Macro Letters/ Biomacromolecules/Macromolecules Young Investigator Award (2020) and the MEXT Minister Early Career Scientist Award (2018).

Nakano Genta

Assistant Professor, Research Center for Disaster Reduction Systems, Disaster Prevention Research Institute, Kyoto University



Ph.D. (Informatics; Department of Social Informatics, Graduate School of Informatics, Kyoto University). Specializes in action research on disaster risk reduction education and community-based disaster risk management. Primary fields are Kochi Prefecture in Japan, Nepal, and Mexico. For approximately three years, worked on community-based disaster risk management and disaster risk reduction policy in El Salvador as a JICA project formulation advisor as well as a Japan Overseas Cooperation Volunteers. Assumed current post in December 2019. Aiming to have community members take an active role in disaster risk reduction, engages in practice-based research in collaboration with local schools and governments.

Fujii Toshihiro

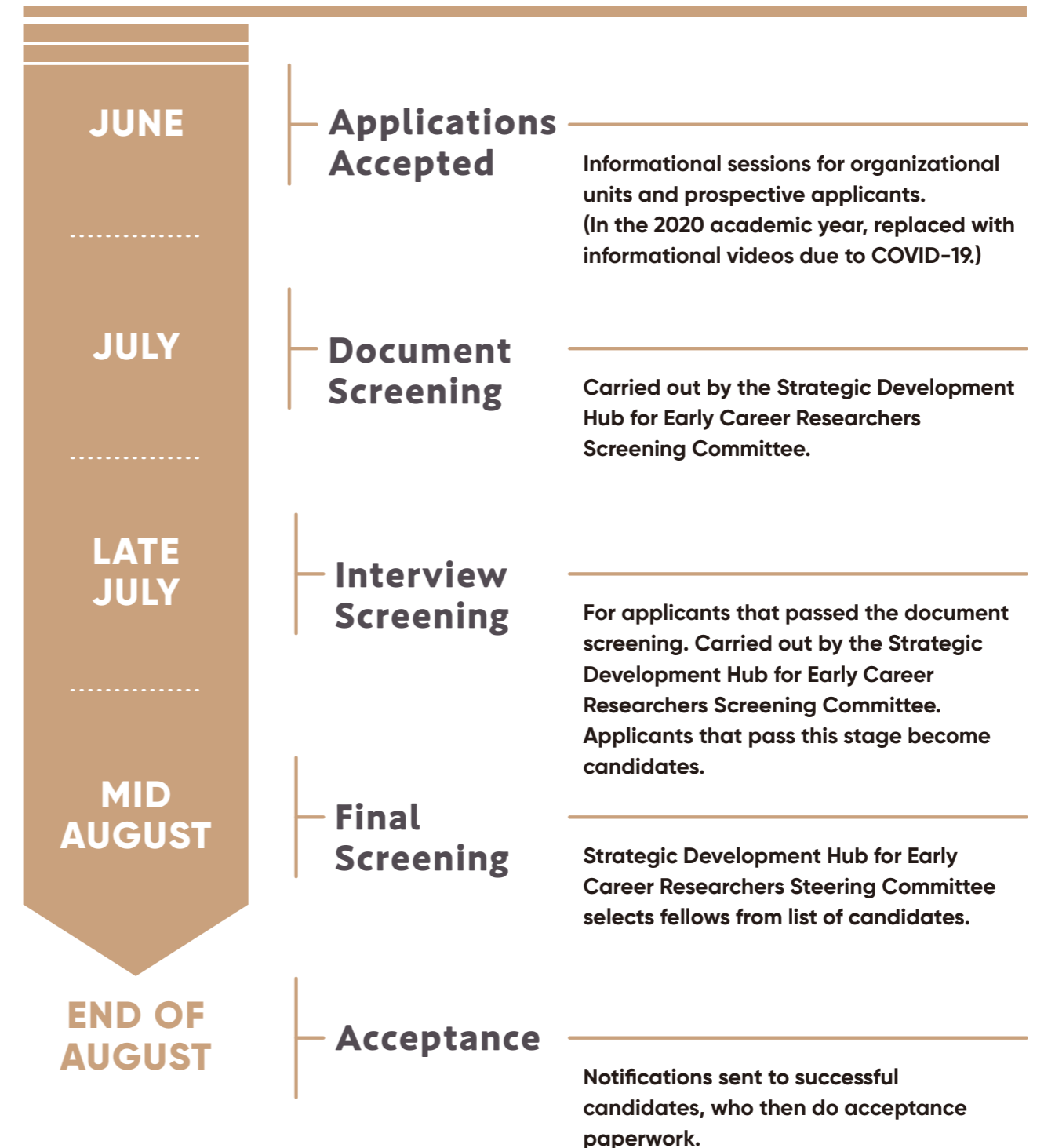
Program-specific Assistant Professor/Collaborative Assistant Professor, Hakubi Center for Advanced Research/Graduate School of Science, Kyoto University



Received Ph.D. in Science from Graduate School of Science, Osaka City University. Astrophysicist. Hakubi Researcher. After receiving Ph.D., worked at Kavli Institute for Cosmological Physics (KICP), University of Chicago and Institute for Cosmic Ray Research (ICRR), University of Tokyo, appointed current position in December 2018. Specializes in the observation of ultra-high-energy cosmic rays. Engages in joint research with the Telescope Array Experiment and Pierre Auger Observatory, being the highest sensitivities to ultra-high-energy cosmic rays in the both northern and southern hemispheres. In the next-generation cosmic ray observatory dubbed FAST Project, leads new cosmic-ray telescope development as principal investigator. Received awards include JSPS Research Fellowships for Young Scientists (DC2 and PD), JSPS Postdoctoral Fellowship for Research Abroad, Young Scientist Award of the Physical Society of Japan (2018) and Cosmic Ray Physics Award of Cosmic ray Researchers Congress (2018)

L-INSIGHT Fellows Application and Acceptance Process

L-INSIGHT's screening committee fairly and impartially screens applicants from both academic perspectives and a holistic perspective. The latter includes personal assessments, namely, whether applicants have the qualities of next-generation leaders.



The above schedule is approximate and subject to change.

For details, please refer to L-INSIGHT's homepage: <http://www.l-insight.rp.kyoto-u.ac.jp/en/>