

Application for Academy Center Certification

World Premier International Research Center Initiative (WPI)

Host Institution	University of Tsukuba
Research Center	International Institute for Integrative Sleep Medicine (IIIS)
Host Institution Head	NAGATA Kyosuke
Center Director	YANAGISAWA Masashi
Administrative Director	KIMURA Mayumi

Please prepare this application based on the content of your Center's progress report and the progress plan you submitted for the Center's final evaluation. Summarize the Center's future plans with regard to the following 8 items **within five A-4 pages**. (Also fill out the appendices at the end of this form.)

1. Overall Image of Your Center

* Describe the Center's overall image including its identity.

Sleep is a behavior that everyone experiences daily and takes up as much as one third of one's entire lifetime. Although desiring to sleep is a fundamental instinct, its regulatory mechanism as well as *raison d'être* remain yet fully uncovered. Sound sleep is essential to maintain physical and mental health. Accumulation of sleep insufficiency, so-called sleep debt, increases risks for depression, obesity, dementia and even cancer. Sufficient sleep is requisite also for efficient daytime performances. A lack of sleep in Japanese working population is the worst among advanced nations, costing the economy up to \$138 billion a year. Such a "sleep underdeveloped country" definitely needs a world-class research institute for sleep medicine. **International Institute for Integrative Sleep Medicine (IIIS)** of University of Tsukuba has served the role, and the scientific significance is well recognized both inside and outside of Japan.

To accomplish world-leading research on sleep, IIIS has given continuous challenges of solving the mystery of sleep with cutting-edge technologies and committed our research outcomes to social implementation. During the past 10 years since the Center launching, IIIS led by Center Director Yanagisawa has accumulated an official reputation and by now is globally acknowledged as one of the

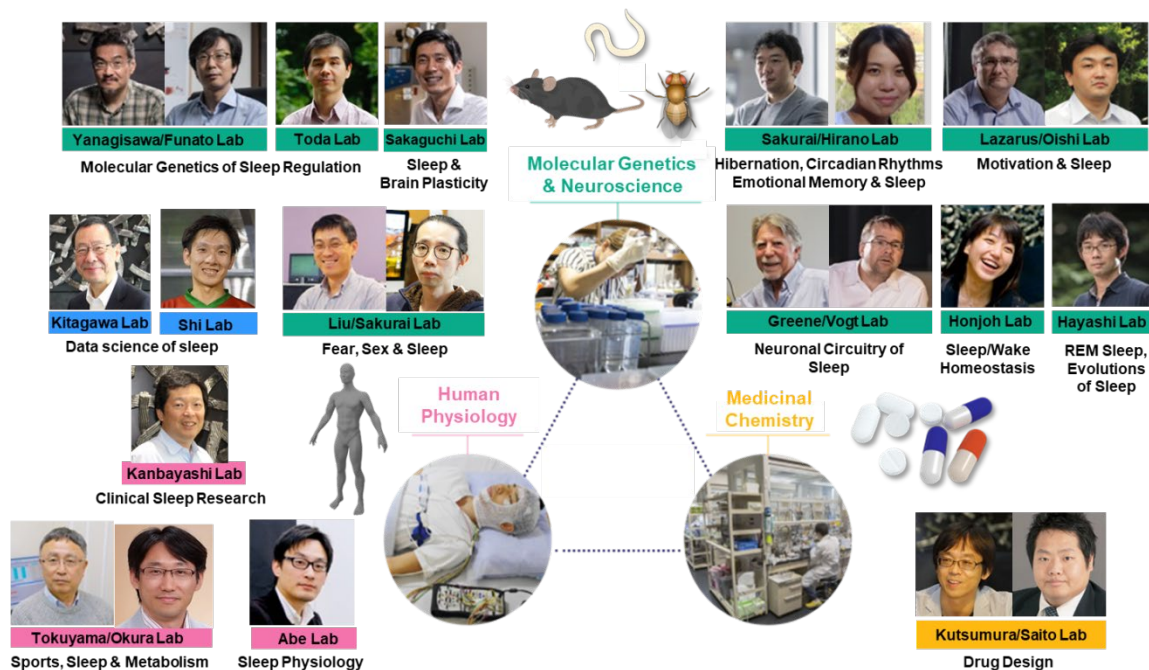


Fig. 1. Core group principal investigators and the scientific structure at IIIS beyond FY2022.

leading sleep research institutes. One of the approaches the Director made for the success was aggressive recruitment of principal investigators (PI) who have a variety of skills and knowledge on sleep research around the world (**Fig. 1**). Especially recruiting young PIs who are returner to Japan has become a powerful addition scientifically and internationally. Secondly, IIIS has expanded to include human sleep lab and established a subset of the translational research division. Further, S'UIMIN Inc., established as a spin-out from IIIS, has successfully developed their own wearable EEG-measuring device with AI-based algorithms. Their business facilitates bigdata analysis and eases in-house sleep diagnosis as well. Opportunities have opened up by searching biochemical changes underpinning sleep-wake cycles to applied physiology and data science targeting human health and treatment options.

In addition, we must mention the discovery of an inducible hibernation-like state in non-hibernator rodents, by the research group of Vice Center Director Sakurai. The second hypomobile behavior, hibernation, is another mystery in neuroscience. This recent finding was a breakthrough to realize human synthetic hibernation. If the application of this technique becomes possible, a window of opportunities will widely open for emergency cares to reduce mortality and sequelae or even applied to a long journey to Mars.

To further solve the mystery of 2 types of hypomobility, *i.e.*, **sleep** and **hibernation**, we continuously devote our scientific activities to following objects.

1. To elucidate the fundamental mechanisms of sleep/wake regulation
2. To elucidate molecular pathogenesis of sleep disorders and related diseases
3. To develop and verify treatment strategies for sleep disorders
4. To elucidate the fundamental mechanisms of hibernation regulation

To accomplish these objectives, we have so far conducted wide-ranging research, covering a scope from a) basic biology such as neuroscience and molecular genetics to b) pharmaceutical science, c) human physiology, and d) data science. We thus aim to create the new interdisciplinary research domain, "sleep science" by fusing these research fields. Further, it is requisite that IIIS continuously makes the efforts to secure sufficient external research funds and to increase and expand collaboration/research alliances especially in the field of translational research with outside groups including the collaboration groups in University of Tsukuba, the overseas Satellites, external research institutions, and private companies. Most recent success on acquiring external research funds was **Moonshot R&D Program** operated by Japan Agency for Medical Research and Development (**AMED**) (>¥3,000 M for 5 years starting in FY2021). Hence, sustainability of IIIS is very visible within University of Tsukuba and amongst WPI Centers as well.

2. Mid- to Long-term Research Objectives and Strategies

* Describe new challenges in the Center's research objectives and plans after FY2022.

To realize a society where various issues of sleep are well managed to prevent diseases caused/worsened by severe sleep debts

Sound sleep is essential for maintaining physical and mental health; losing sleep chronically poses immense, medical, and social problems. We thus aim to overcome sleep double and resulting sleep disorders from which more than 20% of people in developed countries suffer, in order to let people enjoy the lives with relief and release from any sleep-related problems. To save our ordinary life or even improve our daily quality of life, we strategically aim for this vision as the mid-term objective.

To realize a society where innovative emergency medical care based on hibernation is implemented to save lives even in disasters

Last year, the Vice Center Director of IIIS discovered a group of neurons (Q-neurons) in the hypothalamus whose forced-activation induces a hibernation-like state in mice. Besides sleep, hibernation is another behavior that is characterized as regulated hypomobility. The hypomobile behavior adapted to the rotation of the earth is sleep, while another hypomobile behavior accommodated to the revolution of the globe is hibernation. Revealing similarities and differences between sleep and hibernation would lead us to better understanding of both hypomobile behaviors. The characteristics of hibernation, hypometabolism reduces systemic oxygen demand drastically and could offer an effective critical care to avoid tissue injuries and necrosis under hypoxia/anoxia. We thus try this as the long-term objective.

Expanding our research subject from sleep to 2 hypomobile behaviors (sleep and hibernation), IIIS aims for ensuring to achieve our vision, having people enjoy their lives with relief and release from health concerns until 100 years old.

Setting out 5 specific goals as below, we will accomplish our both mid- and long-term objectives mentioned above and provide substantial benefits to everyone.

1. To develop methods to control homeostasis of sleep to save more time to improve QOL

2. To develop preventive measures against diseases caused/worsened by severe sleep debts
3. To develop methods to predict risks to be suffered from diseases caused/worsened by sleep debts
4. To build a model of the medical network offering sufficient cares for sleep disorders to everyone in the world
5. To develop innovative emergency medical care using the hibernation technology to save lives even in disasters

3. Management System of the Research Organization

* Describe the system of organizational management via which the center will execute the above-described research strategy and plan.

* In Appendix 1-3, list the Principal Investigators, enter the number of center personnel (researchers, research-support staff, and administrative staff), and provide a diagram of the Center's organizational management system.

To implement the research strategy and plans outlined above, as of April 1, 2021 we have organized a new project consortium, consisting of all the PIs in Core Group of the Center (IIIS) and PIs of new Collaborative Groups in University of Tsukuba and new Satellites (refer to Appendix 1 for the details). The new project shall be financed mainly by **AMED Moonshot R&D Program**. The Center Director, Masashi Yanagisawa stays in the position as it is and will also serve as the project manager (PM) of the Moonshot R&D Program.

To strengthen our capability of systems biology/mathematical analyses further, we recruit a new PI from the University of Tokyo. We also invite 2 computational scientists in University of Tsukuba as the members of University of Tsukuba Collaborative Group and invite 2 more computational scientists from Keio University and Tohoku University as the members of the Collaborative Groups. We nominate also a specialist of non-human primate in University of Tsukuba as a new member of the Collaborative Group for the hibernation study, while we keep good relations with the PIs of the current Collaborative Groups and continue ongoing collaborations with them. Among current Satellite PIs, R. Greene, the University of Texas South Western Medical Center (TX, USA) and Q. Liu in National Institute of Biological Sciences, Beijing (China) continue to join the new project. Clifford Saper, Beth Israel Deaconess Medical Center (MA, USA) and Vladyslav Vyazovskiy, Oxford University (UK) additionally join the new project as well.

Regarding the Administration, M. Kimura will stay in charge as the Administrative Director, while T. Kokubo, the former Administrative Director, is reappointed as a High Class Research Administrator to support the PM of the Moonshot R&D Program. No major structural changes in the Administration would occur under an expected subsidy from WPI Academy.

4. Plan for Promoting the International Circulation of World's Best Brains

* Describe your policy and concrete plan for promoting the international circulation of the world's best brains, which is an important function of the WPI Academy.

Overseas PIs, *i.e.*, Liu, Greene, Saper, and Vyazovskiy, have been actively participating in research activities with IIIS members through UTSW, NIBS, BIDMC, and Oxford, respectively. Not only to science, they also contribute to the management of IIIS by joining the PI meeting held monthly even when absent from the institute, or via online (currently this is the ordinal setup) and take an active part in important events such as symposia hosted by IIIS. In addition, we will start **Moonshot Work in Progress** online meetings (**MSWIP**) including these overseas satellite members every month from FY2022. IIIS will strengthen the international relationship by the support of WPI Academy subsidy.

To WPI-IIIS Annual Symposia, totally 43 outstanding foreign researchers have been invited from abroad in order to share the latest achievements in sleep research or relevant fields and most importantly to communicate for global networking. Moreover, we regularly hosted 170 WPI-IIIS Seminars where we invited domestic and foreign researchers in sleep/neuroscience fields almost every other week; 68 overseas speakers gave us lectures, by which the ratio of foreign speakers reached 41% since the inauguration in December 2012. We hope that **WPI-IIIS Symposia** and **WPI-IIIS Seminar** series can be held onsite FY2022 onwards again. These events definitely stimulate all researchers in IIIS, University of Tsukuba as well as WPI Centers and other colleagues collaborating with us.

To build up a supporting system for overseas researchers, IIIS has concluded the agreement on support for foreign researchers with Japan International Science and Technology Exchange Center (**JISTEC**). They offer services of accompanying foreign researchers to the City Hall for the residence registration, opening a bank account, etc. Further, many IIIS foreign researchers reside in the international accommodations operated by JISTEC.

University of Tsukuba also fully supports them via a unique department, "University of Tsukuba, **Global Commons**, International Exchange Support Office" which engages in livelihood support for foreign

researchers and their families. They provide information on accommodation for foreigners in- and outside the University and daily life in Tsukuba, and offer services including Japanese classes, proxy application for the certificate of eligibility (visa), etc. Another supporting system by the **Department of Research Promotion** offers a fund to Ph.D. candidates for Research Assistant (RA) position. Moreover, University of Tsukuba has been selected as a recipient of **JST SPRING** (Support for Pioneering Research Initiated by the Next Generation). Indeed, many of IIIS students have been already supported by this program. Infiltrating across campus, IIIS Research Assistantship will strategically continue.

Speaking of the international circulation of World's best brains, IIIS has started preparing a proposal for a new Kakenhi **RECONNECT Initiative** (Research Excellence through International Collaboration and Network Construction). We accelerate the international exchange through this program, sending out and receiving in young potentials vigorously, to stimulate further spirit of global thinking and acting across international partners. Worth specially mentioning is that University of Tsukuba has facilitated the **International Tenure-Track System** under the Program for Promoting the Enhancement of Universities. Young faculty candidates accepted by the system will have chances to work abroad for a couple of years within the 5-yr term before tenure evaluation. Such opportunities will be further increased by the University's newly commenced program entitled "Nurturing Trans-border Researchers Crossing Countries, Disciplines and Industry-university-government Sectors" upon the recent award of "**Strategic Professional Development Program for Young Researchers**" in FY2021 by MEXT. IIIS encourages our members to apply for the system to activate international brain circulation effectively.

5. Plan for Disseminating the WPI Program Achievements

* Describe your policy and concrete plan for disseminating WPI center achievements both within the host institution and to other universities, especially their experience and know-how accumulated on establishing top world research institutes and advancing system reforms.

IIIS has given a major impact on the reform of University of Tsukuba. During the third mid-term plan starting from FY 2017, the University aims to pursue the globally unrivaled frontier research, i.e., the research for quest for truth and innovation contributing to society. To achieve the goals, the University has made a plan of reorganization/restructuring/merger of all research centers. Accordingly, the research centers have been classified by function into the **Advanced Research Centers** and the **Research Support Centers**. The former has been further classified as R1 (World-class Research Center), R2 (National-class Research Center), R3 (Developing Research Center), and R4 (Research Unit) to facilitate strategic resource allocation. Center for Computational Science (CCS) and Life Science Center for Survival Dynamics, Tsukuba Advanced Research Alliance (TARA) are classified as the R1 status of World-class Research Center in physics and bioscience, respectively. Besides the research center's reorganization/classification, the University established Organization for Development of Global Centers in March 2020 to implement its objectives through the comprehensive support provided by the creation of an 'On-campus Special Zone for Research Strategy' and strategic allocation of the University's research resources. IIIS and R1-accredited CCS and TARA, are the initial group of the research centers to be supported by the Organization, which aims to expand horizontally among these centers the tasks/achievements of promoting advanced /interdisciplinary researches, internationalization, strategic PI recruitment, and reforming systems thus far headed by IIIS. Upon completion of IIIS as a WPI-supporting center, the University has decided to create a higher rank in the Advance Research Center group as **RS** (Word Top Level Center), and IIIS is acknowledged to apply for the highest rank after FY2022.

6. Plan for Sustaining the WPI Brand

* Describe your plan for sustaining and enhancing the WPI brand.

IIIS has been established de novo in University of Tsukuba as the WPI Center focusing basic sleep science to solve the medical and social issues related to sleep by elucidating mechanisms of sleep/wake regulation and molecular pathogenesis of sleep disorders, and developing treatments for sleep disorders. By FY2020, the research focus expands to another hypomobile state, hibernation, with a discovery of Q neurons, exploited by the Vice Director's research team. After 10 years based on achievement by all IIIS members and their collaborators, IIIS have successfully elaborated a "world premier" status, resulting in the best fruit of the WPI Program. IIIS positions now itself as a world leader in sleep, and colleagues in the related field well recognize domestically and internationally IIIS launched as one of WPI Centers that MEXT, Japan initiated a while ago.

One of success points in domestic activities must be derived from proactive participation in outreach events. Especially, the Center Director Yanagisawa rarely declines any offers by scientific communities as well as general media to promote IIIS/WPI Program. He will continuously draw attentions after IIIS becomes a part of WPI Academy. Meanwhile, IIIS has attracted many school students. We have

occasionally accepted official school visits and unofficial interviews by high-school students; among them a few applied for University of Tsukuba. Hopefully, such recruitment will increase the values of the WPI brand. Further, IIIS members are very much encouraged to organize WPI-joint symposia and workshops at academic organizations, e.g., Japan Society of Sleep Research. We continuously advocate WPI whenever IIIS members conduct or are invited to events and ceremonies.

Similarly to the domestic activity, IIIS members are eager to reinforce international communication when the pandemic of COVID-19 terminates. Several members have already committed to chair symposia at the World Sleep Congress in Rome, in March 2022; however most of us would not enable to travel there. Sooner, the opportunity to integrate globally will open. Then, young members of IIIS will apply for the next career globally through the network of IIIS alumni. In this way, WPI-IIIS members will occupy international positions, consequently spreading out the unique reputation of WPI over the world.

7. Support by Host institution

* Describe measures that the host institution will take to support and sustain your Center.

To make the foundation of IIIS sustainable, the President of University of Tsukuba has repeatedly stated at the WPI Program Committee that PIs with a proven track record of achievement should be promoted to receive the status of 'tenure.' In FY2021, President Nagata initiated strategic positioning for IIIS faculty members and offered the tenure to 4 PIs. After the termination of the supporting period of the WPI program in FY2022, 2 PIs of IIIS will undergo a review process for a tenure position, then yearly the rest of PIs will follow the same procedure.

In addition, University of Tsukuba provides IIIS various resources for operational and financial supports. The amount would be equal to or greater than one we received in previous years;

1. IIIS receives total ¥21 M for management expenses every year as the support from Organization for Development of Global Centers and Organization for the Support and Development of Strategic Initiatives, respectively.
2. The Department of Research Promotion, as a counterpart in the University headquarters to IIIS, supports various office procedures including the applications for competitive funding.
3. IIIS rents for ¥70 M/year the part of the IIIS Building (2,000 m²) owned by the University, while the University bears nearly ¥90 M of utility/maintaining costs for the IIIS Building.
4. The University let IIIS use the research spaces (211 m²) in Innovation Medical Research Institute at a minimal cost to accommodate the Human Sleep Lab.

8. Resource Allocation Plan

* Describe your plans over a 5-year period for allocating resources acquired from both the host institution (e.g., financial resources and positions) and from external research funding to execute the Center's functions and activities described above.

* In Appendix 4, enter concrete numbers in the Resource Allocation Plan.

Financial resource and positions acquired from the host institution and their allocation are described in a previous section and in Appendix 4. Funds from external sources are also listed in Appendix 4.

Towards the end of WPI in FY 2021, we sought large-scale and long-term competitive funding during FY 2020. Eventually our research proposal aiming to solve mysteries of sleep and hibernation that involves all research groups in IIIS was successfully accepted by **AMED as one of Moonshot-type R&D projects**. Given this prominent award, we are tremendously encouraged to further develop our research programs without downsizing the scale of IIIS founded by the WPI support. In FY2021, the total amount of the competitive funds would be ¥1,089 M, of which ¥289 M was supplied from the Moonshot. Expecting a further expansion from the financial viewpoint, the headquarter of University of Tsukuba will create a higher position, **RS (R Supreme)** for assimilating IIIS into the organization of the **Advance Research Centers** and support IIIS more than ever by proper positioning and management expenses.

It is also worth mentioning that IIIS PIs and even non-PI junior researchers are strongly encouraged to seek KAKENHI and very active to submit proposals to different categories. We are proud that our results opened in last April marked over 40% success rate for the FY 2021 screening. Remarkably, one of T. Sakurai's proposals was accepted to the Scientific Research (KIBAN) S scaled up from the A category. Additionally, junior PIs are also accustomed to applying for project grants funded by public agencies such as JST and AMED and private foundations. Good examples are recent acquisition of 3 awards with KAKENHI Transformative Research Area B and 2 awards with JST FOREST, which is an excellent record representative of University of Tsukuba. In these manners, each member will make a full effort on winning own funding to contribute to IIIS functions and individual activities. In other words, IIIS is a very challenging cohort of scientists seeking competitive external funding opportunities to sustain our research programs successfully.

Appendix 1 List of Principal Investigators (Application for Academy Center Certification)

* If the number of principal investigators exceeds 10, add rows as appropriate.

* Give age as of 1 April 2022

* For investigators who cannot participate in the center project from FY 2022, indicate the time that their participation will start in the "Notes" column.

* Enter the host institution name and the center name in the footer.

	Name	Age	Current affiliation (position title, organization, department)	Academic degree and current specialties	Effort(%)*	Notes (Enter "new" or "ongoing")
1	Masashi Yanagisawa	61	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	M.D., Ph.D.; Neuroscience, Pharmacology	95	ongoing
2	Takeshi Sakurai	57	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba; Professor, Faculty of Medicine, University of Tsukuba	M.D., Ph.D.; Neuroscience	80	ongoing
3	Hiromasa Funato	52	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba Professor, Toho University	M.D., Ph.D.; Neuroscience	40	ongoing
4	Robert Greene	71	Professor, Department of Psychiatry, University of Texas Southwestern Medical Center	M.D., Ph.D.; Neuroscience	10	ongoing
5	Qinghua Liu	50	National Institute of Biological Sciences (NIBS), Tsinghua University, China	Ph.D. ; Genetics, Molecular Biology, Biochemistry	10	ongoing
6	Noriki Kutsumura	44	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Organic Chemistry, Medicinal Chemistry	80	ongoing
7	Kumpei Tokuyama	68	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D., ; Energy Metabolims	100	ongoing

8	Takashi Kanbayashi	58	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba; Physician, Ibaraki Prefectural Medical Center of Psychiatry	M.D., Ph.D.; Sleep Medicine and Psychiatry	80	ongoing
9	Michael Lazarus	52	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Neuroscience	80	ongoing
10	Kaspar Vogt	55	Associate Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	M.D., Ph.D.; Physiology, Pharmacology, Neurobiology	100	ongoing
11	Masanori Sakaguchi	45	Associate Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	M.D., Ph.D.; Neuroscience	80	ongoing
12	Yu Hayashi	41	Professor (WPI-IIIS), International Institute for Integrative Sleep Medicine, University of Tsukuba Professor, Graduate School of Medicine, Kyoto University	Ph.D.; Neuroscience	20	ongoing
13	Takashi Abe	42	Associate Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Behavioral Science Psychophysiology	100	ongoing
14	Sakiko Honjoh	41	Assistant Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Molecular biology, Genetics, Neuroscience	100	ongoing
15	Yo Oishi	41	Assistant Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Neuroscience	80	ongoing
16	Katsuyasu Sakurai	43	Assistant Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Neuroscience	100	ongoing
17	Arisa Hirano	36	Assistant Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba; Assistant Professor, Faculty of Medicine, University of Tsukuba	Ph.D.; Molecular biology, Genetics, Neuroscience	80	ongoing

18	Hirofumi Toda	43	Assistant Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Genetics	100	ongoing
19	Hiroyuki Kitagawa	66	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Computer Science, Databases, Big Data	100	ongoing
20	Shoi Shi	34	Assistant Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Neuroscience	100	new
21	Tsuyoshi Saito	37	Assistant Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Medicinal Chemistry, Chemical Biology	100	new
22	Mayumi Kimura	61	Professor, International Institute for Integrative Sleep Medicine, University of Tsukuba	Ph.D.; Physiology, Neuroscience	100	new
23	Tomohiro Okura	49	Professor, Faculty of Health and Sport Sciences, University of Tsukuba	Ph.D.; Exercise Prescription, Exercise Epidemiology, Gerontological Health and Fitness	10	ongoing (Satellite)
24	Toshiyuki Amagasa	50	Professor, Center for Computational Sciences, University of Tsukuba	Ph.D.; Computer Science, Databases, Big Data	10	new (Satellite)
25	Masayuki Matsumoto	45	Professor, Faculty of Medicine, University of Tsukuba	Ph.D.; Neurophysiology, General Neuroscience	10	new (Satellite)
26	Haruka Ozaki	34	Associate Professor, Bioinformatics Laboratory, Faculty of Medicine, University of Tsukuba	Ph.D.; Computational Biology	10	new (Satellite)
27	Clifford B. Saper	70	Professor, Neurology and Neuroscience, Harvard Medical School	M.D., Ph.D. ; Neurobiology, Circadian Rhythms	10	new (Satellite)
28	Vladyslav Vyazovskiy	46	Professor, Dep Physiology, Anatomy and Genetics, Oxford University	Ph.D.; Sleep Physiology	10	new (Satellite)

29	Hiroyasu Ando	43	Professor, Center of Mathematical Sciences for Open Innovation, Tohoku University	Ph.D.; Medical Informatics	10	new (Satellite)
30	Genshiro Sunagawa	45	Senior Research Scientist, Center for Biosystems Dynamics Research, RIKEN	M.D., Ph.D.; Physiology, Emergency Medicine	10	new (Satellite)
31	Akihiro Yamanaka	50	Professor, Research Institute of Environmental Medicine, Nagoya University	Ph.D.; Neurophysiology, Electrophysiology, Molecular Biology	10	new (Satellite)
32	Moriyasu Kurino	48	Professor, Faculty of Economics, Keio University	Ph.D; Microeconomics, Game Theory, Matching Market Design, Experimental Economics	10	new (Satellite)
33	Masaaki Fujiwara	60	President & CEO, S'UIMIN Inc. Visiting Investigator, International Institute for Integrative Sleep Medicine, University of Tsukuba	DVM; Entrepreneur, Executive, Sleep Measurement	10	new (Satellite)

*Percentage of time that the principal investigator devotes to working for the center vis-à-vis his/her total working hours.

**World Premier International Research Center Initiative (WPI)
Number of Center Personnel**

		FY2022	
		Number of persons	%
	Researchers	68	/
	Overseas researchers	25	36.8
	Female researchers	26	38.2
	Principal investigators (PIs)	22	/
	Overseas PIs	6	27.3
	Female PIs	3	13.6
	Other researchers	12	/
	Overseas researchers	2	16.7
	Female researchers	4	33.3
	Postdocs	34	/
	Overseas Postdocs	17	50
	Female Postdocs	19	55.9
	Research support staffs	82	/
	Administrative staffs	20	/
TOTAL	170	/	

World Premier International Research Center Initiative (WPI) Diagram of Organizational Management System

- Diagram the Center's organizational management system and its position within the host institution in an easily understood manner.

