

The Cabinet Office made this document by translating the "Overview of the Final Report" from Japanese into English (as of August 31, 2021).

**Overview of the Final Report on Evaluation of OIST's Efforts and Future Development for Review Purposes
Under Article 14 of the Supplementary Provisions of the Okinawa Institute of Science and Technology
Graduate University School Corporation Act**

August 2021

Panel on Future Issues for the Okinawa Institute of Science and Technology Graduate University School Corporation

- The Okinawa Institute of Science and Technology Graduate University (OIST) was established in September 2012.
(Founder: Okinawa Institute of Science and Technology Graduate University School Corporation)
 - OIST has conducted world-class education and research for the purposes of contributing to the promotion and self-sustaining development of Okinawa and to the development of science and technology in the world through conducting internationally distinguished education and research on science and technology.
 - Background to compiling "Final Report"
 - It is stipulated in the Okinawa Institute of Science and Technology Graduate University School Corporation Act^{※1} that the national government shall review financial support for the School Corporation and other execution status of the Act approximately ten years after the enforcement (November 2011) of the Act, and thus the "Panel on Future Issues for the Okinawa Institute of Science and Technology Graduate University School Corporation" comprised of advisers began its discussions in June 2018.
- ※1 Article 14 of the Supplementary Provisions of the School Corporation Act;**
The national government shall review financial support for the School Corporation and other execution status of this Act approximately ten years after the enforcement of this Act, and take necessary measures based on the result of the review.
- The Panel checked and evaluated OIST's efforts and achievements heretofore, and released its findings in September 2020 as an "Interim Report." It also conducted hearings^{※2} from Okinawa's local governments and educational and research institutes, etc. based on the Interim Report.

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※2 Hearings;

- Local governments (Ishigaki City, Uruma City, Okinawa Prefecture, Onna Village, Nago City)
 - Business associations (Okinawa Association of Corporate Executives, Okinawa Prefecture Federation of Chambers of Commerce and Industry, Okinawa Prefecture Federation of Societies of Commerce and Industry, Okinawa Prefecture Small and Medium Enterprise Association)
 - Educational and research institutes (National Institute of Technology, Okinawa College, Tokyo Institute of Technology, Japan Advanced Institute of Science and Technology, University of the Ryukyus)
 - OIST officials (off-campus governors, off-campus councilors, faculty members, students, graduates)
- The Panel discussed OIST's future development from March 2021 based on the "Interim Report" and the results of the hearings, adopting such perspectives as the ideal scale of a university and the ideal level of financial support, and compiled its conclusions into a "Final Report."

I . Background to review

•The Panel in order to provide expertise-based advice to the review regarding the ideal level of financial support from the national government, etc. based on Article 14 of the Supplementary Provisions of the School Corporation Act, proposes OIST's future development to meet the intended objectives, after evaluating OIST's efforts and achievements heretofore.

II . Evaluation of OIST's current status

•In order to confirm the execution status of the School Corporation Act, the Panel comprehensively evaluated OIST's efforts and achievements over the ten years since the School Corporation Act took effect, from the five perspectives: "organizational management;" "education and research;" "contribution to the promotion and self-sustaining development of Okinawa;" "public relations, information disclosure, and other legal compliance;" and "finance."

•As a result, the Panel concludes overall that the mission statement set forth by OIST has been generally achieved and the execution status of the School Corporation Act has been generally satisfactory.

(Primary contents of evaluation)

•It is noteworthy with respect to its research results as a graduate university that OIST has achieved internationally distinguished scientific and technological

accomplishments, such as in less than ten years being ranked 9th in the world and 1st in Japan in the scale-adjusted rankings of "Nature Index 2019". They are also highly praised for conducting high-quality education.

•As to contribution to the promotion and self-sustaining development of Okinawa, OIST deserves praise for making the most of Okinawa's characteristics and resources in pursuing research aimed at solving the problems facing Okinawa, as well as pursuing industry-academia collaboration and promoting the use of research results. While OIST have earned a degree of appreciation, these efforts still have some way to go in terms of achieving the purposes of the establishment of OIST. It is an issue for OIST to root itself more deeply in the community, striving to understand the issues facing Okinawa and establishing closer relations.

•Judging from the evaluations heretofore, it is necessary that OIST will continue to pursue the world's leading education and research and the issue for OIST to address is how to utilize its high ability to work on research and its international network to develop and promote Okinawa and encourage exchanges and collaboration between academic circles and industries inside and outside Japan.

III. OIST's future development

• The Panel comprehensively reviewed OIST's future development based on the discussions heretofore.

1. Scale suitable for conducting the world's leading research and education as a research university

• Analyzed correlations between “Top 1% Most-Cited Papers” and the “Number of Papers Listed in Web of Science” among the world's leading universities, and leading research universities and research institutes in Japan.

⇒ There are three major groups (✕Figure1). The world's leading universities produce large numbers of high-quality papers across a broad range of research fields. OIST covers a small number of research fields and produces a small number of papers but the quality of its research is high and it has produced superior world-class research results.

2. Contribution to the development of Okinawa and our country's economic society through the promotion of science and technology

• It is needed to foster an environment in which research personnel from various fields can be brought together at OIST and in which a continual stream of interdisciplinary research projects are pursued.

• The key lies in how to spin research seeds out from OIST.

• The contributions of students and graduates are also a significant factor. It is important to establish an environment in which people can continue to take on challenges without fear of failure and to position entrepreneurship education within graduate school education.

• OIST should make parallel efforts to pursue thematic research collaboration through joint research, etc., as well as more systemic comprehensive collaboration, by actively highlighting OIST's research to companies. Sharing a long-term vision on creating new social value with companies is particularly necessary for comprehensive collaboration.

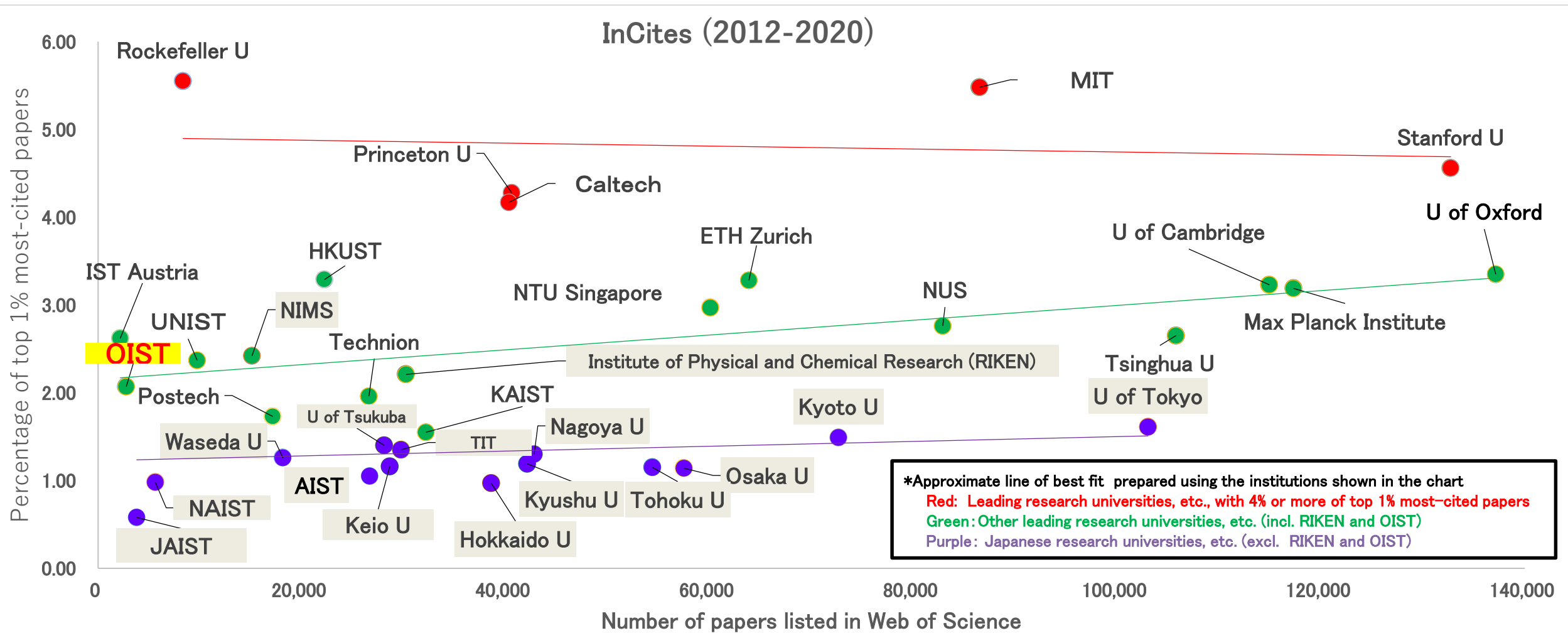
• It is vital that OIST engages in research that makes the best use of Okinawa's location (climate, nature, geographical position, etc.) by grasping the issues facing Okinawa.

3. Structure of financial resources suitable for conducting the world's leading research and education as a research university

• Analyzed the structure of financial resources at five universities (Tokyo Institute of Technology, California Institute of Technology, Swiss Federal Institute of Technology in Zurich, Hong Kong University of Science and Technology, Nanyang Technological University)

⇒ Dependent on universities' particular circumstances, but a common factor was that none of them rely entirely on subsidies from the national government but instead earn their own revenues from various other channels.

Figure 1: Numbers of Papers Listed in “Web of Science” and Percentages of Top 1% Most-Cited Papers



***Approximate line of best fit prepared using the institutions shown in the chart**
Red: Leading research universities, etc., with 4% or more of top 1% most-cited papers
Green: Other leading research universities, etc. (incl. RIKEN and OIST)
Purple: Japanese research universities, etc. (excl. RIKEN and OIST)

The Cabinet Office made this figure using an analysis tool InCites based on “Web of Science” (as of April 2021, partially as of September 2021)

Web of Science
 A publisher-independent citation database for high-quality influential publications around the world

InCites
 A tool for analyzing research achievements based on research papers and information cited therefrom. This product was created by Clarivate Analytics, the provider of Web of Science, based on the paper data recorded in Web of Science. This tool provides various indicators for measuring the research capabilities of researchers and research institutes based on how often papers are cited (number of citations).

[Not charted (institutions with high off the chart figures)]

○ Harvard University	Papers: 326,894	Top 1% most-cited papers: 4.07%
○ University of Toronto (Canada)	Papers: 176,292	Top 1% most-cited papers: 2.84%
○ Chinese Academy of Sciences	Papers: 463,694	Top 1% most-cited papers: 1.98%
○ Centre national de la recherche scientifique (France)	Papers: 405,176	Top 1% most-cited papers: 1.56%

III. OIST's future development (※continued)

3. Structure of financial resources suitable for conducting the world's leading research and education as a research university

• Compared changes over time in the structure of financial resources at two universities (Hong Kong University of Science and Technology, Tokyo Institute of Technology)

⇒ Universities have transitioned to structures not dependent on specific financial resources in response to the rapid changes taking place in the environments surrounding these universities as they grow and established self-sustaining financial bases.

4. Actions required of OIST for future development

• The Panel recommends that OIST aim for growth by moving to the upper right in **Figure 1**, accomplishing this by improving both the quality and quantity of papers. In expanding its scale, OIST needs to assess the strengths of existing fields and the need for new fields rather than simply increasing the number of PIs and research fields.

• To contribute to the development and promotion of Okinawa, it is also important that OIST conduct research that makes the most of Okinawa's location. It is needed to utilize its accomplishments to become a node for solving the problems facing Okinawa, Japan, and the world through science and technology. OIST is thereby expected to gain the understanding of Okinawans and the Japanese public as a whole.

• OIST covers about 95% of its ordinary expenses with financial support from the national government (Okinawa development and promotion budget). It is needed to in the future increase the share of external funding and diversify the structure of its financial resources. OIST has not heretofore mostly achieved the external funding targets it has set and has even lowered these targets in recent years, so clear improvements are needed in this regard.

• It is needed to evolve the governance, with the School Corporation growing organizationally, to become a world's leading research university.

5. Ideal level of financial support from the national government

• To achieve the purposes for which OIST was established, the Panel recognizes that financial support from the national government is still necessary, and advises the national government to provide appropriate support.

• Article 8 ※ of the School Corporation Act is necessary to be maintained for the time being.

• The Panel advises the national government to encourage OIST to establish a self-sustaining financial base, and to consider the appropriate level of financial support every time after a certain period of time.

※Article 8 of the School Corporation Act;

The national government, within the range of its budget, may subsidize the School Corporation for more than one-half of the expenses required for the operation specified in Article 3, paragraph (1).

IV. Advice

Expecting that OIST, while being rooted in Okinawa, becomes a world's leading research university that connects Japan and the world through science and technology, and achieve its intended objectives, the Panel proposes the following:

○ OIST needs to address social issues by promoting science and technology. Furthermore, in the process of innovation sprouting from OIST research outcomes and new industries being born and growing in Okinawa, OIST is expected to serve as a node and contribute to the development and promotion of Okinawa and the development of our country's economic society.

○ It is important that the financial base that supports the development of a university is sustainable. OIST needs to early break away the current situation in which about 95% of its operating budget is covered by the national government subsidy. The Panel advises OIST to diversify its financial resources by, for example, acquiring private funds, and to establish a self-sustaining financial base, following the examples of the world's leading universities.

○ In order to achieve the objectives of the establishment of the OIST, financial support from the national government is still necessary, and the Panel advises the national government to provide appropriate support. Therefore, it is necessary to maintain Article 8 of the School Corporation Act for the time being. The Panel also advises the national government to encourage OIST to establish a self-sustaining financial base through securing its own financial resources and efficient execution, and to consider the appropriate level of financial support every time after a certain period of time, based on OIST's strategy and performance.

○ Compared with the world's leading universities, OIST is currently small in size and does not have a wide and diverse range of research fields, which limits the sustainable creation of internationally distinguished science and technology. It is also concerned that mutual stimulation and fusion among research fields, which are necessary to generate buds of innovation, will not easily occur. Therefore, it is necessary to expand its scale for the future.

Members List of the Panel on Future Issues for OIST

As of August, 2021

(Chair)	Masuo Aizawa	Counselor to the President, Japan Science and Technology Agency (JST)
(Deputy Chair)	Akio Nishizawa	Senior Research Fellow, New Industry Creation Hatchery Center, Tohoku University
	Mari Oshima	Professor, Institute of Industrial Science / Interfaculty Initiative Information Studies, the University of Tokyo
	Hideto Okazaki	Counselor to the President, AI HAYABUSA, Ltd
	Nobuyuki Osakabe	CSO, Smart Life Business Management Division, Hitachi, Ltd
	Mitsunobu Koshiha	Honorary Chairman, JSR Corporation
	Minako Takizawa	Science Journalist
	Chisato Miyaura	Especially-appointed Professor, Tokyo University of Agriculture and Technology
	Kiyoshi Yamamoto	Professor, Academic Institute, Kamakura Women's University

(Titles omitted)