State of the “Highly strategic and ambitious targets and plans” initiative in the three stage of goals and with mid-term project planning -University Reform and Internationalization-

[The three stage of goals 1] Launch “KIKAN Education” with the aim of fostering “active learners” and “sturdy leaders,” based on the concept of students who have diligently practised learning by themselves and cultivating themselves, while promoting reviews of the curriculum and University-wide internationalization.

[The three stage with mid-term project planning 1] In order to expand and develop active learner initiatives, we will inspect the curriculum, and implement reviews where necessary, in addition to increasing the number of classes etc. conducted in foreign languages. The three policies related to education will undergo further validation, and we will promote the use of the scoring rubrics for each class that have been implemented since FY2016, while setting rigorous grade evaluations for which the graduation standard is a GPA of at least 2.0 for those who entered the University in FY2016.

Expanding and developing initiatives for the fostering of active learners

- Reviewing the curriculum, and taking measures to respond to more internationalization that are grounded in undergraduate education and based on “KIKAN Education,” in order to expand and develop initiatives for the fostering of active learners

- Reconsidering/reviewing 3 education-related policies
  - Completed reconsidering/reviewing of 3 policies across all 11 schools
  - Began preparations for English version of 3 policies
  - Set up University Education Innovation Initiative structure as means to realizing PDCA cycle for entire amount → Check 3 policies for by each school/ institute/ faculty from 3rd-party standpoint

- Driving the use of scoring rubrics in all courses
  - Syllabus system improved (addition of functions for creating rubrics)

- Increase in the number of courses using foreign languages, including those taught jointly in Japanese
  - Ratio of courses held in foreign languages

- Implementation of study guidance etc. in accordance with the graduation standard of a 2.0 GPA
  - Began study guidance based on the “Agreement regarding Guidance for Students with Poor Grades,” which was created by all 11 undergraduate schools in FY2015
  - At the end of each term, an analysis of GPA distributions, etc. was conducted for courses that count towards the GPA, and feedback on the results of the analysis was provided to each school, institute or faculty

- Improvement in graduates with a GPA below 2.0, from 21.8% in FY2015 to 15.4% in FY2017

KIKAN Education

Fostering active learners
who continue to learn autonomously throughout their lifetimes

Faculty of Arts and Science
- Seminars (Mandatory for all students)
  - Cultivating a “Foundation for Study”

Subjects with joint study of issues
(Mandatory for all students)
  - Joint study across different fields

Subjects in the Faculty of Languages and Cultures

Cybersecurity subjects

General subjects

KIKAN Education subjects for higher years

Humansities/science subjects

Health/sports subjects

Ability to continue studying

Creation of new culture/society
State of the “Highly strategic and ambitious targets and plans” initiative in the three stage of goals and with mid-term project planning -University Reform and Internationalization-

Establishing the School of Interdisciplinary Science and Innovation (April 2018)

- Established the new School of Interdisciplinary Science and Innovation for the cultivation of human resources who use diverse-ranging knowledge and sophisticated communication skills
- Acquire superior operational capabilities in English
- [Interdisciplinary]-solving measures by the series of initiatives with hub campus
- Leveraging the results of our efforts to create an educational system that meets international standards, we will set up a new undergraduate school by FY2018 with the aim of cultivating human resources able to actively engage with global society.

Cultivating global human resources to bear the responsibility of creating new innovations

Under the powerful leadership of the President, maximized the use of the University’s unique “Graduate school/Faculty system” and “University reform revitalization system” to secure more than 70 teaching staff.

The four skills to be acquired

- “accelerated learning” type
- “focus on descriptive learning ability” type
- “focus on adaptability to university” type
- “graduate school/faculty system”

QUBE is formed from “QU” (Kyushu University), “B” for Border Crossing, and “E” for Entrance examination, playing on the idea of a cube. It is intended to call to mind people who are three-dimensional, and who can be viewed from a variety of angles.

Using [Design] that considers problem-solving measures by the specifying of social problems, [Cooperation] through initiatives with others aimed at solving these problems, using the series of [Experiences] accumulated along the road between design and cooperation, and with the concept of [Interdisciplinary] as a goal, while cutting across the academic fields of humanities, social sciences, and natural sciences, we acquire the mindsets of both arts and science, and diverse methodologies, to conduct studies based on practical issues.

○ Acquire the highest operational capabilities in English through intensive English courses matched to the level of proficiency
○ Cinemove limited-duration study overseas at foreign universities, etc. in order to expand international knowledge and understanding, and improve communications skills
○ Build an environment in which Japanese and overseas students can study together, with students and teaching staff interacting, forming a global hub campus that generates synergistic and collaborative effects.
The University has conducted its academic research with the goal of establishing a top-level research and educational center, that is full of energy for the challenges of the future, and that reforms itself autonomously in response to the demands of regional society, international society and the academic community. Grounded in the success of our research so far, we will further extend the University’s strengths and distinctiveness, including diversity (international collaborations that utilize the diversity of academic fields), growth potential (global expansion based on the fruits of our Asian strategy), and multifacetedness (thick strata of research and education stemming from our position as a research university), and conduct supracentric academic research that meets the highest standards worldwide, as appropriate to a global research and educational center.

**Energy research and education organization initiatives**

- **A University-wide organization that brings together researchers in energy fields from natural sciences to the humanities and social sciences,**

- **By combining primary and secondary energy research areas with policy proposals,** we design the energy systems for the society of the future, and lead the way through technological, industrial and social paradigm shifts.

**Main initiatives in FY2017 (promoting energy research for the society of the future)**

- **Energy research and education organization Support program for young researchers/doctoral students:**
  - We provide support for research funding (young researchers: ¥1.0 to ¥2.0 million per project; doctoral students: ¥0.2 to ¥0.5 million per project) for superior research proposals from young researchers/doctoral students (nine young researchers and 18 doctoral students selected)

**Kyushu University Energy Week 2018**

This was a symposium attended by the various energy-related schools, institutes and faculties of Kyushu University working in cooperation. Eminent Japanese researchers working on energy research were invited to present lectures, and an “Overseas Student/Researcher Invitation Program” (poster session) was implemented with the aim of supporting international joint research by providing subsidies for expenses incurred when accepting an invitation. 10 such applications were selected, and the symposium ran for five days with an attendance of around 1,800 people.
<Unit 4> Strengthening collaboration using our track record in Joint Usage/Research Centers as a foundation – University Reform and Internationalization –

State of the “Highly strategic and ambitious targets and plans” initiative in the three stage of goals and with mid-term project planning - University Reform and Internationalization -

[The three stage of goals (6)]

- In order to actively promote contributions in areas of strength and distinctiveness being prioritized by the University, and collaboration and cooperation with other fields, we will give more substance to the activities and functions of the Joint Usage/Research Centers, which are core research institutions.

- Promoting new academic research areas

- Encourage exchange between different centers to promote new academic research areas

Initiatives for Joint Usage/Research Centers and strengthening collaboration -

- Making the functions and activities of the Joint Usage/Research Centers, which are important core research centers, more substantial for new academic research areas

- Encourage exchange between different centers to promote new academic research areas

Initiatives for Joint Usage/Research Centers

- Institute of Mathematics for Industry

  - Joint Research Center for Advanced and Fundamental Mathematics for Industry

  - [Main initiatives in FY2016]
    - Initiated the “Mathematics Advance Innovation Platform” funded by the MEXT, to promote advanced mathematics in industry.
    - [Main initiatives in FY2017]
    - Expanded the cooperation with industry and promoted the utilization of academic fields.

- Medical Institute of Bioregulation

  - Joint Research Center for Multi-scale Research of Host Defense Systems

  - [Main initiatives in FY2016]
    - Built a “Life Sciences Research Support Platform” database for shared equipment in the four departments of the hospital campus.
    - [Main initiatives in FY2017]
    - Developed a database for shared equipment.

- Institute for Materials Chemistry and Engineering

  - Joint Research Center for Multi-scale Research of Host Defense Systems

  - [Main initiatives in FY2016]
    - Established Core Collaboration Lab within the center (implemented three research themes at the Core Lab, focusing mainly on younger researchers).
    - [Main initiatives in FY2017]
    - Established a new usage promotion system within the center.

- Research Institute for Information Technology

  - Joint Usage/Research Center for Interdisciplinary Large-scale Information Infrastructures

  - [Main initiatives in FY2016]
    - In order to promote academic research using supercomputing systems, we set up the “New Usage Promotion System” that includes training sessions and free usage of Research Computational Systems, with the aim of unearthing potential users and terminating research themes.
    - [Main initiatives in FY2017]
    - Installed a new “ITO” supercomputer system.

- Research Institute for Applied Mechanics

  - Joint Research Center for Applied Mechanics

  - [Main initiatives in FY2016]
    - Set up new “Research to Support Career advancement for Young Researchers” initiative as part of efforts to promote the fostering of young researchers.
    - [Main initiatives in FY2017]
    -Further promotion of research for internationalization (international co-authorship rate improved to 45%) etc.

Promoting new academic research areas – program to form Pan-omics Measurement and Computational Science Center –

- Institute of Mathematics for Industry, Medical Institute of Bioregulation, Research Institute for Applied Mechanics, Institute for Materials Chemistry and Engineering, Research Institute for Information Technology

  - [Main initiatives in FY2017]
    - In order to promote new areas of academic research that facilitate exchanges at each center, we extended high-precision observation and comprehensive measurement of highly accurate data (“omics”) in the form of pan-omics measurement science to the academic areas covered by each center, and began preparations for the building of a “Pan-omics Measurement and Computational Science Center,” in order to foster young researchers who have acquired integrated methodologies for computational and data science.
The University has long conducted its academic research with the goal of establishing a top-level research and educational center that is full of energy for the challenges ahead, and that reforms itself autonomously in response to the demands of local communities, international communities and the academic community. Grounded in the success of our research so far, we intend to extend further the University’s strengths and distinctiveness—such as diversity (international partnerships that leverage the diversity of our academic disciplines), growth potential (global expansion based on the success of our Asian strategy), and multilayeredness (thick strata of research and education stemming from our position as a research university)—and conduct superlative academic research at the world’s highest level, as appropriate to a global research and educational center.

### Strengthening the functions of the International Institute for Carbon-Neutral Energy Research (PCNER)

- Promote leading-edge research related to the carbon neutral energy research domain in collaboration with the University of Illinois
- Invite foreign researchers from top universities in the world, and conduct international joint research of the world’s highest level.
- Advance collaboration between PCNER and other fields such as natural sciences (especially theory), mathematics, social sciences, etc.

#### Main initiatives in FY2016
- Established the Research Center for Next Generation Refrigerant Properties in PCNER’s organization, with the aim of accelerating our efforts to achieve a low-carbon society
- Invited 45 researchers from leading global universities such as MIT and SIFT
- Held “Joint UNSW-PCNER Workshop” in Sydney with the University of New South Wales (UNSW) → Invited 4 researchers from UNSW to the “PCNER Annual Symposium” held in Fukuoka and had discussions to initiate new international joint research projects
- FY2016 Record—Journal Publications: 316, Awards: 45 (including highly prestigious awards such as the Daiwa Adrian Prize, and the Commendation for Science and Technology by the Japanese Minister of Education, Culture, Sports, Science and Technology)

#### Main initiatives in FY2017
- Invited 17 researchers from leading global universities such as Peking University and Seoul National University
- Promoted international joint research with over 20 overseas partner institutions by holding 20 PCNER seminars, in which eminent researchers from around the world present a lecture, etc.
- Promoted student exchange through the Partnerships for International Research and Education (PIRE) program
- Sent young researchers to the University of Illinois for a long-term research visit as part of the effort to fostering them under the joint Tenure-Track Program with the Institute of Mathematics for Industry
- Newly established the Industrial Research Unit with its purpose being to pursue stronger relationships with industrial partners → Put in place the "Mazda Mobile Energy Storage for Low-carbon Society Division"

University of Illinois to serves as a hub for cooperation with other US institutions, strengthening our international research activities
State of the “Highly strategic and ambitious targets and plans” initiative in the three stage of goals and with mid-term project planning -University Reform and Internationalization-

Toward the creation of Global Hub Campus

Push forward with university reform and university-wide internationalization, implement world-class education and research activities by generating collaborative synergies through a variety of initiatives, and enhance international reputation measured against such indicators as World University Ranking.

Materializing the Top Global University Project

Using the University’s diversity, growth potential and multilayeredness as a base, we will promote the internationalization of the education system and the research.

Implementing governance reforms that support the mentioned above, and aim to become a top 100 university in the world.

Reputation Management Strategy

In order to meet our goals for the Top Global University Project, “SHARE-Q”, we will promote internationalization of research and education and the governance reforms to support it, building a global hub campus through the synergistic and collaborative effects of “nine SHARES” laid out in the project statement. In addition, we will increase the proportion of employees who meet criteria for English proficiency, as part of our moves to enhance the skills of the administrative staff who underpin the university-wide internationalization initiatives. As well as using the fruits of research and education derived from these measures to enhance our reputation, we will create a reputation management strategy drawn up with the top 100 universities worldwide in mind.

Initiative for the development of Admin Staff’s English proficiency

As part of our initiatives to improve the administrative staff’s command of English, implemented e-learning programs for TOEIC, training for writing in business English, and training for enhancing business English capabilities.

The three stage of mid-term project planning 26

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Deploying a safe, secure and advanced information & communications platform, and improving cyberliteracy

- Deploy a safe, secure and advanced information & communications platform in accordance with the Basic Act on Cybersecurity
- Initiatives aimed at improving the cyberliteracy of students, staff and faculty members

Main initiatives in FY2016
- Implemented analysis of the firewall operations log for responses to incidents
  → Put in place an environment that allows the cause of incidents to be clarified quickly and accurately (Raising the level of security)
- Introduced virus and spam mail checking system, as well as sandbox feature
  → Rolled out an environment in which it is possible to deal with targeted email attacks and other attacks that are difficult to identify (Contributing to reinforced security)
- Reviewed university-wide firewall operations
  → Changed from an approach in which communications restrictions on the University-wide firewall are used as security measures, to a comprehensive method in which university-wide firewall communications are monitored (Improving our ability to deter incidents)
  → Increased the speed of the core network
  → Adopted a network core switch capable of handling 100Gbps communication speeds in the Ito earthquake-proof server room (Realizing the provision of high-speed, stable networks)
  → Put in place a research platform that aims to respond to the realization of a super-smart society: Installed new “ITO” supercomputer system

Main initiatives in FY2017
- Began education for the cultivation of specialists through the use of cyber seminars.
  → in the research department donated by Fujitsu Limited, began “cybersecurity seminars” with the aim of nurturing specialists
- Promoted high-level research and educational program development in relation to cybersecurity measures
  → Initiated international joint collaborative research with the University of Maryland, University of New South Wales, University of London, and Indian Institutes of Technology ( Jointly hosted the “International Cybersecurity Symposium”)
- Began “Fundamental theory of cybersecurity” as a mandatory subject for KIKAN Education in undergraduate schools (Improving the cyberliteracy of students)
- As part of cybersecurity training given to all staff and faculty members, implemented targeted email training (including e-learning) (Improving the cyberliteracy of staff and faculty members)

Aims of ITO system

- New supercomputer system “ITO” user workshop
  - Clouds gather around ITO
  - New supercomputer system “ITO”

- Support for energy-saving, and operation for high-speed, stable network (Raising the level of security)
- New supercomputer system “ITO” (Front-end) 160 nodes 384 GB RAM
  - New supercomputer system “ITO” (Back-end) Large-scale simulation data accumulation
  - New supercomputer system “ITO” (Pre-post) link age 100Gbps capacity 24 PB
  - New supercomputer system “ITO” (User workshop)
  - Support for energy-saving, and operation for high-speed, stable network (Raising the level of security)
State of the “Highly strategic and ambitious targets and plans” initiative
in the three-stage goals and with mid-term project planning -University Reform and Internationalization-

Initiatives aimed at strengthening and reorganizing strategic/priority education and research organizations

○ Reorganize schools, institutes and faculties, and strengthen their functions by utilizing the “Evaluation in five years, organizational review within 10 years” approach, which encourages them to conduct university-wide inspections and evaluations in the fifth year of stage of goals, and reflect the results of that evaluation in completing rearrangements of the organizations within 10 years.

○ Investigate and implement reorganizations to strengthen the functions of the humanities and social science fields and prepare them for internationalization.

Examples of strengthening the functions and rearranging organizations during The three stage of goals:

- Setting up the School of Interdisciplinary Science and Innovation to cultivate problem-solving global human resources.
- Setting up the Kyushu University Platform of Inter/transdisciplinary Energy Research to drive initiatives to make “the ideal energy for the society of the year 2100” a reality.
- Setting up the Education Innovation Initiative as an education management organization to push improvements in the quality of education.
- Restructuring of organization for industry-academia-government collaboration, which seeks to strengthen management so as to promote collaboration between industry, universities and governments (reorganization of related entities, setting up of hospital area sub-office, opening the Nihonbashi satellite, etc.)
- Setting up of Cooperative Program for Resources Engineering (joint curriculum with Hokkaido University, Master’s program).

Sub-major programs in the four humanities schools

By completing attractive programs incorporating the concepts of “cross-functional” and “specialist domain,” students can, in addition to deep specialization acquired in their own school, broaden their knowledge in humanities and social science fields in a way that transcends the school framework.

Cross-functional programs
Intelligently curious students who are drawn to important themes such as history, Asia, information and business, that help explain modern society, are provided with opportunities to engage in wide-ranging, systematic study of subjects offered by the four humanities schools.

Specialist domain programs
Students whose study of the specialist domain of their own school has led to wider intellectual curiosity, and a desire to study the specialist domains of other humanities schools more deeply, are provided with opportunities for the systematic study of such areas.

Selecting from a variety of programs to match future career path

This began in April 2018, and 130 students (the total is 193) have registered for sub-major programs.

Investigate and implement reorganizations of the humanities and social science fields

[Main initiatives implemented during The three stage of goals]

○ In order to get a firm grasp of society’s requirements with regard to humanities and social science fields, the heads of the related schools, institutes and faculties held a total of 14 meetings for exchanging views with external experts and with alumni in Tokyo.

○ The four humanities schools (literature, education, law, economics) opened to each other the intellectual property that has accumulated within their respective fields of learning, and implemented “Sub-major programs in the four humanities schools” in which this is provided systematically.

○ The system has been strengthened by hiring researchers working in transdisciplinary research fields, and the “Office for the Administration of Collaborative Humanities Education and Research Commons” has been established, and the “Humansites Collaborative Research and Education Commons” initiative has been launched.

Continually inspect and evaluate schools, institutes, faculties and shared education and research facilities of the University to encourage voluntary change within these organizations, with the aim of further advancing and enhancing education and research at the University.

- Summarize past education and research activities of schools, institutes and faculties through discussions among deans and directors, corporate evaluations, and other data that serve as indicators.
- Evaluate reorganization plans aimed at realizing the future vision of each school, institute and faculty, and implement them during the next stage of goals.
- Introduce the highly strategic and ambitious targets and plans initiative in the three-stage goals and with mid-term project planning -University Reform and Internationalization.

The three-stage with mid-term project planning

- University Reform and Internationalization

Determination of education and research reorganization activities of schools/institutes/faculties

- Setting up of Office for the Administration of Collaborative Humanities Education and Research Commons

Follow-up toward reorganization

setting up of initiatives to make the ideal energy for the society of the year 2100 a reality

Under the President’s leadership, we will respond flexibly to changes in academic studies and society from the perspectives of redefining the mission, analyzing the current status based on self-examination and assessment, and strengthening functions, utilizing the University’s unique “Evaluation in five years, organizational review within 10 years” approach, amongst other tools, to strengthen or reorganize strategic and priority education and research organizations. In particular, we will actively work on investigating and implementing reorganizations in the humanities and social science fields, as well as on reinforcing functions and internationalization.