2011 Program for Leading Graduate Schools by MEXT

Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster

# FY2014 Self Study Report



- Hiroshima University -

### Introduction

The Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster (hereinafter, "the Program") is a doctoral program designed to foster interdisciplinary and eclectic global leaders (Phoenix Leaders) who are able to undertake the best possible actions in any circumstance involving a radiation hazard, and to contribute to the recovery by displaying leadership based on appropriate judgment and a clear vision. Hiroshima University inaugurated the Program by taking advantage of its wealth of experience in supporting the recovery from the destruction of the atomic bomb, as well as the University's proven expertise as an advanced medical institution to treat survivors of the A-bomb. The 61 members of the Program comprise faculty members of Hiroshima University, as well as representatives from Fukushima Medical University, Tohoku University, Fukushima University, Nagasaki University, the Radiation Effects Research Foundation, and the National Institute of Radiological Sciences. Moreover, the Program is supported by many other research institutions and companies both inside and outside Japan, including the International Atomic Energy Agency (IAEA), the World Health Organization (WHO), and the International Federation of Red Cross and Red Crescent Societies (IFRC).

The Program, designed to foster multidisciplinary leaders, has been adopted as one of the MEXT Leading Programs in Doctoral Education (in interdisciplinary areas), unified four or five-year doctoral programs inaugurated in Academic Year 2011 with support from Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT). The aim is the radical reform of Japan's conventional graduate-school systems towards enhancing the quality of its doctoral education to a global level by jointly involving industry, academia, and government. MEXT will continue to support the Program of Hiroshima University until the end of the 2017 Academic Year.

Currently, the Program's second year, all related faculty members, administrative staff, and graduate students are cooperating with each other and following more practical curriculums, achieving steady progress. In handling various problems, such as dissatisfaction among students and insufficient communication among members, we are doing our best to produce genuine Phoenix Leaders.

We entered to third year from start point of the program. Every student who entered the program in Oct. 2012 passed Qualifying Examination, and they were promoted to the third year students, and started their practical research for writing a doctoral thesis. Students who entered in 2013 gave their presentations actively in various report meetings for preparing a presentation in international symposium in February.

We have tried to enhance the student support system in educational system. For example, we established "Mentor System" and held "Faculty and Students Opinion Exchange Meetings" constantly.

In October 2014, 6 new students entered the program. They came from various countries, Brazil, Cambodia, Vietnam, USA, and Japan. They went to Fukushima in November, and reconfirm their decisions by watching a real situation near the Fukushima Nuclear Power Plant.

It is my sincere hope that leading figures in industrial, academic, and government circles inside and outside Japan will read this report and provide us with their evaluations and suggestions, so that we can continue to improve the Program and meet the expectations placed upon us from around the world. I would like to ask for your frank suggestions, including unrestricted criticism.

January 2015

Tetsuji Okamoto

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# I List of Issues from results of External Evaluation in last year

We picked up 18 issues as follows from "FY2013 External Evaluation Reports" which were described by each members of the External Evaluation Committee, and we have tried to improve these issues in activities in FY2014.

No.	Issue	Criterion	Page
1	More specialists in Social Science will be added as new members of	Point	~
1	the Social Recovery Course.	2 - 1	p.5
	Additional educational seminars will be held across a broader range of	Doint	
2	fields so that professors are given the opportunity to share their	Point $3 - 2$	p.10
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	Education Committee will compile a teaching handbook for all	Point	
3	professors in order to share practical information on effective	3 - 1	p.8
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4	The program will employ a full-time English lecturer to improve	Point	p.10
+	English education.	3 - 2	p.10
5	By holding English retreats students will be given more opportunities	Point	p.17
5	to communicate and to carry out presentations in English.	5 - 1	p.17
	Students will be given more opportunities for practical international	Point	
6	communication by increasing the chances for them to participate in	5 - 1	p.17
	overseas internships and academic conferences.		
	A model schedule for adult graduate students will be established so	Point	
7	that the program's support system for them specifically will be clear	4 - 1	p.12
	and understandable.		
	In order to stabilize and improve students' studying in the program, a		
8	remote support system, which includes both a remote lecture system	Point	p.28
	and a videoconference system among other things, will be	5-7	F.20
	systematically implemented.		
9	Adding to the questionnaires on class-evaluation, the program will	Point	p.30
	implement additional questionnaires for all educational events.	6-2	•
10	The program will create a system that more accurately reflects	Point	•
10	students' opinions by having the students who are committee members	6-2	p.30
	also participate in the evaluation committee.		
1.1	The program will establish a more accurate and prompt	Point	
11	communication system through the expanded use of Bb9 and the	5 - 2	p.20
	Learning Portfolio System.		
	Based on the "Guide to the Organization of Interdisciplinary Integrated	D- 1	
12	Seminars", the necessary systems will be developed and implemented	Point $5 - (2)$	p.20
	so that students can write reports after actively participating in various	<u>э – (2</u> )	
	seminars and academic conferences, and then professors will promptly		

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	evaluate their outcomes and offer advice to the students.		
13	Practical and diverse study and research will be employed during both the short and long term fieldwork.	Point $5 - 1$	p.17
14	The diploma policy in the Phoenix Leader Education Program will be reviewed and developed.	Point $5 - (1)$	p.17
15	Plans for the future of the Phoenix Leader Education Program will be drawn.	Criterion 8	p.37
16	It is necessary to develop a broad global recruiting target.	Point $4 - \hat{1}$	p.12
17	More "Electives" and short-term internships will be carried out.	Point $5 - 1$	p.17
18	More opportunities will be given to students to lead activities at events such as international symposiums.	Point 7 −①	p.32

# I This year's evaluation of

# individual criteria (FY2014)

### Criterion 1. Purpose of the Program

Point: Does the purpose of the Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster (hereafter "the Program") comply with the purpose of the Leading Program in Doctoral Education, sponsored by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) : fostering leaders who have a broad perspective and creativity and who will be active in global academic, industrial, and governmental arenas?

#### [Explanation and Analyze the Situation]

Since its adoption, the Phoenix Leader Education Program (Hiroshima Initiative) has consistently pursued the fostering of global leaders (hereinafter called "Phoenix Leaders") who are capable of appropriately dealing with cross-border radiation-related disasters in an integrated manner, playing an active and international role in contributing to recovery from radiation disasters with an excellent sense of judgment and an ability to take action under a clear concept and philosophy. The program has also been seeking to foster global leaders who are instrumental in establishing Radiation Disaster Recovery Studies—studies on recovery from radiation-related disaster—by mobilizing the expertise of scholars specializing in various fields such as medicine, environmental science, engineering science, general science, sociology, education study, and psychology.

This year marks the fourth anniversary of the launch of the program. The initially envisaged purpose of the program remains unchanged. The program has been conducted in accordance with this purpose and this stance has been evaluated highly.

The first Technical Meeting on Science, Technology and Society (STS) Perspectives on Nuclear Science, Radiation and Human Health: The View from Asia, was held for two days from November 27, 2014 in Hiroshima under the joint sponsorship of the Phoenix Leader Education Program with the International Atomic Energy Agency (IAEA), and cooperated with Nagasaki University, the National University of Singapore. This program's educational purpose is to enable students to develop interdisciplinary and management abilities, and help them acquire the ability to deal with international issues. The students who participated in the meeting were commended by the IAEA for exhibiting such abilities through their presentation.

This program was evaluated by the Graduate School Doctoral Course Leading Program Committee (Japan Society for the Promotion of Science). The Committee said it is necessary for the university to join hands with the IAEA in maintaining and developing Radiation Disaster Recovery Studies, currently being promoted under this program, as global standards. What was found at the evaluation meeting was that this program was being regarded as urgently important and meaningful.

As shown above, the aim of this program is consistent with the policy set by the Ministry of Education, Culture, Sports, Science and Technology of fostering global leaders. In addition, the program is steadily moving closer to attaining another major goal of establishing Radiation Disaster Recovery Studies.

#### [Annex for Self Study Report]

- 1. Materials of 1st Technical Meeting on STS
- 2. Schedule of Interim Evaluation by Committee of Leading Program in doctoral Education

Point 2-1	Does the Program have guidance and student-support				
systems appropriate for achieving its purpose?					
ls	Issue 1: More specialists in Social Science will be added as				
new members of the Social Recovery Course.					

#### [Explanation and Analyze the Situation]

Teaching staff for students who joined the program in October 2014, in the third year since its launch, are one primary adviser and at least one co-adviser from each course—a total of at least four supervisors assigned to each student. Freshmen taking the Radioactivity Social Recovery Course under the Graduate School of Letters receive guidance from two teachers belonging to the graduate school. Such teachers take part in this program and teach the freshmen as a primary adviser or co-adviser. Furthermore, the students have various occasions to receive tuition from experts who belong to various institutions with which Hiroshima University has formed partnerships.

In the past, students had received support on their academic studies through a consultation counter on an individual basis. However, the consultation counter has more recently been reorganized into a mentor system, under which mentor handbooks detailing support have been compiled for both teachers and students to familiarize themselves with its content. Under the mentor system, students can receive academic support on cross-discipline studies from teachers serving as mentors, support on overall campus life from students serving as mentors, and experience-based support on more specific campus life from higher-grade students serving as mentors.

Teachers in a wide range of fields are chosen as teaching staff for students joining the Phoenix Leader Education Program, enabling cross-border teaching.

The mentor system has been established to grasp and coordinate students' academic needs comprehensively. This is in addition to the individual student support system that was already in place. The mentor system has paved the ground for students to focus on their academic studies without worries, moving the program a step closer toward attaining its intended goal.

#### [Annex for Self Study Report]

3.List of Academic Advisers

4.Mentor Handbook

5. Achievements List of Cooperation with Other Organizations

6.Members List of Phoenix Leader Education Program

# Point 2-2 Does the Program have planning, operating, and partnership-building systems appropriate for achieving its purpose?

#### [Explanation and Analyze the Situation]

In the current year, specific career paths have been shown to students. Below are specific examples during the year of students' active participation in international symposiums and other events.

The newly established Career Path Committee is designed to plan various events relating to students' career plans. One example of such events was the holding of the Phoenix Leadership Seminar. The Career Path Committee is the newest addition to existing organizations set up to design and operate various events. Leading such organizations is the Hiroshima University Graduate School Leading Program Organization, headed by the Hiroshima University President. Other organizations include the plenary session of the Phoenix Leader Education Program, the Steering Committee for the Phoenix Leader Education Program, meetings held for each course, the Steering Committee for the Hiroshima Phoenix Training Center, the Education Committee, the Evaluation Committee, the Entrance Examination Committee, the Student Life Committee, the Information Promotion Committee, the International Exchange Committee, and the Fieldwork Implementation Committee.

The biggest event under the program is an international symposium. A working group has been set up under the International Exchange Committee to ensure the smooth holding of the symposium. Four students mobilized for the symposium work together with teachers and engage in its preparatory work.

Under the mentor system, all teachers who work closely with students as mentors joined the Student Life Committee. This enables students to have their voices heard more.

In this fiscal year, Hiroshima University Graduate School will cooperate with seven companies and research institutes outside the university to sponsor short-term internship programs. Events will be also held jointly with a total of 14 outside organizations during the year, including seminars and fieldwork. Other forms of cooperation with outside institutions include facility-visit tours and screening of students' academic abilities and qualifications in entrance examination and dissertations for doctoral courses, together called the "Qualifying Examination (QE)."

Goals envisaged under the Phoenix Leader Education Program have been

steadily achieved. Among these are the holding of seminars aimed at helping students solidify their career paths, the promotion of expeditious management by working groups, and the establishment of a system enabling industry, academia and the public sector to collaborate in various manners beyond their sectorial interests. Conditions are being gradually established for attaining the goals set under the program of promoting academic fusion between the humanities and the sciences, and fostering Phoenix Leaders through cooperation between industry, academia, and the public sector.

#### [Annex for Self Study Report]

4.Mentor Handbook
5.Achievements List of Cooperation with Other Organizations
7.Members List of Career Path Committee
8.Activities List to make or enhance career paths
9.Materials of Phoenix Leadership Seminar
10Materials of Radiation Disaster Medicine Course Seminar
11.Members List of Working Group for International Symposium
12.List of Topics in Working Group for International Symposium
13.Members List of Student Life Committee
14.Report of the 2<sup>nd</sup> Short-term Fieldwork
15.List of Short-Field Visits
16.Examiners List of Qualifying Examination (QE)

### Criterion 3. Program Members and Education Supporters

Point 3-0	Does the Program have a clear policy to build an organization of faculty members? Does it clarify the responsibilities of respective members for education and research activities?	
Issue 3: Education Committee will compile a teaching handbook for all professors in order to share practical information on effective approaches to planning lectures.		

#### [Explanation and Analyze the Situation]

Teaching staff for the all students who joined the program from October 2012 to 2014, the third year since its launch, are one primary adviser and at least one co-adviser from each course (including teachers who are not in charge of the program); a total of at least four advisers assigned to each student. Teaching by these staff has been conducted in an organized manner.

The QE was conducted for students who joined the Phoenix Leader Education Program in the first year of its launch. Screening committee members who examined the students were chosen from among a wide range of people—not only teachers tasked with three courses of the program and other graduate school teachers but also program members from outside institutions such as Tohoku University and the National Institute of Radiological Sciences. These people examined the students' abilities from multiple angles, clarified the scope of responsibility to be assumed by people involved in the program, and assured the quality required for the program.

The Education Committee compiled a teaching handbook to narrow perception gaps between teachers over the program, arising from the extent of involvement by each teacher therein. The handbook spells out the program's educational concept, its purpose, curriculum maps and standards for achievement goals. Copies of the handbook were distributed to all teachers participating in the program, enabling them to share the educational stance under the program.

The scope of responsibilities to be assumed by program directors, program coordinators, course leaders, teachers in charge of classes and other members working for the program has been clarified. We have established a teaching system in which each grade of students can receive education in specialty fields and cross-border education in an integrated manner.

Outside views have been positively infused in QE, introduced to evaluate the results of teaching and maintain the quality of education at certain levels. Students' abilities have also been examined from multiple angles to assure a certain level of quality.

#### [Annex for Self Study Report]

- 3.List of Academic Advisers
- 5. Achievements List of Cooperation with Other Organizations
- 16.Examiners List of Qualifying Examination (QE)
- 17.Teaching Handbook

Point 3-@	Does the Program have faculty members capable of achieving the purpose of the Program: to foster Phoenix Leaders, Who will conduct interdisciplinary and integrated management of recovery programs in regions suffering from complex damage caused by radiation disasters?
Issue	2: Additional educational seminars will be held across a broader range of fields so that professors are given the opportunity to share their awareness and understanding of education.
lssue	4: The program will employ a full-time English lecturer to improve English education.

#### [Explanation and Analyze the Situation]

In the current year, five teachers newly participated in the program and served as primary advisers and co-advisers for students taking the Radioactivity Social Recovery Course and the Radioactivity Environmental Protection Course, and taught them English and other subjects. The five teachers were credited with improving English language education and other classes introduced under the program, and contributed to enhancing student guidance.

When new program members conduct classes for students, they will do so by referring to the teaching handbook we mentioned earlier, which enables both teachers and students to share the program's concept and purpose.

In addition, we held the fifth education seminar under the title, "Building a new system to assure graduate school education quality." The seminar opened not only to people inside Hiroshima University but also people outside the campus, attracting the interest of a large number of people involved in leading programs at other universities. Participants from outside parties discussed the education system introduced under our program and exchanged information, deepening understanding among program members regarding how to better teach students.

On English education, an Associate Professor (Special Appointment), was assigned to this program as a teacher dedicated to teaching English. The English language conventional course was reorganized into three subjects—English communication, English rhetoric and English presentations, Scientific English. Furthermore, English retreat sessions and cross-disciplinary exchange forums using English were held as part of efforts to strengthen English education. Also, English tests were given to students to measure their English proficiency on an individual basis. English education under the English teacher leadership is intended to meet the needs of each student.

Program members have been able to share the purpose of the program thanks to

the holding of the education seminars we mentioned earlier, and the compilation of the teaching handbook, also explained earlier. Fostering of Phoenix Leaders has become possible following the positive recruitment of teachers assigned to the Radioactivity Social Recovery Course and a teacher dedicated to English education. By recruiting these teachers, education serving the intended purposes has become possible.

#### [Annex for Self Study Report]

3.List of Academic Advisers
6.Members List of Phoenix Leader Education Program
18.Materials of the Fifth Education Seminar
19.Syllabuses of English Subjects
20.Report of the 3<sup>rd</sup> Retreat
21.Report of the 1<sup>st</sup> Cross Disciplinary Exchange Forum

### Criterion 4. Status of Accepting Students

Point 4-①	Does the Program have a definite policy and criteria for
	admitting students? Does the University Publicize those
	criteria?

Issue 7: A model schedule for adult graduate students will be established so that the program's support system for them specifically will be clear and understandable.

Issue 16: It is necessary to develop a broad global recruiting target.

#### [Explanation and Analyze the Situation]

An application guide is available on our website for students taking part in the program in October 2015. The guide, detailing the program's educational goals, the ideal types of students to be selected, a basic policy on the selection of students and the policy on their acceptance, has also been mailed to universities and relevant institutions both at home and abroad, as well as program members, so that they become familiarized with the content of the program.

As part of publicity activities, briefing on the coming entrance examination was held across the nation during the current year. Briefing on the program and the entrance examination was also held abroad, in Ho Chi Minh City and Hanoi, both in Vietnam, Bandung in Indonesia, Seoul in South Korea, and at an event in Taiwan promoting overseas study.

Publicity will continue to be promoted in media, with advertisements to be posted in magazines on teaching-license courses, experimental medicine and cell engineering. Other magazines posting advertisements for the program and Hiroshima University include the *Journal of Radiation Research*, *Nature PUBLISHING INDEX 2013*, and *Study International*. Publicity was also promoted at events sponsored by Web universities and Web graduate schools.

Among the students participating in the third-year program is one who has a fixed job, making the person the fifth participant in this program with such a background. Documents explaining the entrance examination for the program contain a model time schedule for accepting a person participating in the program while taking a job and who has clear vision to completion of the program, based on the past schedules of such persons. The documents are used at briefing sessions on the entrance examination, targeting prospective students with a regular job.

As explained above, this program's concept and policy have been clearly and widely disseminated both at home and abroad toward this fiscal year's entrance examination through continued publicity activities, targeting not only regular students but also people who already have jobs.

#### [Annex for Self Study Report]

22. Application Notice in FY2015

23. Application Guide for Admission in FY2015

24.Model Class Schedules for Workers

25.List of Domestic Explanation Meetings of Entrance Examination

26.List of Overseas Explanation Meetings of Entrance Examination

27.List of Journals in which Application Notice were published

28. Material of Other Public Information

# Point 4-2 Does the Program employ an appropriate system to select students according to its admission policy? Does the system function well?

#### [Explanation and Analyze the Situation]

For the selection of students taking part in the third-year program, starting in October 2014, a test under the first application was conducted in February and another test under the secondary application was conducted in July.

Both examinations were led by program directors, program coordinators and program members who would become primary advisers or co-advisers for successful students according to their wish. People from outside parties—Mitsubishi Heavy Industries and Chugoku Electric Power—also acted as examiners. Due to screening by a wide range of people with different backgrounds, entrance examinations for the program reflect the views of various sectors—the public, academic and industrial sectors.

The examination for the program is divided into two stages. The first stage—a preliminary examination—involves a presentation of documents prepared by a prospective student for the program, including a short essay through which his or her field of specialty, reasons for applying and cross-field application ability are to be evaluated. The second stage—a secondary examination—takes the form of a one-night lodging trip, featuring a person-to-person English interview, a group interview and a presentation session. The secondary examination is aimed at evaluating applicants' English language proficiency, communication skills and presentation skills. Instead of a lodging trip, a day trip was made for the second stage of the July examination because there was only one applicant. However, the content of the examination was the same to ensure rigorous examination of the applicant's qualifications.

Following the February and July examinations, a total of six students were admitted to the program in the current fiscal year, including students from Brazil, Cambodia, Vietnam and the United States. In Brazil and Vietnam, briefing sessions on entrance examinations were held. The fact that highly qualified Brazilian and Vietnamese students with strong motivation participated in the program demonstrates that our entrance examination system functions well and our publicity activities have produced the intended results.

#### [Annex for Self Study Report]

29.List of Students and Attendees to Explanation Meeting of Entrance Examination

#### Point 4-③ Does the Program have a system to verify that screening methods comply with the admissions policy? Are verification results reflected in improving the screening methods?

#### [Explanation and Analyze the Situation]

The Entrance Examination Committee checks if the situation regarding each year's acceptance of students is consistent with the program's intended purpose. Whenever problems requiring improvement are found from the check, response measures will be reflected in the following year's entrance examination and publicity activities.

In the current fiscal year, a total of six students of diverse nationalities, ages and academic backgrounds have been accepted into the program, following successful publicity activities including those in foreign countries. In applications for fiscal 2015, domestic briefing on the entrance examination is planned not only in Fukushima, Tokyo, Osaka and Fukuoka, but also in Sapporo, Sendai and Nagoya. Adding Sapporo, Sendai and Nagoya to the list of venues for briefing reflects Hiroshima University's efforts to search for highly qualified Japanese students.

Soon after the application guide for fiscal 2015 was disclosed publicly, copies were mailed to other universities, institutions and relevant organizations. As for on-the-campus publicity, posters soliciting for applications were displayed at various facilities of Hiroshima University.

Program members have taken advantage of overseas events aimed at publicizing the graduate schools of Hiroshima University. Whenever such events have been held overseas, the members used the occasions to publicize the Phoenix Leader Education Program. Program members have also used academic meetings for PR of the program, handing out pamphlets and brochures detailing how to apply for the program.

Program members have been continuing to publicize the program not only via conventional media such as magazines but also websites.

As explained above, the Entrance Examination Committee has been working on grasping the situation regarding the acceptance of students for the program. The committee is ready to take improvement measures if problems are found in the program. We will continue efforts to improve and strengthen our PR activities in search of highly qualified students.

#### [Annex for Self Study Report]

25.List of Domestic Explanation Meetings of Entrance Examination
26.List of Overseas Explanation Meetings of Entrance Examination
27.List of Journals in which Application Notice were published
28.Material of Other Public Information
30.List of Topics in Entrance Examination Committee in FY2014

## Criterion 5. Content and Means of Education

Point 5 - ① Does the Program have systematic curricula appropriate to fulfill its goal and suitable for granting academic degrees? Are the subjects to be taught well arranged in line with the purpose of the Program?			
Issue 5: By holding English retreats students will be given more opportunities to communicate and to carry out presentations in English.			
Issue 6: Students will be given more opportunities for practical international communication by increasing the chances for them to participate in overseas internships and academic conferences.			
Issue 13: Practical and diverse study and research will be employed during both the short and long term fieldwork.			
Issue 14: The diploma policy in the Phoenix Leader Education Program will be reviewed and developed.			
Issue 17: More "Electives" and short-term internships will be carried out.			

#### [Explanation and Analyze the Situation]

The policy on conferring a degree to those who have completed the Phoenix Leader Education Program, designated as a leading doctoral program by the Ministry of Education, Culture, Sports, Science and Technology, is in common with the policy on issuing a degree for "Taoyaka Program for creating a flexible, enduring, peaceful society." The degree policy for the Phoenix Leader Education Program was compiled by the Leading Program Organization Steering Committee. It was reconfirmed that the Phoenix Leader Education Program will strengthen collaboration with other Hiroshima University graduate schools regarding the conferral of a degree while establishing a screening system for the degree.

The Phoenix Leader Education Program's curriculum has been devised from the viewpoint of fostering students' abilities in three key areas: interdisciplinary abilities, management abilities, and the ability to deal with international issues.

The curriculum is based on a syllabus, which is open to students taking the program. Where each class is positioned under the entire process of the program, under what standards each student is evaluated and how important each class is under the entire process of issuing a degree are shown in the curriculum. Information on this is shared among teachers and students.

It is generally difficult for students to develop the ability to handle international

issues and management ability. However, efforts are underway to strengthen these abilities as well as interdisciplinary ability by recruiting foreign teachers dedicated to English education and by sponsoring fieldworks, internship programs and retreat events.

In the current fiscal year, the second short-term fieldwork under the program was conducted in September. Also, 11 students have been participating in internship sponsored by Mazda Motor Corporation.

In addition, more public, industrial and academic institutions have come to accept students studying under this program as interns, including Chiyoda Technol Corporation, the National Institute for Environmental Studies, Minamisoma City General Hospital, and the National Institute of Radiological Sciences.

When students attend academic meetings overseas, their travel costs can be covered by the program. This system has enabled students to build up their overseas academic experience.

A system for third-year or older senior students to take part in long-term fieldwork and internship is being established. It has been already decided that one student will work at the IAEA as an intern for about four months.

Students have been given abundant opportunities to study outside the class, including through the first Cross Disciplinary Exchange Forum held in October and an STS international conference held in November. The curriculum provided under this program is intended to foster Phoenix Leaders, a main purpose of the program.

#### [Annex for Self Study Report]

1. Materials of 1st Technical Meeting on STS

6.Members List of Phoenix Leader Education Program

14.Report of the 2<sup>nd</sup> Short-term Fieldwork

17.Teaching Handbook

19.Syllabuses of English Subjects

20.Report of the 3<sup>rd</sup> Retreat

21.Report of the 1st Cross Disciplinary Exchange Forum

31.List of Retreats

32.Outline of the 4<sup>th</sup> Retreat

33.List of Short-term Internships

34.Diploma Policy of Leading Graduate Education Program

35.By-Laws for the Completion

36.Guide for Implementation of Long-term Fieldwork

37.List of Overseas Academic Conference in which students attended FY2014

- Point 5 ② Does the Program have means to guide students of diverse backgrounds to the goal of obtaining degrees? Does the Program have means to allow students to confirm their achievement levels?
  - Issue 11: The program will establish a more accurate and prompt communication system through the expanded use of Bb9 and the Learning Portfolio System.
  - Issue 12: "Guide to the Organization of Based on the Seminars", Interdisciplinary Integrated the systems will be developed and necessary implemented so that students can write reports after actively participating in various seminars and academic conferences, and then professors will promptly evaluate their outcomes and offer advice to the students.

#### [Explanation and Analyze the Situation]

The process by which a student taking this program receives a degree is based on a degree conferral policy adopted in the current fiscal year, and is shown in various cross-field curriculums and a curriculum map.

Whether or not each student has taken program courses in accordance with his or her schedule is monitored and managed via the e-Learning Portfolio System or the Online Study Support System (Blackboard 9) under the leadership of the primary adviser, the co-adviser and the secretariat of the Phoenix Leader Education Program. These online systems are frequently checked to see if there are any problems. If any problems are found, measures to address them will be taken promptly. A briefing session is held to explain to first-year students how to use these online systems. This is to increase their convenience, and efforts are also underway to measure to what extent their studies produce the intended results.

Communication with students for the provision of necessary information is possible via these online systems. At the same time, a liaison meeting is held among graduate school students on a regular basis, enabling speedy information sharing among them.

Students can attend various seminars certified under the program. If the students submit a report on what they learn at the seminars, they can earn credits. This is part of our efforts to enable the students to acquire knowledge in fields not covered under the regular curriculum. The operation of these cross-field seminars has been revised since this fiscal year. Students have submitted a large number of reports after attending various seminars, although their eagerness to do so differs between students. These reports are currently being evaluated by teachers most familiar with the fields covered by the reports.

The process by which a degree is conferred for the entire program and a self-evaluation system by students to measure the extent of their achievement under the program have been established. The system will continue to be improved. If any problems are found there, remedial action will be taken promptly for the appropriate management and guidance.

#### [Annex for Self Study Report]

34.Diploma Policy of Leading Graduate Education Program

38.Status quo and Improvement of e-Learning Portfolio

39.List of Liaison Committees of Students

40.List of Reports of Interdisciplinary Integrated Seminars

# Point 5 - ③ Does the Program have advanced educational functions sufficient to offer high-level practical curricula?

#### [Explanation and Analyze the situation]

Students taking this program have abundant opportunities to take courses conducted outside classes in addition to regular lecture-styled classes. This is because they are required to build up cross-field knowledge and wisdom, and need to conduct studies in various advanced fields and learn about project management.

Earning credits for internship and fieldwork is mandatory for students taking this program. In addition to this, students are visiting facilities run by public, industrial and academic institutions on a voluntary basis, including the government of Minamisoma City in Fukushima Prefecture, a municipality located in the area affected by the March 2011 disaster, the Japan Atomic Energy Agency, Chugoku Electric Power Co., Inc., Shimane Nuclear Power Plant, the National Institute of Radiological Sciences, and the National Institute for Environmental Studies (Short Field Visit) . Visiting these facilities allows the students to take a first-hand look at areas affected by radiation disasters and engage in advanced studies in relevant fields.

Various seminars are held for students when necessary, including twice-yearly retreats, the Phoenix Leadership Seminar, and the Radiation Disaster Medicine Course. Experts in various fields from the public, industrial and academic sectors are invited to these seminars and hold discussions with students as well as delivering lectures to them.

When students attend overseas academic meetings, their travel costs can be covered by the program, which provides motivation for them to study hard on their own initiative.

More opportunities for students to take extra-curricular courses outside classes will be available in the future, enabling them to have more experiences in various advanced fields on a practical basis and raise their expectations that they will become Phoenix Leaders.

#### [Annex for Self Study Report]

8.Activities List to make or enhance career paths
9.Materials of Phoenix Leadership Seminar
10.Materials of Radiation Disaster Medicine Course Seminar
14.Report of the 2<sup>nd</sup> Short-term Fieldwork

#### 15.List of Short-Field Visits

- 31.List of Retreats
- 33.List of Short-term Internships
- 37.List of Overseas Academic Conference in which students attended FY2014
- 41.Attendees List of Training Courses of REAC/TS
- 42.List of Domestic Academic Conference in which students attended FY2014

Point 5 - ④ Does the Program have a mechanism to develop students' communication and negotiation abilities so as to foster active leaders who will address global challenges?

#### [Explanation and Analyze the Situation]

Our efforts to improve international communication using English under the program has been continuing under the leadership of the English teacher, Associate Professor (Special Appointment), who has been assigned to the program as an English teacher in the current fiscal year.

Courses on English have been reorganized while newly introduced standards for measuring students' English competence have been clarified. The parts of courses conducted only in Japanese came to be conducted in English. As a result, 31 out of 39 courses are currently conducted in English, compared to 26 out of 42 courses seen when the program started.

To give students more exposure to English on top of regular English classes, they are required to speak English during presentations and question-and-answer sessions at meetings held to report on their participation in common courses, short-term internship and short-term fieldworks.

Students are given opportunities to discuss with or deepen their communication with graduate school students taking leading programs at other universities and with renowned scholars and researchers studying abroad. Events held for that purpose in the current fiscal year include the first Cross Disciplinary Exchange Forum, held in October, and an STS international conference, held in November. The second short-term fieldwork under the program was held in September, drawing participants from graduate schools at other universities who are taking leading programs there.

These activities by students are to lead to successful presentations by them at an international symposium being held toward the end of the current fiscal year (February). Their international communication skills, developed in the past one year, will be demonstrated at the symposium.

As explained above, this program seeks to develop human resources who can play key roles in the world, by improving and strengthening regular curriculums and by providing participating students with greater opportunities for communication—allowing them to have discussions with a diverse range of people and make presentations in English.

#### [Annex for Self Study Report]

- 1. Materials of 1st Technical Meeting on STS
- 21.Report of Cross Disciplinary Exchange Forum
- 43.List of Language in Subjects
- 44.Handling of Evaluation of Learning Achievement in English Education
- 45.List of Report Meeting of Common Course Work FY2014
- 46.List of Report Meeting of Short-term Internship FY2014
- 47.Report of Briefing Session of 2<sup>nd</sup> Short-term Fieldwork
- 48.List of International Symposiums

# Point 5 - <sup>(5)</sup> Does the Program have appropriate syllabi in adherence with the spirit of curriculum organization and a system to use them effectively?

#### [Explanation and Analyze the Situation]

Teachers in charge of classes compile syllabuses based on teaching handbook mentioned earlier. Classes are conducted based on such syllabuses.

The syllabuses are showed how this program should be positioned in the learning goals of the program. Teachers conduct systematic classes orderly while always keeping in mind the overall concept and philosophy of the program.

Students can access these syllabuses through the website "Momiji," set up for Hiroshima University students. Before each semester begins, students taking the program work out their class schedules based on the syllabuses.

These syllabuses are prepared in both Japanese and English, and are used effectively by students and teachers alike.

#### [Annex for Self Study Report]

17.Teaching Handbook

# Point 5 - 6 Is the Program organized with due consideration given to students' autonomy and students who take courses outside their own fields?

#### [Explanation and Analyze the Situation]

The curriculum prepared in this program, crossing over various fields, calls for students to earn many credits not related to their majors,. In view of the need to develop abilities to flexibly cope with complex multiple tasks associated with recovery from radiation disasters, students need to complete rudimentary studies in all fields covered by the three courses by their third year, when their studies for their doctoral theses begin. About learning other fields, firstly, early training on the spot of Great East Japan Earthquake has been implemented as a class and condition of student's active learning to share clearly the necessary of it.

After their third year starts after they pass the QE, students efficiently wrap up reports on long-term fieldwork and long-term internship to secure enough time to devote themselves to the research activities related to their doctoral theses.

The mentor system mentioned earlier takes into consideration difficulties possibly experienced by students taking courses not covered by their majors. Specifically, such students can receive advice on their studies and research not only from primary advisers or co-advisers but also from teachers designated as mentors in various fields.

Consequently, students in this program can focus on writing their doctoral theses in the third year or later based on the cross-field knowledge they have accumulated in the previous two years, which they have gained through passing the QE. If they need advice while writing their doctoral theses, they can turn to teachers designated as mentors, a system within which students can study beyond their specialties.

#### [Annex for Self Study Report]

4.Mentor Handbook

- 35.By-Laws for the Completion
- 49.Materials about Revision of Appended Tables in By Laws for the Completion related to Long-term Fieldwork/Internship

Point 5 - 7	Does the Program have and use appropriate means of				
	education for adult students in remote locations, etc.,				
	such as conducting classes using printed learnin				
	material (including corrections by mail), broadcasting				
	classes, interview classes (including face-to-face				
	classes), and classes using IT media?				

Issue 8: In order to stabilize and improve students' studying in the program, a remote support system, which includes both a remote lecture system and a videoconference system among other things, will be systematically implemented.

#### [Explanation and Analyze the Situation]

The program has established a system for supporting students who have to continue working remotely while attending classes in the program.

The person hailing from Tokyo takes classes mainly at the Tokyo office of Hiroshima University. Some classes including English classes are conducted by a part-time teacher, while other classes are remotely conducted using two-way telecommunications equipment linking Tokyo and Hiroshima.

Remotely controlled classes use a teleconference system transmitting voices and visual images between Hiroshima University's two main campuses—the Higashi Hiroshima Campus and the Kasumi Campus—and institutions forming partnerships with the university—Fukushima University, Tohoku University and the National Institute of Radiological Sciences. Learning environment developed in 2012 for the program employs a document camera to remotely handle written examinations given to students studying in different places.

Teaching remotely located students under the two-way class system takes advantage of study content services offered. Using this study support system, preparation for and review of the classes are possible for students.

Students remotely taking classes under the program can receive appropriate support thanks to the use of specially developed telecommunication equipment. Teachers also support students by responding to their homework, checking their answers and answering their questions—all via e-mail. As a result, student who learned remote class, passed QE.

In this program, teaching method for students who is working in remote continuously realized, and proper guide is implemented.

#### [Annex for Self Study Report]

50.Machines List for Remote Support System

## Criterion 6. Outcomes of Education

#### Point 6 - ① Does the Program have an appropriate system to evaluate students' achievement levels in terms of their academic performances and credentials, as well as their progress toward the goal of developing abilities required for Phoenix Leaders?

#### [Explanation and Analyze the Situation]

In this program, learning goals are shown to student, and have the system of achievement evaluation based on student's learning results. Student's results of classes or report accumulate in online learning support system (Blackboard 9 (Bb9)), research activity and results of learning opportunity out of campus in learning e-portfolio system.

These results have a role of reason of grade evaluation in each subject, and results of interdisciplinary subjects that is internship, fieldwork, common coursework, are able to evaluate from program members without class teacher, and become evidence of achievement evaluation for learning goals of the program. And "Integrated Interdisciplinary Seminars" that approve credit for a certain degree of results based on confirmation of results of personal learning opportunity that is attendance to academic conference, are implemented by system of evaluation by all program members.

QE based on continuous evaluation of those learning results, was implemented for first students. And they passed it by paper examination about coursework, oral examination by English about research work, confirmation of learning results by learning e-portfolio, and evaluation of achievement to learning goals.

The achievement for learning goals are exactly considered and evaluated by QE and various evaluation systems.

#### [Annex for Self Study Report]

16.Examiners List of Qualifying Examination (QE)

17.Teaching Handbook

38.Status quo and Improvement of e-Learning Portfolio

40.List of Reports of Interdisciplinary Integrated Seminars

- Point 6 2 From an analysis of the results of hearing students' opinions, including questionnaires, can it be concluded that the Program has produced favorable educational outcomes?
  - Issue 9: Adding to the questionnaires on class-evaluation, the program will implement additional questionnaires for all educational events.
  - Issue 10: The program will create a system that more accurately reflects students' opinions by having the students who are committee members also participate in the evaluation committee.

#### [Explanation and Analyze the Situation]

Regular classes offered under the program are evaluated by students taking them in a survey. Also subject to evaluation in the survey are outside-of-class courses such as short-term fieldwork, retreats and short field visits. If problems or room for improvement are found, feedback measures will be taken so that they will be solved before similar events are held the following time.

Students' evaluation of the program has been generally favorable. However, efforts are underway to respond to their dissatisfaction concerning small points, which are not shown numerically but in individual comments.

Students have the opportunity to express their views and opinions in a forum they hold with teachers to exchange views. Such forums have been held from FY2013. Adjust of student's schedule for consideration to students traffic course, and guidance of Japanese tax system were held, and these efforts connect to detailed support for student's needs. Students have generally given high marks to the program's system to support their studies and research. This kind of forum will continue to be held twice a year in the future.

In the current year, three students serving as senior mentors plan to join an outside evaluation committee in which they will express opinions from the viewpoint of students. Students' views and opinions will continue to be reflected in the program in the future. At the same time, we will build a system for remedying problems found that require improvement.

As mentioned above, opinions given by students through surveys, forums and Evaluation Committee meetings will be reflected in the program in order to develop and improve it further.

### [Annex for Self Study Report]

51.Report of the 2<sup>nd</sup> Faculty and Students Opinion Exchange Meetings

52.List of Results of Questionnaire about Short-term Fieldwork

53.List of Results of Questionnaire about Retreats

54.List of Results of Questionnaire about Short Field Visits

55.Members List of Evaluation Committee

### Criterion 7. Student Support Systems

Point 7-① Does the Program offer an ideal environment where excellent students can inspire and compete with each other?

Issue 18: More opportunities will be given to students to lead activities at events such as international symposiums.

#### [Explanation and Analyze the Situation]

Three years into the admission of the first students and the effective start of the program, opportunities for discussion and presentations have likely increased for students. Training to improve their debating and discussion skills in English has continued through regular classes in the program, including English courses. Efforts to improve students' presentation skills have also continued through the meetings for reporting of internship, fieldwork and common coursework.

This fiscal year's short-term fieldwork was held in September and the first Cross Disciplinary Exchange Forum in October. Both were attended by graduate school students working on leading programs at other universities. At these events, Hiroshima university students and graduate school students at other universities held discussions and worked together on presentations.

Students plan to deliver presentations at this year's international symposium to be held in February, the fourth of its kind, marking the culmination of their work over the past year.

The forthcoming international symposium will mainly be managed by a Working Group led by students. Four students serving as committee members are mostly working on the compilation of a program, schedule management, the invitation of lecturers, the release of a poster, and the announcement of research results by individual researchers.

As mentioned earlier, Hiroshima University students are able to cooperate with students of other universities on the program, supporting and stimulating each other through the international symposium and other events.

#### [Annex for Self Study Report]

11.Members List of Working Group for International Symposium
12.List of Topics in Working Group for International Symposium
20.Report of the 3<sup>rd</sup> Retreat

45.List of Report Meeting of Common Course Work FY2014
46.List of Report Meeting of Short-term Internship FY2014
47.Report of Briefing Session of 2<sup>nd</sup> Short-term Fieldwork

#### Point 7-2 Does the Program offer financial support to students to enable them to concentrate their efforts and time on studies and research activities?

#### [Explanation and Analyze the Situation]

Under this program, students receive various forms of financial support to help their studies. In addition to \$200,000 in monthly grant money, they can use dormitories built exclusively for students as residences and use notebook PCs on a rental basis. When students attend academic meetings held in Japan or abroad, their travel costs are covered under the program. All these measures are intended to enable students to focus on their studies and research by eliminating their economic concerns.

Study rooms are set up on the Higashi Hiroshima campus and the Kasumi campus for graduate school students studying in this program. Of the two study rooms, the one on the Higashi Hiroshima campus has been moved to a wider space in the campus since it was previously too small. The new room is more functional with upgraded facilities, allowing students to use it freely and ensuring it meets their various academic needs, including using it as a private-study room or for meetings of a study group called the Journal Club.

Students can receive support not only on the academic front but also on solving troubles and problems related to their livelihoods through various systems incorporated into the program, including a forum between students and teachers, and the mentor system. One example is receiving advice on the filing of tax returns and other tax-related issues faced by foreign students. A set of guidelines has been compiled dealing with such matters.

The teacher-student forum and the mentor system are instrumental in quickly detecting a range of livelihood-related demands and problems faced by students—from problems they face when they start their new academic lives to various problems arising as their studies advance—and providing solutions to them. Thanks to these support systems, students can devote themselves to their research activities.

#### [Annex for Self Study Report]

4.Mentor Handbook

- 51.Report of the 2<sup>nd</sup> Faculty and Students Opinion Exchange Meetings
- 56. About the use of "the students room (Higashi Hiroshima campus)"
- 57.List of Journal Club of Students

58.Income taxes, residential taxes and National Health Insurance premiums related to subsidies

# Point 7-③ Does the Program support students in preparing and carrying out their autonomous and original research plans?

#### [Explanation and Analyze the Situation]

Program has support system to foster to progress student's research for giving originality to their research.

Financial aid provided under the program to support students' research activities covers various costs for writing a doctoral thesis—travel costs for research trips, and purchase of research equipment and books. Students who have passed the QE are eligible to receive aid of up to ¥500,000 for each semester. Students applying for the aid must present a detailed research plan and estimated research costs at the beginning of each semester. The plan must be approved by the teachers in charge of the program. The aid is disbursed after final approval is given by the President of Hiroshima University.

Under the aid plan, research plans are subject to rigorous self-screening by students and strict evaluation by teachers at the beginning of each semester. This system makes the provision of strong financial support for research activities compatible with meticulously planned guidance of the activities. Under the proper guidance of teachers, students participating in the program are given much greater leeway in pursuing their academic goals.

#### [Annex for Self Study Report]

- 37.List of Overseas Academic Conference in which students attended FY2014
- 42.List of Domestic Academic Conference in which students attended FY2014
- 49.Materials about Revision of Appended Tables in By Laws for the Completion related to Long-term Fieldwork/Internship
- 59.List of Research Subjects of 3rd year Students
- 60.Guide to Research Grant (extract)

### Criterion 8. Facilities and Equipment

Point: Does the University have facilities and equipment sufficient for educational and research activities of the Program, and suitable for providing the curriculums?

> Issue 15: Plans for the future of the Phoenix Leader Education Program will be drawn.

#### [Explanation and Analyze the Situation]

The Hiroshima Phoenix Training Center for acquiring knowledge and

technique relate to recovery from radiation disaster. is already in operation under the Phoenix Leader Education Program. The center is equipped with cutting-edge radiation-measuring devices, including whole-body counters—both compact types and those for precise measurement—low-background Ge detectors, whole-body decontamination tanks, image analyzers, high-volume air samplers, and GM/NaI survey meters. These devices are used in classes for Common Course Work subjects, such as "evaluation of radiation and decontamination" training, "initial radiation, internal radiation and epidemiology" seminars, "screening of radioactive substances and decontamination" seminars, and "radiation-measuring" seminars. Students can learn about the use of these devices in an environmental setting similar to a real situation.

All students are registered as radiation workers before they handle radioactive substances using devices and facilities installed at the training center. By receiving mandatory education and training, students learn about the safety required for handling radioactive substances.

The student room prepared for provision of environment of academic learning can be used always. Students can use the expanded study rooms mentioned earlier, reserved for program students, for discussion.

This program is likely to continue even after its government support period expires. The Ministry of Education, Culture, Sports, Science and Technology is considering various options after the current support ends, including transforming the program into a new graduate school. The best way of realizing this is currently under consideration.

The ongoing plan to revise the program's organizational structure and expand the relevant facilities reflects its likely operation beyond the scheduled end of the government support.

#### [Annex for Self Study Report]

56. About the use of "the students room (Higashi Hiroshima campus)"

- 61.Handling of Registration of Radiation-related Worker
- 62.Future Plan

#### Criterion 9. System for Quality Enhancement and Improvement of Education

# Point: Does the Program have an appropriate system to evaluate its implementation processes?

#### [Explanation and Analyze the Situation]

The performance of the program is evaluated by the Evaluation Committee, set up within the program, and the External Evaluation Committee, set up outside the program, which consists of outside experts. In the current year, three students were newly added to a list of Evaluation Committee members, which was helpful in establishing a mechanism for reflecting the opinions of graduate school students in the program. This fiscal year's activities in the program will be reviewed according to nine standards. Based on the review, a self-evaluation report will be compiled and submitted to the External Evaluation Committee for discussion and evaluation.

Evaluation of the program and comments on it by the External Evaluation Committee will be translated into an evaluation report, and it become very important material for improvement of the program.

In light of the evaluation process explained above—compilation of a self-evaluation report, a checking system by the External Evaluation Committee, and disclosure of the evaluation report—it can be said that the program has been evaluated appropriately regarding its implementation, and response measures have been taken appropriately whenever necessary. The addition of new students to the Evaluation Committee has been effective in better reflecting multiple-angled views and opinions in the program.

Furthermore, in order to respond expeditiously to twice-yearly guidance and advice provided by program officers of the Graduate School Doctoral Course Leading Program Committee (Japan Society for the Promotion of Science), the Evaluation Committee and the Steering Committee have been made functional.

#### [Annex for Self Study Report]

55.Members List of Evaluation Committee63.Members List of External Evaluation Committee64.Tasks of Program Officer (extract)

## Conclusion

We celebrated the second anniversary of the Leading Program in October 2013, and we are proud that the second Evaluation Committee has now convened. This time, we take back self-evaluation in compliance with the criteria for the accreditation of university educational programs, we asked each member of the External Evaluation Committee to fully evaluate the Program's total status in this year, with a focus on the points for which improvement was indicated and the items receiving a low evaluation in last year's evaluation.

Although the Program is still under development, in this academic year we promoted a wide variety of practical activities, such as short-term internship, short-term fieldwork, short field visits, and retreat programs, and Qualifying examination for second year students to be promoted to third year which we believe have helped students develop themselves considerably.

We would like to conclude by indicating that the fact that the External Evaluation Committee again convened successfully this academic year is largely due to the excellent work of the faculty members, researchers, education & research promotion staff, and administrative staff who made this a reality.

The Evaluation Committee would like to express its sincere gratitude to them for their generous cooperation.

**Evaluation Committee**,

#### Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster, Hiroshima University Graduate Schools

Post	Name	Affiliation	Responsibility in Program
Executive and Vice President	Tetsuji Okamoto	Community Relations, Public Relations and Academic Information	Program Director Radiation Disaster Medicine Course
Vice President	Kenji Kamiya	Support of Recovery from Disaster, Medicine for Radiation Exposure	Program Coordinator Radiation Disaster Medicine Course
Professor	Masao Kobayashi	Graduate School of Biomedical & Health Science	Radiation Disaster Medicine Course
Professor	Makoto Iwanaga	Graduate School of Integrated Arts and Science	Radioactivity Social Recovery Course
Professor (Special Appointment)	Shoken Miyama	President Room	Radioactivity Environmental Protection Course
Student	Uranchimeg Tdegmed	Graduate School of Biomedical & Health Sciences	Radiation Disaster Medicine Course SENPAI Mentor
Student	Momo Takada	Graduate School of Integrated Arts and Sciences	Radioactivity Environmental Protection Course
Student	Mariko Komatsu	Graduate School of Integrated Arts and Sciences	Radioactivity Social Recovery Course SENPAI Mentor

#### **Member of Evaluation Committee**

[Inquiries]

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