MEXT Project 2011 Leading Program in Doctoral Education

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

–External Evaluation Report–
2013.4

–Hiroshima University–

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I. Overview

***To protect personal information and ensure fair evaluation, each external evaluation committee member is indicated anonymously by assignment of a letter of the alphabet.**

1. Notably exceptional aspects are as follows.

Member A: Educating leaders with a wide scope of knowledge in the subject area covered by Renaissance from Radiation Disasters is not a role conventionally borne by universities; it may prove to be a difficult feat, but it is nonetheless a worthy endeavor, and for this, I evaluate this program highly.
Member B: For Japan, which has experienced the two nuclear (radiation) disasters of the atomic bomb and the Fukushima nuclear power plant accident, fostering human resources in the field of radiation disaster is a pressing matter. It is also a globally important issue for the future of the international community. I find it highly admirable that such a program has been developed, is acquiring promising graduate students through its selection processes in February and July, and is showing steady and positive results.
Member C: Since the focus of Renaissance from Radiation Disasters is on the development of human resources, the expectation for this program from Japanese society is quite high, and its goals are receiving a high evaluation. The specific educational content is interdisciplinary, incorporating elements necessary in cultivating leaders equipped with a panoramic perspective that can succeed globally in all areas of government, industry and academia. Active utilization of fieldwork and internships is in particular expected to play a large role in cultivating human resources that can make a great contribution to social development in a direct manner. Also, every element from student selection to facilities and equipment meticulously reflects the concept of Renaissance from Radiation Disasters.
Member D: The main cause of anxiety and confusion during the Fukushima nuclear plant accident was the lack of accurate knowledge and understanding regarding radiation that should have been shared among the general public, the government and the administration bodies, which caused delay in implementing countermeasures. On the other hand, peaceful use of radiation and nuclear energy is certain to increase globally, and cultivation of human resources that can manage critical situations in the event of a nuclear disaster (by appropriately assessing and handling the situation) is a pressing matter. This program is based on a timely theme, and the content is adequate for achieving its goal of cultivating human resources that have broad knowledge, a panoramic perspective, creativity, and the ability to succeed on a global level.
Member E: The actual formal recognition by Hiroshima University of the need for such a PhD program is in itself unique, exceptional and appropriate since there is now, and will be, a great need for leaders who are trained in both the scientific and social aspects of radiation disaster management. And, the unfortunate experiences of radiation disasters in the cities of Hiroshima,

Nagasaki, Tokaimura, and Fukushima make the location of this program at Hiroshima University an appropriate world symbol that such a PhD curriculum is important and necessary.

Member F：Overall, the program is well structured and mechanisms accompanying its implementation are well suited to meet the objectives. It is remarkable that this has been achieved in a short period of time and all those responsible of the Program and all those involved in its development should be congratulated for this achievement.
The students benefit of an environment and of working conditions exceptionally favorable and all parameters are met for a successful development of the Program in the coming years.

Member G：

a. STS approach

Observation: To the best of our knowledge, this is first doctoral program in *"radiation disaster studies"* in the world. We acknowledge the receptiveness of including STS approach into the program.

Recommendation: The Program shall continue to implement the STS approach within the 3 courses. The STS dimension shall be even more prominent in the course on "social recovery".

b. Effective Curriculum

Observation: The commitment to developing a student-centered curriculum is an astute choice to strengthen courses related to an emerging academic discipline.

Recommendation: The Program shall continue to use curriculum mapping for strengthening the student-centered learning.

c. Maintaining the existing high team spirit

Observation: We applause the commitment and sense of teamwork of all levels of the program management. This is fundamental to success.

Recommendation: The Program shall maintain this commitment by creating some regular and informal social gatherings to offer opportunities for students to interact with the Management and faculty members.

d. Effective Senior management team:

Observation: With the strong determination of the senior management team, we believe the Program shall be able to produce graduates with comprehensive academic background and competencies to address global radiation disaster issues.

Recommendation: The Program shall continue to carry out current efforts while considering an option to recruit fulltime staff members as stated in sub-section 2-e below.

Member H：

- Exceptionally well conceived idea in putting together a training program for leaders in radiation disaster management. This is particularly important in the post Fukushima era where there is increasing unease and mistrust among the public on the safety of nuclear power industry and on the safe application of radiation in general.
- The overall organizational structure of the program is well designed and provides an important venue of introducing social science in the training curriculum.

- Outstanding institutional support in the establishment of the degree program and exceptionally strong leadership of the program director, program coordination and leaders of the various courses and faculty of the various programs.
- The proposed field work in the curriculum provides students with a practical, hands-on learning experience.
- A built-in double evaluation system is in place to assure a critical and thorough review of the progress made during the academic year.
- An unparallel and superb student support structure is in place.

2. Aspects requiring improvement are as follows.

Member A: Students learning here are expected to acquire knowledge in a wide range of fields. On the other hand, I feel that young researchers must have confidence as specialists in a certain field in order to fulfill a leadership role. This is a difficult challenge, but instructors in the program must make an effort to enable students to acquire knowledge in a wide range of fields as well as to delve deep into one field in order to become specialists, and the program should be designed to allow such a learning environment.

Member B: Just as important as the special considerations given to the treatment of graduate students is the treatment of instructors, particularly those from outside the university.

Member C: Compared to providing education that fosters a panoramic perspective, fostering creativity may prove to be difficult when considering the characteristics of this field. To this end, the education must include not only radiation disaster issues and fostering international communication skills, but also efforts to deepen student understanding on general medical issues and the social problems associated with radiation disasters. Since this is an interdisciplinary undertaking, creativity is also required in finding ways to improve the abilities of the instructors.

Member D: The mechanism and system of the program developed by the university seems to have been thoroughly prepared and established, but I would like to see curriculum and tools that would foster abilities (such as leadership), to enable the graduates to succeed within organizations in actual society. The key is to constantly make improvements while deliberating perspectives on Fukushima in the future.

Member E: The goal of producing skilled and effective leaders in this particular educational endeavor is a real challenge because the integration of technical knowledge and social knowledge is always complex; and, it will require a much broader curriculum that is usual for PhD programs. But, such a broad curriculum may cause the student to have a serious lack of focus and thereby detract from the achievement of excellence.. Accordingly, it may be some benefit in helping the student to focus more on their particular interests and aptitudes. In many US PhD programs, this focus is improved, I think, by creating MAJOR and MINOR components of the PhD curriculum.

Member F : The two points to improve short-term are on one hand, the promotion of the Program at the international Program to recruit students from all over the world in order to re-enforce its universal character, and the other hand, to re-enforce within the curriculum subjects related to the human dimension of radiation disasters. The experience of the past shows that this dimension is just as important as the technical dimension and can continue for very long period of time after a disaster.

Member G :

a. International degree (PhD) branding

Observation: This PhD has no name specific name yet.

Recommendation: It is of outmost importance and urgent to adopt an explicit name for the PhD not only to facilitate international branding, but also to award a degree, which name reflects the competencies of the graduates. The biggest challenge for an academic emerging discipline is its recognition within the job market. Therefore, an explicit name that reflects the competencies of

the graduate is a must.

Because the Article 2 of the Program mandate already states the discipline as "Radiation Disaster Recovery Studies", it is logical to name this degree: *"PhD in Radiation Disaster Studies"*.

b. Effective teaching and learning

Observation: Methodologies of teaching and student assessment were not specified in the curriculum map.

Recommendation: The Program shall offer various teaching methodologies beyond traditional lectures in order to provide students with skills and competencies required by the specifications of the program. These teaching methods shall include seminars and practicum using case studies.

c. Field visit and internship

Observation: In the current self-study reports related to "field work" (they should rather be called field visit because of the short duration), only safety rules and regulations, and radiation protection measures as well are mentioned. The educational role and purpose of the field visit and intern ship have not been clearly established. No learning outcomes have been stated.

Recommendation: The Program and future host institutions shall consistently communicate the educational purposes and learning outcomes to explicitly encourage experiential learning, reflective practice, and leadership skill development. As a practical activity, each student shall write down their insightful observation and reflection in a standardized logbook. A description of the logbook can be found at http://edis.ifas.ufl.edu/pdffiles/wc/wc05400.pdf

d. Needs for more Social scientists

Observation: We are pleased to learn that the Program already values the contribution from social scientists, especially in its social recovery course.

However, only two social scientists are listed among the 47 faculty members.

Recommendation: The University shall make every effort to recruit more faculty members from the social science and humanities in order to support the vision, mission and goals of the program.

e. Needs for fulltime staff members

Observation: Current program director, program coordinator, and other supporting staff members of the Program are very committed, but there is not any fulltime staff member dedicated to operationalizing the day-to-day activities.

Recommendation: In order to guarantee an effective and sustainable implementation of the curriculum, the University shall recruit full time senior manager to assist the current Program manager and Program coordinator. At least one full time "implementer" is needed at the initial stage of the implementation. As the program will grow to 40 students in the 3 years, the increasing number of students will require more human resources.

The Program shall recruit at least a fulltime implementer and a fulltime assistant to the implementer. For this proposed action, there are two major reasons. First, the new fulltime staff members can focus on daily operation, planning, and policy. Second, the staff members can sustain implementation of the Program.

Member H：

- The Ph.D. diploma needs a specialty to be convincing and in successful marketing of the program, perhaps Ph.D. in Radiation Disaster Management or Radiation Disaster Recovery Studies.
- Advertisement for the degree program should be posted in high impact, multidisciplinary journals such as *Nature*, *Science* and posted in web sites such as the Radiation Research Society and the Japanese Radiation Research Society for wider and targeted audience, respectively.

3. Other aspects for which future improvement is desirable are as follows.

Member C: I hope many individuals with a good grounding in social sciences will be graduating from this program, but the big challenge is how to teach the natural sciences and their relationship to radiation disasters when educating such students. What is important is to have students understand radiation biology and environmental radiology from a broad perspective, and to this end, detailed evaluation of the curriculum will be necessary.

Member E: Some practical experience with "hands on experience" in the triage and management of populations of people who are contaminated and exposed to radioactive materials, I suggest, should be required for all students—certainly for medical professionals where a more rigorous training is needed since they may well be called to perform and supervise such activities in a crisis environment. But, this practical training should also be required of the non-medical profession students, since it is important that leaders at all levels and in all aspects of radiation disaster management understand the basic issues in the management of contaminated and exposed populations (since all types of logistics and resources are needed in such incidents).
There are several ways this type of "hands on training "can be achieved. For example, Hiroshima University, NIRS and Fukushima University all have the resources and experienced people to create an excellent training program of this type. Also, we at REAC/TS routinely provides such one week training courses worldwide and at REAC/TS (Oak Ridge, TN,USA)-- and all the Hiroshima University students are ,of course, always welcome to attend these REAC/TS courses.

Member F : It would be desirable in the near future to strengthen the cooperation with the University of Fukushima to ensure direct access to students to a large variety of technical, social and economic fieldworks in connection with the local actors of the Fukushima Prefecture.
It would also be desirable to develop field visits in the territories having been affected in the past worldwide by radiation disasters as well as partnerships with organizations (universities, experts bodies, administrations, …) in Japan and abroad having a direct experience with the management of such disasters.
Finally, it could be envisaged to take advantage of the Annual Symposiums to provide an opportunity for members of the External Evaluation Committee to evaluate the performance of the Program directly in interaction with students through interviews and also working sessions on the key topics structuring Program.

Member G :

a. Science communication and English

Observation: The Program already offers English proficiency and communication classes to the students.

Recommendation: One cannot become a global leader without a complete mastering of English. The Program shall take a step further by formally introducing "science communication" classes to the students, run by professional "science communicators" teachers. This kind of class will allow the students to learn how to communicate effectively with non-scientists like policy-makers, the various publics and other stake-holders.

b. Personalized orientation program and mentoring

Observation: Hiroshima University already has an orientation program.

Recommendation: To strengthen future implementation, the Program shall consider personalizing an orientation program to further meet the student needs. As a practical activity, the Program can develop a "senior-junior peer mentorship" that will allow the current students in the Program to orient the incoming students.

c. Curriculum mapping

Observation: We recognize the educational values of e-portfolio and curriculum mapping that has been established. However, the current curriculum map does include learning objectives and relevant lectures. However, other teaching methods beyond lectures (seminars, practicum, laboratories work) are not mentioned. Student evaluation and assessment methods are also missing.

Recommendation: The missing parts of the curriculum mentioned above shall be addressed in order to ensure an effective implementation of Program. The Program shall then consider establishing an institutionalized curriculum mapping framework that includes educational principles and implementation strategies.

Member H :

- As the program progresses and matures, some well defined yardsticks of student achievements should be incorporated into the overall program assessment.

II Evaluation by criteria

※ The evaluation scores are calculated based on selection by each committee member with assignment of points as follows: 4 points for "satisfied," 3 points for "mostly satisfied," 2 points for "requires partial improvement," and 1 point for "requires major improvement."

※ Final evaluation is indicated by placing a check mark in the box next to the appropriate evaluation, with an average score of 0 to less than 1.5 being "requires major improvement," 1.5 to less than 2.5 being "requires partial improvement," 2.5 to less than 3.5 being " mostly satisfied," and 3.5 and higher being "satisfied."

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Criterion 1 is satisfied

☐ Criterion 1 is mostly satisfied

☐ Criterion 1 requires partial improvement

☐ Criterion 1 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	4	3	4	4	4	3.88

[Comments]

Member A: Recovery of the TEPCO Fukushima Daiichi Nuclear Power Plant is a massive and long-term undertaking, and a program to educate leaders for this purpose is very timely.
Member C: I fully understand how education to foster human resources that can manage situations in an interdisciplinary and comprehensive manner can equip the students with a panoramic perspective, but I find that the methods to reinforce creativity tend to be on the weak side.
Member D: The program comprises a variety of academic fields including medicine, engineering and the social sciences, incorporates courses organized by external research organizations, and features hands-on activities such as domestic and international internships and fieldwork. Such content is appropriate in fostering leaders equipped with broad knowledge, sound judgment and active dynamism who can achieve global success, and matches the goals of the Program for Leading Graduate Schools by MEXT.
Member F : Past experience has demonstrated that nuclear and radiation disasters are complex situations involving many interrelated scientific and human dimensions. The effective management of such situations requires experts in the academic, industrial and governmental spheres with solid interdisciplinary training and capability to rapidly understand issues at stake and make decisions. The Phoenix Leader Education Program is structured to meet these challenges and as such responds perfectly well to the objectives of the Program supported by MEXT.
Member G : Please refer to our suggestion as aforementioned in sub-section 1-d of the Overview section.
Member H : • A wonderfully conceived degree-granting program that is based on actual societal need in a post-Fukushima era. • The program has broad institutional support. Criterion I is satisfied as the program is already in place and students have begun their classes.

Criterion 2: Implementation Structure

Point 2-①: Does the Program have guidance and student-support systems appropriate for achieving its purpose?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 2-① is satisfied

☐ Point 2-① is mostly satisfied

☐ Point 2-① requires partial improvement

☐ Point 2-① requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	4	4	4	4	4	4

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

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 2-② is satisfied

☐ Point 2-② is mostly satisfied

☐ Point 2-② requires partial improvement

☐ Point 2-② requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	4	3	4	3	4	4	3.63

Criterion 2: Implementation Structure

Overall evaluation

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Criterion 2 is satisfied

☐ Criterion 2 is mostly satisfied

☐ Criterion 2 requires partial improvement

☐ Criterion 2 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	4	3	4	4	4	4	3.75

[Comments]

Member A: The instructing faculty team comprises one principal instructor and two or more supporting instructors, which seems sufficient. However, what is necessary is to ensure ample communication among the team members; I hope they will not be solely dependent on LEP.
The Industry-Academia Consortium is an important organization that would help gain understanding from the industrial world regarding the significance of cultivating leaders, and is currently said to be in the planning stage, but its establishment needs to be accelerated.

Member C: In the operation of the program, it is good that there are a number of committees established to serve different roles, but when considering the burden on the faculty members, it may be a good idea to consolidate some of the committees or utilize existing organizations in order to improve operational efficiency.

Member D: It is said that establishment of the Government-Industry-Academia Consortium is currently in the planning stage. I recommend including as members corporations that deal with radiation as well as regions/municipalities/medical institutions currently facing on-site radiation issues, in order to incorporate more on-site and practical content into classes to balance out the trend towards pure academic study within the university.
I hear that universities in general are not too strong at interdisciplinary collaboration among different academic fields such as medicine, engineering and pedagogy, but this program is making efforts to strengthen such horizontal collaboration through operation meetings headed by the persons in charge of the program. I have great hopes for the future operation of the program.

Member F : The structure of "Leading Program Organization" responds well to both the concern to put in place an effective organization of studies to meet the challenge of interdisciplinarity and also the concern to provide appropriate guidance and support to students through a set of ad hoc committees. The establishment of a system of partnerships with expert bodies, industries and government agencies with an experience in nuclear and radiation emergency and recovery preparedness and management is important to complete the organization in order to offer to provide a wide range of internships opportunities to students. It is expected that the planned “Industry-Academia-Government Collaborative Consortium”, will be established as soon as possible.

Member G : Please refer to our suggestion as aforementioned in sub-section 3-b of the Overview section.

Member H :

- A well defined organizational structure is in place to provide guidance and support system for students that include both science and social science fields.
- A noticeable strength of the training program is the availability of field work for students to acquire hands-on experience.
- Multiple academic advisors with expertise in both science and cultural areas are paired up with each student to provide guidance in all aspects of the training program.

Criterion 3: Program Members and Education Supporters

Point 3-①: 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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 3-① is satisfied

☐ Point 3-① is mostly satisfied

☐ Point 3-① requires partial improvement

☐ Point 3-① requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	4	3	4	4	4	3.88

Point 3-②: 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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☐ Point 3-② is satisfied

☑ Point 3-② is mostly satisfied

☐ Point 3-② requires partial improvement

☐ Point 3-② requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	4	4	3	4	2	3	3.38

Criterion 3: Program Members and Education Supporters

Overall evaluation

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☐ Criterion 3 is satisfied

☑ Criterion 3 is mostly satisfied

☐ Criterion 3 requires partial improvement

☐ Criterion 3 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	2	3	4	4	3	4	2	4	3.25

[Comments]

Member A: When students move toward an important goal, such as becoming leaders of the future, they may feel anxiety from time to time due to pressure; mental health support for such cases is not mentioned. Something must be indicated, whether this aspect will be dealt with by Hiroshima University as a whole or by other means.

Member C: Very satisfactory faculty organization.

Member D: This program is related to recovery from radiation disasters, and since equipping students with practical skills to be utilized on-site is the main goal of the education, I see that the program has been designed cleverly, as seen in the incorporation of fieldwork. For in-school teaching, how about including in the faculty people from corporations that deal with radiation as well as from regions/municipalities/medical institutions currently facing on-site radiation issues so as to incorporate education that is more site-focused and practical instead of placing too much emphasis on academic content by the school, research institutions, etc.?

Member G：Please refer to our suggestion as aforementioned in sub-section 2-d of the Overview section.

Member H：

- The training program has a strong leadership team in place to provide the necessary coordination and management of the Phoenix Leadership program.
- A cohort of senior faculty members in a diverse specialty courses are recruited into the program to provide the mentoring task of the program.
- The expertise of the individual faculty should be provided for a better assessment of the overall coverage of the program.

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 4-① is satisfied

☐ Point 4-① is mostly satisfied

☐ Point 4-① requires partial improvement

☐ Point 4-① requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	4	4	3	4	4	3	3.63

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

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 4-② is satisfied

☐ Point 4-② is mostly satisfied

☐ Point 4-② requires partial improvement

☐ Point 4-② requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	4	4	2	4	4	3.75

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 4-③ is satisfied

☐ Point 4-③ is mostly satisfied

☐ Point 4-③ requires partial improvement

☐ Point 4-③ requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	4	4	4	4	4	4

Criterion 4: Status of Accepting Students
Overall evaluation

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Criterion 4 is satisfied

☐ Criterion 4 is mostly satisfied

☐ Criterion 4 requires partial improvement

☐ Criterion 4 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	4	4	4	4	4	4	3.88

[Comments]

Member A: Efforts should be made to publicize the fact that many organizations support this program by asking collaborating universities and organizations to set up links to this program on their websites.
Member C: Selection of students is conducted based on a very clear-cut admissions policy.
Member D: Use of radiation and nuclear energy is increasing all over the world, including in emerging nations, and in such countries, an important issue is the cultivation of human resources that can handle radiation disasters. This is an optimal program that addresses this issue, and I would like to see more effort put into releasing information about this program within and outside of Japan.
Member F : The policy and the mechanism for the admission of students is good but the promotion of the Program should be improved. It might be beneficial for the Program to include two or three students from America or Europe to re-enforce its universal character.
Member H : • It is not clear whether any standardized entrance examination will be part of the admissions criteria apart from the written assay and the invited interview. • Advertisement for the degree program should be posted in high impact, multidisciplinary journals such as *Nature*, *Science* and posted in web sites such as the Radiation Research Society and the Japanese Radiation Research Society for wider and targeted audience, respectively.

Criterion 5: Contents and Means of Education

Point 5-①: Does the Program have systematic curriculums appropriate to fulfill its goal and suitable for granting academic degrees? Are subjects to be taught well arranged in line with the purpose of the Program?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☐ Point 5-① is satisfied

☑ Point 5-① is mostly satisfied

☐ Point 5-① requires partial improvement

☐ Point 5-① requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	3	3	3	2	4	3.38

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 5-② is satisfied

☐ Point 5-② is mostly satisfied

☐ Point 5-② requires partial improvement

☐ Point 5-② requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	3	3	4	2	4	3.5

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

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 5-③ is satisfied

☐ Point 5-③ is mostly satisfied

☐ Point 5-③ requires partial improvement

☐ Point 5-③ requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	3	4	4	4	4	4	3.75

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 5-④ is satisfied

☐ Point 5-④ is mostly satisfied

☐ Point 5-④ requires partial improvement

☐ Point 5-④ requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	3	4	4	2	3	3.5

Criterion 5: Contents and Means of Education

Overall evaluation

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☐ Criterion 5 is satisfied

☑ Criterion 5 is mostly satisfied

☐ Criterion 5 requires partial improvement

☐ Criterion 5 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	3	3	4	3	3	4	3.38

[Comments]

Member A: Learning as a student and learning in order to teach as a teacher results in a different depth of understanding. It may be a good idea to set up opportunities for students to be able to learn to teach in their specialized field.
Honing leadership qualities requires experience as a leader. Providing opportunities for each student to initiate a project, obtain the necessary supplies and manpower, and accomplish the project as a leader would be great. This leader education program requires acquisition of knowledge in a wide range of fields. On the other hand, young researchers gain confidence as researchers by acquiring knowledge in a certain specialized field and through academic conference presentations and paper publications. Consideration must be given in order to allow students to achieve sufficient results in their affiliated graduate schools.

Member C: The basis of radiation disaster handling is holistic medicine, but considering the fact that many students without a medical background will be enrolling, the importance of fundamentals in medicine such as community healthcare, geriatrics and perinatal care should be emphasized as common subjects, even if only a few course hours can be allocated. Additionally, regarding radiation exposure, medical exposure is a fundamental subject that must be learned by everyone along with the reality of medical radiography.

Member D: In understanding the study progress of students, I think the use of the e-Portfolio System would be very effective in gaining an overall yet detailed understanding of student academic status. Just as important is the face-to-face communication on a daily basis between students and faculty members/instructors; increasing opportunities to listen to the direct voices of students away from IT is also necessary.
Students are expected to thrive as leaders as soon as they go out into society. Curriculum for leadership education (psychology, communication theory, sociology of regionalism, etc.) should be enhanced. Also, since there are international students, maybe a system to facilitate inter-student exchanges and make voluntary collaborative activities the norm should be deliberated.

Member F : Globally the disciplines offered in the three courses (medicine, environmental protection and social recovery) ensure the overall coherence of the program and meet the objective of interdisciplinarity. A more detailed examination of the curriculums shows, however, a certain imbalance in favor of physical and medical disciplines and their applications. It should certainly be useful to strengthen gradually topics directly related to the human dimension of radiological disasters including aspects ethical, political and historical. The role of social media in the management of the recovery phase should also be envisaged.
Fieldworks could be usefully supplemented by field visits to areas of the world, which have suffered radiation accidents.

Member G : Please refer to our suggestion as aforementioned in sub-section 3-a and 3-b of the Overview section.

Member H :

- The program has a clearly defined curriculum beginning with introductory common

subjects, followed by advanced level common subjects, course work, field work and internship. The inter-disciplinary nature of the course work provides the necessary broad -based fundamental training that is the hallmark of the Phoenix Leadership program.

- The inclusion of fieldwork and internship as part of the training curriculum is considered a major strength of the program.
- Since most of the lectures are likely to be given in Japanese, it is not clear if international students are required to take Japanese language remedial course.

Criterion 6: Outcomes of Education

Point: 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 towards the goal of developing abilities required for Phoenix Leaders?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☐ Criterion 6 is satisfied

☑ Criterion 6 is mostly satisfied

☐ Criterion 6 requires partial improvement

☐ Criterion 6 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	3	3	4	4	3	2	3.25

[Comments]

Member A: Along with confirming the acquisition status of knowledge and skills, a way to evaluate leadership qualities is necessary.
Member C: Evaluation of leadership education is difficult when using only written materials such as portfolios and reports. Substantiation of evaluations for bidirectional activities observed during classes is necessary.
Member F : The development of the Curriculum Map is an excellent initiative and will certainly serve as one of the central tools for Program evaluation together with the e-portfolio. It is important that the Curriculum Map be revised regularly as the program develops. It could also serve as guide for interviews by members of the Internal and External Evaluation Committees to evaluate the progress of the students.
Member G : Please refer to our suggestion as aforementioned in sub-section 3-c of the Overview section.
Member H : • The development of the e-Learning portfolio data base for students' progress is considered a strength of the program. • The yardstick in the assessment of student's performance has yet to be developed and implemented.

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 7-① is satisfied

☐ Point 7-① is mostly satisfied

☐ Point 7-① requires partial improvement

☐ Point 7-① requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	3	4	4	4	4	3.88

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 7-② is satisfied

☐ Point 7-② is mostly satisfied

☐ Point 7-② requires partial improvement

☐ Point 7-② requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	4	4	4	4	4	4	4

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

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Point 7-③ is satisfied

☐ Point 7-③ is mostly satisfied

☐ Point 7-③ requires partial improvement

☐ Point 7-③ requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	3	4	3	4	4	4	3.75

Criterion 7: Student Support Systems
Overall evaluation

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Criterion 7 is satisfied

☐ Criterion 7 is mostly satisfied

☐ Criterion 7 requires partial improvement

☐ Criterion 7 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	4	4	3	4	4	4	4	4	3.88

[Comments]

Member C: Ample consideration is given to financial support for students. On the other hand, new and more practical ideas for educational content are needed, aside from such financial support, in order to find ways to facilitate active and creative research.
Member D: To create an environment in which students can compete with and stimulate each other, participation to international symposiums by students is a good idea. Further, I suggest the consideration of systems to provide more opportunities for students to debate ideas and present results, such as facilitating voluntary planning and the holding of reporting sessions on academic conferences or research findings, seminars, workshops and study groups by students.
Member F : Students of the Program benefit from an exceptional financial support and a highly stimulating environment in particular with the possibility to confront each year with professionals and international experts at the annual International Symposium. It might be interesting to give these annual meeting a more interactive character with brainstorming sessions in small groups in order to give students the opportunity to develop their mastering of the subject and their leadership.
Member H : An unparalleled and exceptionally strong student support in all aspects of their training curriculum is another hallmark of this Phoenix Leadership program.

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?

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Criterion 8 is satisfied

☐ Criterion 8 is mostly satisfied

☐ Criterion 8 requires partial improvement

☐ Criterion 8 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	2	4	4	4	3	4	4	4	3.63

[Comments]

Member A: There are detailed descriptions of the training center, but the content of seminars at the Fukushima University Minami-Soma Satellite Office is too vague.
Member C: Extensive facilities and equipment are being prepared.
Member F : The mechanisms in place are satisfactory. Cooperation with the University of Fukushima should receive special attention in order to give access to students for field works in direct contact with the local population and professionals is certainly a key element of the success of the Program.
Member H : Equipment and environment for the training program are excellent.

Criterion 9: System for Quality Enhancement and Improvement of Education

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

[Evaluation Result] Please place a checkmark in the box next to the most appropriate evaluation.

☑ Criterion 9 is satisfied

☐ Criterion 9 is mostly satisfied

☐ Criterion 9 requires partial improvement

☐ Criterion 9 requires major improvement

Member	A	B	C	D	E	F	G	H	Average
Score	3	4	4	4	4	4	4	4	3.88

[Comments]

Member A: In the future, it will be necessary to clarify what measures were taken regarding matters pointed out by evaluation committee members and external evaluation committee members.
Member C: Evaluation of faculty development is also desirable.
Member F : Both internal and external evaluation mechanisms of the Program are in place and they are appropriate. In the future it would be useful to re-enforce the interaction between the student and the members of the External Evaluation Committee. Increased contributions of the students at the Annual International Symposiums and substantial interviews in group or one and one at this occasion would be valuable for the Committee members to better appreciate the effectiveness of the whole Program with regards the achievements of its objectives.
Member H : • A double evaluation system is in place consisting of an internal and an external evaluation committee. The internal evaluation committee prepares a Self-Evaluation Report of the training program and submit to the External Evaluation Committee which will assess and prepare a written report to assure a thorough evaluation of the progress made in the program and to identify any potential shortcomings in the program for remediation. • A panel of distinguished experts in academic, industry and international radiation advisory commissions is recruited to form the External Evaluation Committee.

III. Summary sheet of evaluation points

Member		A	B	C	D	E	F	G	H	Average /Criterion
Criterion 1		4	4	4	4	3	4	4	4	3.88
Criterion 2	Point①	4	4	4	4	4	4	4	4	4.00
	Point②	3	4	4	3	4	3	4	4	3.63
	Overall evaluation	3	4	4	3	4	4	4	4	3.75
Criterion 3	Point①	4	4	4	4	3	4	4	4	3.88
	Point②	3	4	4	4	3	4	2	3	3.38
	Overall evaluation	2	3	4	4	3	4	2	4	3.25
Criterion 4	Point①	3	4	4	4	3	4	4	3	3.63
	Point②	4	4	4	4	4	2	4	4	3.75
	Point③	4	4	4	4	4	4	4	4	4.00
	Overall evaluation	3	4	4	4	4	4	4	4	3.88
Criterion 5	Point①	4	4	4	3	3	3	2	4	3.38
	Point②	4	4	4	3	3	4	2	4	3.50
	Point③	3	4	3	4	4	4	4	4	3.75
	Point④	4	4	4	3	4	4	2	3	3.50
	Overall evaluation	3	4	3	3	4	3	3	4	3.38
Criterion 6		3	4	3	3	4	4	3	2	3.25
Criterion 7	Point①	4	4	4	3	4	4	4	4	3.88
	Point②	4	4	4	4	4	4	4	4	4.00
	Point③	4	4	3	4	3	4	4	4	3.75
	Overall evaluation	4	4	3	4	4	4	4	4	3.88
Criterion 8		2	4	4	4	3	4	4	4	3.63
Criterion 9		3	4	4	4	4	4	4	4	3.88
Average /Member		3.43	3.96	3.78	3.65	3.61	3.78	3.48	3.78	3.68

IV. Areas to be improved in response to the results of External Evaluation

According to the results of the external evaluation, all criteria except for criteria 3, 5, and 6 could be judged to "fully meet" the requirements. Therefore, we reviewed criteria 3, 5, and 6 which were rated to "mostly meet" the requirements, referring to the comments, to clarify the issues and propose actions for improvement.

In addition, for those criteria other than 3, 4, and 6 which were evaluated to "fully meet" the requirements (average of overall evaluation is 3.5 points or over) (cf. III. Summary sheet of evaluation points, page 35), we proposed improvement plan under "4. Improvement of Other Criteria" by picking up points for improvement from individual comment.

Furthermore, in I. Overview (cf. pages 1 to 8), several areas were pointed as "aspects requiring improvement" (cf. pages 4 to 6). Issues are clarified and improvement measures are indicated for those areas which were not covered by earlier mentioned criterion.

1. Improvement for Criterion 3 "Program Members and Education Supporters"

[Evaluation result]

Regarding evaluation of criterion 3, average of overall rating was 3.25 points. Of which, Point 3-① was rated to "fully meet" the requirements with average of 3.88 points, while Point 3-② Appropriateness of Faculty Members was rated 3.38 to "mostly meet" the requirements.

[Issue]

Point 3-②-1 Evaluation of supporting staff from viewpoint of mental care

Point 3-②-2 Practical and field-oriented guidance by staff who has first-hand experience in the field

Point 3-②-3 Enhancement of program members in the Social Recovery course, social science field

[Improvement action]

Item	Action	Period
Point 3-②-1	Among students, primary advisor and co-advisor, share the understanding of mental care system for students in the whole university	April
Point 3-②-2	Launch industry-academia-government consortium and establish the system in which its members to take part in the program as lecturer, judge for Qualifying Examination (QE), etc.	Up to September
Point 3-②-3	Enhance Social Recovery course by including more program members who are specialized in the social science field	Up to September

2. Improvement for Criterion 5 “Contents and Means of Education”

[Evaluation Result]

Evaluation of criterion 5 was overall rating average of 3.38 points; Point 5-① Course Subjects and Their Appropriateness was rated as average of 3.38 to “mostly meet” the requirements.

For those points other than 5-① were evaluated to “fully meet” the requirements.

[Issue]

Point 5-①-1 Opportunity to complete projects as a leader

Point 5-①-2 Achieve satisfactory research result in the belonging graduate school

Point 5-①-3 Daily face-to-face communication between students and teaching staff/advisors

Point 5-①-4 Curriculum to develop leadership

Point 5-①-5 System to encourage exchange among students and they work together voluntarily

Point 5-①-6 Adjust the curriculum for its too much emphasis on natural science and medical studies

Point 5-①-7 Individualized currier guidance program

Point 5-①-8 Establish education subject and method which meet program objective

（STS*, field visit, scientific communication, etc.） * Sociotechnical systems

[Improvement action]

Item	Action	Period
Point 5-①-1 5-①-5	Students to plan and implement international symposium to develop their awareness as a Phoenix leader, encourage exchange among students and willingness to work together voluntarily	Up to February
Point 5-①-2	Clarify and evaluate students’ ability to carry out their research based on evaluation criteria vs. targets, and ensure they achieve research result	Up to September
Point 5-①-2	Develop long-term fieldwork procedures which strengthen students’ expertise and contribute to research result.	asap
Point 5-①-3 5-①-5	Carry out retreat and seminars to encourage communication between teaching staff and students, exchange among students, and voluntary collaborative activity	Year-round
Point 5-①-4, 5-①-6	Implement short-term fieldwork and common course work to obtain knowledge base and practical skills across disciplines	Year-round
Point 5-①-7	Work with institutions which accept students in short- and long-term internships for matching of the area of research/interest, and develop currier guidance program	asap
Point 5-①-8	Include lecturers with different background in retreat, establish common understanding on education subject and method, and reflect it to improve the program	Up to September

3. Improvement for Criterion 6 “Outcomes of Education”

[Evaluation Result]

Evaluation of criterion 6 was made from single Point of “appropriate system to verify and evaluate achievement levels” and average rating was 3.25 points to “mostly meet” the requirements.

[Issue]

Criterion 6-1 Measures to evaluate students’ qualification as Phoenix Leader

Criterion 6-2 Regular revision of the curriculum map

Criterion 6-3 Clarification of methods of education and evaluation in the curriculum map

[Improvement Action]

Item	Action	Period
Criterion 6-1, 6-3	Develop evaluation criteria to evaluate global skills, management skills, interdisciplinary skills, and establish the process to evaluate students for capability as Phoenix Leader	April
Criterion 6-1, 6-3	Additional function to confirm students’ learning results in Learning e-portfolio, and evaluate students for their capability as Phoenix Leader	April
Criterion 6-2, 6-3	Hold seminars on planning and implementation of classes based on the curriculum map and ensure common understanding of education and evaluation methods	Up to September
Criterion 6-2, 6-3	Review curriculum map according to students’ learning results and questionnaire and improve students’ capability as Phoenix Leader	Up to September
Criterion 6-3	Develop learning guidance based on the curriculum map and visualize education and evaluation methods to improve efficiency in learning	Up to May

4. Improvement for Other Criteria

[Evaluation Result]

For those criteria which were rated to "fully meet" the requirements (overall rating average is 3.5 points or over) other than criteria 3, 5, and 6, improvement action is proposed for the areas pointed in individual comment.

[Issue]

Other-1 Collaboration with industry and governmental agency

Other-2 System to encourage students' voluntary action

Other-3 Evaluation of faculty development

Other-4 Accumulation of students' experience and program activity utilizing Learning e-portfolio

Other-5 Re-organization of program administration

[Improvement Action]

Item	Action	Period
Other-1	Establish organization to support industry-academia-government consortium as soon as possible and strengthen collaboration with industry and governmental agencies	asap
Other-2	Establish students' study room for students to use for their voluntary activity such as planning of international symposium	April
Other-3 Other-4	Accumulate activity in Phoenix Leader Education Program and share the information among teaching staff	Year-round
Other-4	Develop function in Learning e-portfolio for students to report their activity	Year-round
Other-5	Re-organize various program meetings to ensure more efficient program administration	April

5. Improvement for Evaluation Overview

[Evaluation Result]

Several items were pointed in the overview of evaluation (cf. pages 1 to 6) as "items which need major improvement" (cf. pages 3 to 4). Among them, issues were clarified for those which were not mentioned earlier and improvement action was proposed.

Listed items were pointed by several evaluators, and it is necessary to pay attention for future development of the program

[Issue]

Conclusion-1 improvement of curriculum in its wider range of field (common field) and depth (specialty field)

Conclusion-2 Degree to describe characteristics and capability of Phoenix Leader

Conclusion-3 International activity of publicity of the program and student recruitment

[Improvement Action]

Item	Action	Period
Overview-1	Review the curriculum based on the curriculum map and students' learning result and improve the program and specialty field	Up to September
Overview-2	Develop textbooks to establish a field of studies of recovery from radiation disaster which will be a basis of the degree granted	asap
Overview-3	Carry out publicity activity such as program introduction and entrance examination abroad	April
Overview-3	Implement strategic publicity on international/domestic academic journals on interdisciplinary and focused study area	April

V. Phoenix Leader Education Program for Renaissance from Radiation Disasters External Evaluation Committee Meeting Agenda

1. Objective of FY H24 (2012) External Evaluation

Hiroshima University Phoenix Leader Education Program (Hiroshima Initiative) for Renaissance from Radiation Disaster (hereafter referred to as the Phoenix Leader Education Program) was selected as one of FY2011 MEXT Program for Leading Graduate Schools, and inaugurated in October 2012, aiming to develop global leaders (Phoenix leaders) with broad and multi-disciplinary knowledge, who have abilities to make decisions and take appropriate actions under radiation disaster, and lead recovery activity based on the clear philosophy.

The FY2012 self-evaluation was carried out on criteria such as purpose of the program, implementation structure, program members and education supporters, acceptance of students, contents and means of education, verification and evaluation of outcomes of education, student support, facilities and equipment, and the system for quality enhancement and improvement of education. Based on the results of self-evaluation, we ask experts from industry, academia, government in Japan and abroad for their assessment and advice in order to complement the Phoenix Leader Education Program as a human resource development program which would meet world expectation.

2. Date & Venue

Date: Sunday, February 10, 2013

Venue: RIHGA Royal Hotel Hiroshima, “AKI NO MA” （3F）

3. Participants

Members of External Evaluation Committee

Name	Title/Post
Tokushi Shibata	Chief research scientist of Chiyoda Technol Oarai, Inc.
Shigenobu Nagataki	Director, Radiation Effects Association
Kiyoshi Miyagawa	Professor at Graduate School of Medicine of the University of Tokyo
Takashi Yamashita	Chairman of Chugoku Electric Power Company
Dr. Albert Lee Wiley	Medical/Technical Director at Radiation Emergency Assistance Center/Training Site (REAC/TS), Oak Ridge
Dr. Jacques Lochard	Chair of Committee 4 of International Commission on Radiological Protection (ICRP)
Dr. Rethy K. Chhem	Director of the Divisionof Human Health, International Atomic Energy Agency (IAEA)
Dr. Tom K. Hei	Professor and Vice-Chairman of Radiation Oncology, Columbia University Medical Center

Members of Phoenix Leader Education Program

Post	Name	Affiliation	Responsibility in Program
President	Toshimasa Asahara	President of Hiroshima University	Director of Organization of the Leading Graduate Education Program
Executive and Vice President	Tetsuji Okamoto	Community Relations, Public Relations and Academic Information	Program Director Radiation Disaster Medicine Course Member
Professor	Kenji Kamiya	Research Institute for Radiation Biology and Medicine	Program Coordinator Radiation Disaster Medicine Course Member
Professor	Shinya Matsuura	Research Institute for Radiation Biology and Medicine	Radiation Disaster Medicine Course Leader
Professor	Kiyoshi Shizuma	Graduate School of Engineering	Radioactivity Environmental Protection Course Leader
Professor	Kiriko Sakata	Graduate School of Integrated Arts and Sciences	Radioactivity Social Recovery Course Leader
Professor	Koichi Tanigawa	Graduate School of Biomedical & Health Science	Radiation disaster Medicine Course Member
Professor	Yoshio Hosoi	Tohoku University	Radiation disaster Medicine Course Member
Professor	Toshinori Okuda	Graduate School of Integrated Arts and Science	Radioactivity Environmental Protection Course Member
Professor	Yukio Urabe	Graduate School of Biomedical & Health Science	Radioactivity Social Recovery Course Member
Professor （Special Appointment）	Tamotsu Toshima	Graduate School of Biomedical & Health Science	Radiation disaster Medicine Course Member

4. Agenda

Time	Event	Person
８：３０	Opening Remarks	Tetsuji Okamoto （Program Director）
８：３５	Introductions	Members of Phoenix Leader Education Program
８：４０	Introductions	Members of External Evaluation Committee
８：４５	Guidance on Evaluation Process	Tetsuji Okamoto （Program Director）
８：５０	Presentation on the Program	Kenji Kamiya （Program Coordinator）
９：１０	Presentation on the Program Self-Study Report	Tetsuji Okamoto （Program Director）
９：４０	Q&A at Point by Point for Evaluation	Tetsuji Okamoto （Program Director）
１０：００	Break	
１０：２０	Q&A at Point by Point for Evaluation	Tetsuji Okamoto （Program Director）
１１：００	Discussion Sum up （Lunch）	Tetsuji Okamoto （Program Director）
１２：００	Closing Remarks	Kenji Kamiya （Program Coordinator）

【Inquiries and Submission】
The Organization of Leading Graduate Education Program, Hiroshima University
Collaboration Office of Education and International Office
〒739-8524
1-1-1 Kagamiyama, Higashi-Hiroshima, 739-8524
TEL：082-424-6152・4638
E-Mail：leading-program@office.hiroshima-u.ac.jp
URL: http://www.hiroshima-u.ac.jp/lp/program/ra/