

Call for Project Proposals

– 2011 GCOE Young Leader Fostering Program –

Global COE Program (2007-2011)

Informatics Education and Research Center for Knowledge-Circulating Society

Dept. of Social Informatics, Intelligence Science and Technology, Applied Mathematics and Physics, Systems

Science, Communications and Computer Engineering of Graduate School of Informatics, Kyoto University

Academic Center for Computing and Media Studies, Kyoto University

Objective and Overview of the Global COE Program

The objective of the Global Center of Excellence (Global COE) program is to form an international education and research center that fosters Ph.D. students and young researchers through advanced research of informatics, which especially focuses on the research of computer science and information technologies promoting the circulation of knowledge in the coming knowledge society. Major research fields are intelligent information processing, human interfaces, information retrieval, algorithm theories, and humanistic social informatics, but are not limited to these fields. Our previous 21st Century Center of Excellence (COE) Program called “Informatics Center for the Development of Knowledge Society Infrastructure” accomplished outstanding achievements in the understanding of humanity and integrated media for knowledge generation, the development of knowledge delivery software platform, and social information systems. Based on these achievements, we aim at establishing an international and interdisciplinary education and research center in the Global COE program, focusing on "computer science and information technology that organize a knowledge-circulating society" to push the frontiers of science.

Information systems as social infrastructures have been improved along with the development of information technology. However, numerous technological and social problems have begun to surface, including unfamiliar human-computer interfaces (information equipment and robots), the threat of unpredictable behavior based on unreliable knowledge acquired from the Internet, and the fragility of social information systems. These problems can be ascribed to the congestion of knowledge circulated among people, communities, and societies. Knowledge becomes useful if one person's knowledge is linked to another's and circulated throughout a society. It is important to pursue not only engineering methodology but also new research methodology to facilitate the smooth circulation of knowledge among societies, communities, organizations, and individuals by organizing inter-disciplinary research teams.

Important aspects of information technology for promoting the circulation of knowledge include human interfaces to communicate knowledge, knowledge searches, collaboration based on knowledge sharing in fieldwork, and reliable high-speed computing infrastructures. The present program has therefore established four (education and research) cores: "primordial knowledge model", "knowledge search", "field informatics" and "knowledge grid computing" based on interdisciplinary research.

- The primordial knowledge model core focuses on the fundamental mechanisms underlying knowledge in co-action. In order to develop better human interfaces for knowledge communication, it integrates multi-modal, brain and biological measurements to discover how knowledge and communication induce each other.
- The knowledge search core focuses on new search-engine technologies to enable reliable knowledge to be searched from a variety of information sources, and on social systems and business models related to searching.
- The field informatics core focuses on the methodology for constructing social information systems based on collaboration with field experts.
- The knowledge grid computing core focuses on the construction of reliable high-speed knowledge-service infrastructures to support the previous three cores.

The four cores enable cooperation between them to form the world's highest level of international education and a research center related to "information technology to promote the circulation of knowledge".

GCOE Young Leader Fostering Program

Young researchers and Ph.D. students are encouraged to competitively propose research projects or education projects that are related to the aim of the Global COE program. The Young Leader Fostering Program provides

research funds so that accepted applicants can experience leadership and build an international network of personal contacts. Proposed projects will be evaluated and selected mainly based on the importance, applicant's leadership, originality, relevance to Global COE, thus, not solely by the amount of applicant's previous research publications. **Proposals, that are expected to accomplish international activities (such as promoting GCOE international base activities, international collaborative research, or providing strong impacts internationally by the project), are highly encouraged.** Projects are to be accomplished with the leadership of the accepted applicants under advices of principal researchers (Jigyo Suishin Tantousha) or affiliated researchers (Kenkyu Kyouryokusha) of the Global COE program.

Submission of Proposals for 2010 GCOE Young Leader Fostering Program

- **Research Fund of GCOE Young Leader Fostering Program**

In the 2011 fiscal year, proposals are called twice (in April 2011 and November 2011). Totally, 10 projects are to be accepted. The amount of the research fund for each accepted project will be from 1,000,000 yen up to 1,500,000 yen.

Accepted applicants can use his/her project budget for purchasing (1) BIHIN: high-cost equipment (e.g., hardware) whose price is equal to or more than 100,000 Japanese Yen, (2) SHOUMOUHIN: low-cost equipment (e.g., books, materials, lower cost hardware) whose price is less than 100,000 Japanese yen, (3) RYOHI: travel expenses (transportation fee, daily allowance, etc.), and (4) SONOTA (others).

The fund is treated in the same manner as an ordinary research fund, and so, it cannot be used for monthly stipend. For example, any high-cost equipment purchased by the fund is regarded as a property of Kyoto University.

Each accepted project can start from May 1st, 2011 to March 19th, 2012.

All the accepted applicants must attend and report their activities at both the inter-medium and final review meetings, and also, submit their final report. In addition, all the accepted applicants must present their work at a poster presentation of the Kyoto University ICT Innovation Fair 2012, which will be held at the Clock Tower Centennial Hall (International Conference Hall, 2F) in February 2012.

The intelligent property rights obtained by the project belong not only to the applicant, but also to Kyoto University.
- **Selection procedure**
 1. Each applicant must submit his/her proposal to the GCOE office by e-mail using the application form (form 1, 2, and 3) attached with this document and the presentation slide (Powerpoint etc.) until April 15th (Friday) noon, 2011.
 2. The selection committee will be held on April 18st (Monday), 2011. All the applicants are asked to make 10 minute presentations (using PowerPoint, etc.) in front of the selection committee. Excellent proposals will be recommended for acceptance.
 3. Final decision will be made by the President of Kyoto University.
- **Submission and Inquiries**

GCOE office: e-mail: ryoko@dl.kuis.kyoto-u.ac.jp,
Faculty of Engineering Building #10, Room #332,
Tel/Fax: 075-753-5979
- **Eligibility**

Each applicant must satisfy all of the following conditions:

 1. He/She must belong to either one of the dept. of social informatics, dept. of intelligence science and technology, dept. of applied mathematics and physics, dept. of systems science, dept. of communications and computer engineering of graduate school of informatics, or the academic center for computing and media studies, Kyoto University.
 2. He/She must be either a Ph.D. course student, a GCOE faculty, a GCOE researcher or an internship student under the Global COE program.
 3. He/She can organize and propose a project team including other eligible applicants, master course students or people outside Kyoto University. However, the project team should not include faculty members.
 4. He/She must not be a recipient of the JSPS (Japan Society for the Promotion of Science) Research Fellowships for Young Scientists who is receiving both the monthly stipend and Grants-in-Aid for Scientific Research in 2010 fiscal year.
- **Proposal Topics**

Project proposals must be a research project (which may include workshop/seminar planning or survey research) or an educational project (which may include workshop/seminar planning or survey research) related

to either one of the following 4 cores, or any combinations of the 4 cores. Project proposals including oversee collaborative research (stay at foreign universities or research institutes for collaborative research or exchange of research) are encouraged. Project proposals related to more than one core are welcome regarded as “inter-core projects”.

1. Primordial Knowledge Model Core

This core focuses on the following research to establish a knowledge model in communications and apply it to human interfaces and knowledge creation: (1) human-to-robot sound-recognition model and its implementation and evaluation in robots, (2) human image-recognition models and its implementation and evaluation, (3) human-robot symbiosis environment and analysis of life phenomena and brain activities, (4) recording and analyzing media-dynamics.

2. Knowledge Search Core

This core focuses on the following research: (1) trust-oriented search engines with particular emphasis on the credibility of information, (2) XML-based search and management mechanisms for personal contents, (3) multimedia search technologies for archiving, indexing and searching contents with recognition technology, (4) the creation of a business model corresponding to knowledge search, and (5) the research of intellectual property management related to search.

3. Field Informatics Core

The core aims to establish the methodology of field informatics by integrating design approaches including universal and inclusive designs, predictive methods, including multi-agent simulation and participatory modeling, and analytical approaches, including bio-logging, ethnography, and statistical analysis. This core focuses on the following research: (1) an animal resource management in Southeast Asian countries for the preservation of environment, (2) research on solutions to the language barrier in global endeavors by connecting the world’s language resources to a Web service and implementing remote international education centering on Pacific-rim countries in cooperation, (3) collaboration with small and medium enterprises and disabled people as social education activities.

4. Knowledge Grid Computing Core

The core focuses on the following research: (1) the optimization theory for the integrated processing of a large-scale data, (2) the combinatorial structure and parallel computation of large-scale complex systems, (3) innovative research on computing technology for data search, (4) research on grid computing, and (5) research on networks.