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The National Science Foundation's Tokyo Regional Office periodically reports on developments in Japan that are related to the Foundation's mission. It also provides occasional reports on developments in other East Asian countries.

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The World Premier International Research Center Initiative

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) announced five winners of the new World Premier International Research Center Initiative (WPI) competition. The awardees are; Tohoku University, the University of Tokyo, Kyoto University, Osaka University and National Institute of Materials Science.

As reported in the NSF Tokyo Office Report Memorandum #07-04 (<http://www.nsf-tokyo.org/rm07-04.pdf>), WPI is a new, ambitious program supported by MEXT and represents an implementation of one of the goals of Japan's third Science and Technology Basic Plan. Its long-term goal is to build world-class research centers in Japan where the best and the brightest would gather from all over the world to conduct highly innovative research and to advance the frontiers of science.

Attached to this report is a table summarizing the five awards, adopted from a posting on the homepage of the Japan Society for the Promotion of Science (<http://www.jsps.go.jp/english/e-toplevel/index.html>).

THE FIVE WPI AWARDS

Science

Research proposed by the WPI centers is interdisciplinary, multi-dimensional, and internationally-engaged. All aim to integrate training of the next generation of scientists into their research activities. Reflecting Japan's traditional strength, three of the five centers [Tohoku University, Kyoto University, and National Institute of Materials Science (NIMS)] focus on materials research although each has its own unique goals. Tohoku University's project aims to develop new functional materials using innovative approaches at the atomic and molecular levels: This center builds upon the pioneering work of Dr. Akihisa Inoue, current President of Tohoku University, on metallic glass. NIMS project will use nanotechnology to develop new materials for sustainable development. Kyoto University's project is a marriage between cell biology and material science, and its stated goal is to create a new field of interdisciplinary research, "meso-scale" (5-100 nm) science.

Osaka University's project hopes to obtain a complete understanding of the immune system in animals by developing imaging technologies that enable researchers to study every aspect of cellular immune responses in real time. WPI Center at the University of Tokyo is led by two young PIs, and proposes to answer one of the most fundamental questions in science, the origin and fate of the universe: The reviewer comments posted on the WPI Homepage indicate that the reviewers considered this project as one most fitting of the intent of the WPI program.

Personnel and Budget

A WPI center would typically house 200 or more staff, including researchers, graduate students, postdocs, technicians, and administrative staff. MEXT expects that 10-20 of center researchers to be world-class scientists [as evidenced by their publications, membership in prestigious organizations, etc.] and 10-20 percent of them to be from outside of Japan. At all times, at least 30 per cent of the scientific personnel are to be from overseas including short-time visitors. The WPI researchers are not expected to perform non-research work.

Each selected center receives somewhere between Yen 500 million-Yen 2 billion (~\$4-17 million) per year for 10 (and possibly 15) years. While MEXT does not make the grant amount for each center public, it is likely that the first year's budget for the research centers, Yen 3.45 billion (~\$30 million), will be nearly equally distributed to the five centers. This amounts to each center receiving about Yen

690 million (~\$6 million) for six months from October 1, 2007 through March 31, 2008 when the Japanese fiscal year 2007 ends. MEXT has requested Yen 9 billion (~\$78 million) for JFY2008 (April 2008-March 2009) for this initiative. The final figures will be decided at the end of December 2007. If the request is approved by the Ministry of Finance (MOF), each center will receive approximately Yen 1.8 billion (~\$16 million) per year in JFY2008. NSF Tokyo Office will follow up on the new budget for this initiative when the JFY2008 budget is finalized.

International Partnerships:

The working language at WPI centers is English. It is required that both researchers and administrative staff have English language capability. The nature of partnership activities with foreign partner institutions varies from center to center. The MEXT management is flexible about how the WPI award funds might be used to promote international partnerships. For example, it is possible for foreign partner institutions to receive funding from MEXT to conduct research at their home institutions.

APPLICATION – SELECTION PROCESS

The program announcement was issued in both English and Japanese on April 2, 2007 (The English version can be found at <http://www.jsps.go.jp/english/e-toplevel/index.html>). Anticipating involvement of foreign reviewers, the proposals were to be written in English. By the deadline of May 31, 2007, 33 applications were received. The mail review that was carried out by 155 reviewers, including 46 overseas experts, selected 15 center proposals for further review. All 15 proposals were reviewed on August 30-31, 2007, by a panel of experts consisting of 15 members (http://www.jsps.go.jp/english/e-toplevel/data/07_committee/committee_members.pdf) including the following 6 foreign members:

Robert Aymar, Director General/CERN

Rita Colwell, Professor/University of Maryland

Richard Dasher, Professor/Stanford University

Ian Halliday, President/European Science Foundation

Lim Shuan Poh, Chairman / Agency for Science, Technology and Research, Singapore

Matthew Mason, Director/Robotics Institute, Carnegie Mellon University

The panel review included interviews in English with the representatives from the 15 proposed centers, including the submitting institution's president. This panel made the final selection. After MEXT's negotiations with the selected five centers, the outcome of the competition was made public and posted on the WEB on September 12, 2007 (<http://www.jsps.go.jp/english/e-toplevel/index.html>). The entire decision making process took three and a half months.

NEXT STEPS

The start date of the five WPI center awards is October 2007. All the centers will be evaluated annually, beginning in about a year. The original review panel will continue to serve as the project review committee. Due to the large budget, a second round of WPI solicitation will not be held in JFY2008. MEXT “may” offer another solicitation in JFY2009, although it would depend on Governmental financial situation at that time. MEXT has invited NSF Tokyo Office to visit the centers to learn about their projects first-hand. As we make these visits, we will report on the projects and their progress in detail, and to identify opportunities for U.S. researchers to participate in the WPI center activities.

WPI Center Awards – JFY2007

PI Institution	Project Title and URL	PI	Partner Institutions
Tohoku University	The WPI Research Center for Atom-Molecule-Materials http://www.jsps.go.jp/english/e-toplevel/data/03_results/outline_tohoku.pdf	Yoshinori YAMAMOTO (Graduate School of Science, Tohoku University)	
The University of Tokyo	Institute for the Physics and Mathematics of the Universe http://www.jsps.go.jp/english/e-toplevel/data/03_results/outline_tokyo.pdf	Yoichiro SUZUKI (Institute for Cosmic Ray Research, The University of Tokyo) Hitoshi MURAYAMA (University of California at Berkeley / Lawrence Berkeley National Laboratory)	<u>Satellite activity centers:</u> Kamioka; the Astrophysical Sciences Department of Princeton University; IHES in France; the Physics and Mathematics Departments, and the YITP at Kyoto University <u>Collaborating institutions:</u> NAOJ;KEK
Kyoto University	Institute for Integrated Cell-Material Sciences http://www.jsps.go.jp/english/e-toplevel/data/03_results/outline_kyoto.pdf	Norio NAKATSUJI (Institute for Frontier Medical Sciences, Kyoto University)	<u>Satellite laboratory:</u> Faculty of Applied Biological Sciences, Gifu University
Osaka University	Osaka University Immunology Frontier Research Center http://www.jsps.go.jp/english/e-toplevel/data/03_results/outline_osaka.pdf	Shizuo AKIRA (Professor, Research Institute for Microbial Diseases, Osaka University)	<u>Collaborating institutions:</u> RIKEN Research Center for Allergy and Immunology; National Institutes of Health; Harvard University; New York University; Stanford University; California Institute of Technology; University of California San Francisco
National Institute of Materials Science	International Center for Materials Nanoarchitectonics (MANA) http://www.jsps.go.jp/english/e-toplevel/data/03_results/outline_nims.pdf	Masakazu AONO (NanoSystem functionality Center, National Institute for Materials Science)	<u>Satellite institutions:</u> University of Tsukuba; Cambridge University; CNRS.; University of California Los Angeles; Georgia Institute of Technology <u>Collaborating institutions:</u> Institute of Physics, Chinese Academy of Sciences; KAIST (Korea), Max Planck Institute; Charles University (Czech); University of California Santa Barbara