

these links have also been posted on RERF's Facebook page). We have a full issue as usual, including greetings from Dr. Grant and Mr. Solvie, a review of the 43rd Scientific Advisory Committee meeting held in March, accounts of a number of public relations activities, a report on a Biosample Workshop in which we obtained expert advice and discussion related to our new Biorepository and Research Resource Center, and the usual content of our journal, this time in its final issue!

June 1, 2016



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Report on the 43rd Scientific Advisory Committee Meeting March 2-4, 2016

The 43rd meeting of the Radiation Effects Research Foundation (RERF) Scientific Advisory Committee (SAC) was held March 2-4, 2016, at Hiroshima RERF, Japan. The 10 SAC members were joined by two Special Scientific Advisors, Dr. Hirotsugu Ueshima and Dr. Marjan Boerma, added for their expertise in epidemiological research and radiation cardiac toxicity, respectively. This year's in-depth review focused on the Department of Clinical Studies.

Dr. Ohtsura Niwa, RERF Chairman, opened the meeting on Wednesday March 2, with a high-level overview of RERF as a public interest incorporated foundation and of its organizational structure focused on clinical studies and support services. He addressed the changing environment and the outside pressures that RERF faces and stressed the importance of transparency and accountability for the foundation. Consistent with RERF's objective to conduct research studies, he provided a leader's view of the Foundation's future plans.

Recently, RERF initiated a major restructuring that has involved the merging of the Radiobiology/Molecular Epidemiology and Genetics departments into the new Molecular Biosciences Department and the formation of a scientific structure comprised of "research clusters." This year, 2016, marks the first year this change has been fully implemented. While it may be premature to judge the impact of restructuring, the SAC indicated that it appreciates the substantial effort this change represents, viewing it as a positive response to some of the shortcomings the committee had previously identified.

Dr. Robert L. Ullrich, Vice Chairman and Chief of Research, reported next on RERF research developments following the initial restructuring by departmental merger (Molecular Biosciences Department) and the use of multidisciplinary meet-



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ings, interactions, and collaborations for performing research within the new "research cluster" system. The prioritization of research projects due to resource limitations was described next. Dr. Ullrich's vision for establishing a stronger computational biology emphasis includes strategic collaborations. The plans for maximizing the study of novel biospecimens include exploration of collaborations with Japanese companies and institutions as well as selected external collaborators, such as the U.S. National Institutes of Health (NIH) and the National Cancer Institute (NCI), but clearly within guidelines for sample-sharing that respect A-bomb survivor sensitivities. The efforts to strengthen the Research Resource Center were also described. In his presentation, Dr. Ullrich addressed all of the 2015 SAC comments and summarized RERF research achievements during the course of 2015. These achievements included the following:

- A comprehensive analysis to update radiation risk estimates for cancer incidence through 2009 was completed using updated individual doses and information on lifestyle factors such as smoking in collaboration with the U.S. NCI.
- A detailed analysis of mortality risk and dose

responses of heart-disease subtypes in separate observation periods from 1950 to 2008 was conducted in collaboration with the Cardiovascular Disease Research Cluster and Department of Clinical Studies.

- A first-author paper on the association of radiation dose with the prevalence of thyroid nodules among Adult Health Study (AHS) subjects exposed at younger ages was published.
- Two first-author papers on the effects of demographic factors and radiation on the age trend of cognitive function between 1992 and 2011 among subjects exposed at ≥ 13 years of age were published.
- A paper on cancer and non-cancer mortality risks among the children of the atomic bomb survivors during 1946–2009 was published.
- The RERF Statistics and Epidemiology departments revised location estimates for individual survivors resulting from recent map work by the Master File Section, as well as revised and improved input data on terrain shielding at those new locations resulting in changes in survivors' DS02 dose estimates.

An overview presentation by Dr. Waka Ohishi, Chief, Department of Clinical Studies, followed. The responses to SAC comments were provided and later fortified by examples in subsequent individual presentations. Dr. Ikuno Takahashi, Research Scientist, Department of Clinical Studies, presented on radiation and cardiovascular disease, and Dr. Daisuke Haruta, Research Scientist, Department of Clinical Studies (Nagasaki), focused on chronic renal disease in exposed individuals. Dr. Shunichi Yamashita, Dean/Professor, Graduate School of Biomedical Sciences, Nagasaki University, of the SAC provided comments for improving the working hypothesis slides to eliminate ambiguity. Dr. Ayumi Hida, Chief, Division of Medicine, Senior Scientist, Department of Clinical Studies (Nagasaki), summarized the ophthalmology studies, and Dr. Kazunori Kodama, Chief Scientist, provided information on the Fukushima nuclear emergency workers health study (known as the NEW Study, or NEWS) and the many difficulties encountered in locating subjects and obtaining their agreement to participate.

Dr. Kotaro Ozasa, Chief, Department of Epidemiology, presented that department's overview and addressed all of the prior SAC comments and concerns. Dr. Harry M. Cullings, Chief, Department of Statistics, provided that department's overview and focused on the aging research staff and needs for recruitment of researchers. Dr. Hiroaki Katayama, Chief, Department of Information Technology, provided his department's overview, which also

was marked by an aging staff and resource limitations. Dr. Yoichiro Kusunoki, Chief, Department of Molecular Biosciences, completed the departmental presentations with an overview of the new department.

On Thursday, March 3, Dr. Yoshiaki Kodama presented a Biosample Center update and Dr. Niwa addressed RERF's future plans. A discussion with the SAC provided some of the issues to be addressed. The SAC members visited the departments Thursday morning and the Resource Center in the afternoon, followed by in-depth reviews, in preparation for discussions and report preparation.

After this thorough review the SAC provided overall recommendations for RERF as well as more specific recommendations for each department. The key written recommendations for RERF are given below:

1. The SAC recognized and expressed its appreciation for the organized meeting materials provided to SAC members. It also appreciated the enormous amount of work and resources involved in managing this RERF annual meeting and raised the question as to whether this large commitment of resources and investigator time might be better spent on research activities. Several SAC members have suggested that a biennial review cycle be considered. In alternate years, a written progress report, reviewed administratively, may suffice to monitor progress. Several others considered these annual reviews to be appropriate in their current format. RERF administration was encouraged to discuss these options with the U.S.-Japan official representatives.
2. Several presentations expressed concerns that the RERF investigators are aging, the facilities need investment, and the future of the foundation is in flux. The SAC discussed these concerns and recognized the need for RERF leadership to initiate the processes needed to develop a strategic plan for RERF's future.
3. RERF's primary directive was to perform epidemiological studies of subjects exposed to atomic bomb radiation. To this end, the carcinogenesis studies have provided outstanding data to advance the understanding of radiation effects in humans. Furthermore, the F1 generation studies will provide answers to critical questions about the potential trans-generational effects of human radiation exposures. Much of the recent research has focused on non-cancer studies of low-level radiation. The findings have been less convincing and more difficult to support, since the rationale for performing studies has been based on high-dose, clinical exposures (published literature),

and RERF observations of non-cancer diseases may be confounded by the aging process of subjects.

4. More involvement of the Department of Statistics at the early stage of research proposal design was recommended. The Statistics Department has been contributing to “after-the-fact” data analyses for many RERF studies in the other departments. The SAC strongly recommended that at least one Statistics Department member participates in the design stage of each research proposal. All new and continued Research Protocol (RP)’s should have a clear working hypothesis with the indication of expected statistical power and feasibility for the experimental design.
5. Similarly, the SAC urged the involvement of at least one member from the Epidemiology Department in the discussions, design, and analyses of these studies to ensure that the cohort data will be utilized appropriately.
6. The SAC recognized the increase in collaborations and communication that have been led by young scientists within RERF. The SAC recommended increasing the visibility of such activities within RERF as well as to the public. This may serve to attract more highly

qualified candidates for recruitment to RERF. Academic positions for young scientists are limited in Japan so it is not clear why there are not more applications for positions at RERF.

An important recommendation for the Clinical Studies Department, which was the primary focus of review this year, is shown below:

- The equipment and resources have been purchased and are in place for completing the cataract study. It was somewhat disconcerting that only four participants can be evaluated per week per city for data collection due to a shortage of ophthalmologist time availability. This allocation of resources should be reviewed and the data collection accelerated, to complete this study in a timely fashion.

In summary, the SAC recognized the important and unique contributions that RERF makes to science as well as to the determination of radiation risks. Recognizing these important roles that RERF currently plays on the world stage, the SAC made the key suggestion to develop a strategic plan for the future of RERF covering the next 20–30 years.



Participants of 43rd Scientific Advisory Committee meeting, at Hiroshima RERF

Scientific Advisors

- Dr. Anatoly Dritschilo*, Professor and Chairman, Department of Radiation Medicine, Georgetown University School of Medicine, *Co-chairperson*
- Dr. Shunichi Yamashita*, Trustee, Vice President, Nagasaki University, *Co-chairperson*
- Dr. Yoichi Gondo*, Team Leader, Mutagenesis and Genomics Team, RIKEN BioResource Center
- Dr. Michiaki Kai*, Professor, Environmental Health Science, Department of Health Sciences, Oita University of Nursing and Health Sciences
- Dr. Kazuo Sakai*, Professor, Faculty of Nursing, Tokyo Healthcare University
- Dr. Tomotaka Sobue*, Professor, Department of Social and Environmental Medicine, Graduate School of Medicine, Osaka University
- Dr. David G. Hoel*, Distinguished University Professor, Department of Medicine, Medical University of South Carolina, and Principal Scientist, Exponent Inc.
- Dr. Michael N. Cornforth*, Professor and Director of Biology Division, Department of Radiation Oncology, The University of Texas Medical Branch
- Dr. Francesca Dominici*, Professor of Biostatistics, Department of Biostatistics; Senior Associate Dean for Research, Office of the Dean, Harvard School of Public Health
- Dr. Jonine Bernstein*, Attending Epidemiologist, Co-Program Leader, Survivorship, Outcomes and Risk Program, Memorial Sloan Kettering Cancer Center

Special Scientific Advisors

- Dr. Hirotugu Ueshima*, Professor Emeritus, Shiga University of Medical Science and Special Contract Professor, Center for Epidemiologic Research in Asia, Shiga University of Medical Science
- Dr. Marjan Boerma*, Associate Professor, University of Arkansas for Medical Sciences, Department of Pharmaceutical Sciences, Division of Radiation Health