

Collaborative and Institutional Publications

The following manuscripts are not based on research connected to specific protocols. Rather, they generally represent collaborative work, institutionally authored publications, or publications based on pilot studies. They are arranged by department.

Director

◆ Walsh L, Zhang W, Shore RE, Auvinen A, Laurier D, Wakeford R, Jacob P, Gent N, Anspaugh LR, Schüz J, Kesminiene A, van Deventer E, Tritscher A, del Rosario Pérez M: A framework for estimating radiation-related cancer risks in Japan from the 2011 Fukushima nuclear accident. *Radiat Res* 2014 (November); 182(5):556–72.

Clinical Studies, Hiroshima

◆ Akamatsu S, Hayes CN, Tsuge M, Miki D, Akiyama R, Abe H, Ochi H, Hiraga N, Imamura M, Takahashi S, Aikata H, Kawaoka T, Kawakami Y, Ohishi W, Chayama K: Differences in serum microRNA profiles in hepatitis B and C virus infection. *J Infect Dis* 2015 (March); 70(3):273–87.

◆ Fujino H, Hiroshima Liver Study Group (RERF: Ohishi W): Predictive value of the IFNL4 polymorphism on outcome of telaprevir, peginterferon, and ribavirin therapy for older patients with genotype 1b chronic hepatitis C. *J Gastroenterol* 2014 (December); 49(12):1548–56.

◆ Ohishi W, Chayama K: The relationship of elevated IL-6 and increased risk of hepatocellular carcinoma. *Nippon Rinsho [Jpn J Clin Med]* 2015 (January); 73(Suppl 1):217–21. (Japanese)

◆ Satoh M, Ohkubo T, Asayama K, Murakami Y, Sakurai M, Nakagawa H, Iso H, Okayama A, Miura K, Imai Y, Ueshima H, Okamura T; Evidence for Cardiovascular Prevention From Observational Cohorts in Japan (EPOCH-JAPAN) Research Group (RERF: Yamada M): Combined effect of blood pressure and total cholesterol levels on long-term risks of subtypes of cardiovascular death: Evidence for Cardiovascular Prevention from Observational Cohorts in Japan. *Hypertension* 2015 (March); 65(3):517–24.

Clinical Studies, Nagasaki

◆ Haraguchi A, Fujishima K, Ando T, Mori F, Imaizumi M, Abiru N, Yamasaki H, Matsumoto K, Takamura N, Kawakami A: Multiple drug combination of anti-diabetic agents as a predictor for poor clinical response to liraglutide. *Minerva Endocrinol* 2014 (December); 39(4):289–97.

◆ Hayashida N, Imaizumi M, Shimura H, Furuya F, Okubo N, Asari Y, Nigawara T, Midorikawa S, Kotani K, Nakaji S, Ohtsuru A, Akamizu T, Kitaoka M, Suzuki S, Taniguchi N, Yamashita S, Takamura N: Thyroid ultrasound findings in a follow-up survey of children from three Japanese prefectures: Aomori, Yamanashi, and Nagasaki. *Sci Rep* 2015 (March); 5:9046. doi: 10.1038/srep09046

◆ Ikeoka T, Ando T, Imaizumi M, Ueki I, Usa T, Kawakami A: Moderate to severe nausea in radioactive iodine (RAI) therapy is associated with the RAI dose per body weight and was not prevented by ramosetron. *Endocrine* 2014 (May); 46(1):131–7.

Genetics

◆ Kodama Y: Genetic effects of atomic bomb radiation on humans. Sutou S, ed. *Fukushima Nuclear Accident: Global Implications, Long-Term Health Effects and Ecological Consequences*. New York: Nova Science Publishers; 2015 (March), pp 77–88.

◆ Shimamoto A, Kagawa H, Zensho K, Sera Y, Kazuki Y, Osaki M, Oshimura M, Ishigaki Y, Hamasaki K, Kodama Y, Yuasa S, Fukuda K, Hirashima K, Seimiya H, Koyama H, Shimizu T, Takemoto M, Yokote K, Goto M, Tahara H: Reprogramming suppresses premature senescence phenotypes of Werner Syndrome cells and maintains chromosomal stability over long-term culture. *PLoS ONE*; 2014 (November), 9(11): e112900.

Radiobiology/Molecular Epidemiology

◆ Kyoizumi S: T-cell receptor mutation assay for monitoring human genotoxic exposure. Sierra LM, Gaivão I, eds. *Genotoxicity and DNA Repair. A Practical Approach*. New York: Humana Press; 2014, pp 159–67.

Epidemiology, Hiroshima

◆ Ito Y et al., the J-CANSIS Research Group (RERF: Sugiyama H): Long-term survival and conditional survival of cancer patients in Japan using population-based cancer registry data. *Cancer Sci* 2014 (November); 105(11): 1480–6.

◆ Sakai A, Ohira T, Hosoya M, Ohtsuru A, Satoh H, Kawasaki Y, Suzuki H, Takahashi A, Kobashi G, Ozasa K, Yasumura S, Yamashita S, Kamiya K, Abe M and for the Fukushima Health Management Survey Group: Life as an evacuee after the Fukushima Daiichi nuclear power plant accident is a cause of polycythemia: the Fukushima Health Management Survey. *BMC Public Health* 2014 (December); 14:1318.

◆ Sakai A, Ohira T, Hosoya M, Ohtsuru A, Satoh H, Kawasaki Y, Suzuki H, Takahashi A, Kobashi G, Ozasa K, Yasumura S, Yamashita S, Kamiya K, Abe M and for the Fukushima Health Management Survey Group: White blood cell, neutrophil, and lymphocyte counts in individuals in the evacuation zone designated by the government after the Fukushima Daiichi Nuclear Power Plant accident: The Fukushima Health Management Survey. *J Epidemiol* 2015 (January); 25(1):80–7.

Statistics

◆ Furukawa K: The importance of study designs and statistical analysis in epidemiology. *Clin Calcium* 2014 (May); 24(5):703–10. (Japanese)

◆ Tekwe CD, Carter RL, Cullings HM, Carroll RJ: Multiple indicators, multiple causes measurement error models. *Stat Med* 2014 (November); 33(10):4469–81.

Manuscript in Press

⌘ Crowley KD, Cullings HM, Landes RD, Shore RE, Ullrich RL: Comments on estimating risks of low radiation doses—A critical review of the BEIR VII Report and use of the linear no-threshold (LNT) hypothesis by Edward J. Calabrese and Michael K. O'Connor [Letter to the editor]. *Radiat Res.*

Collaborative and Institutional Oral Presentations

The following oral presentations were not linked to specific research protocols but based on pilot studies, or represent collaborative work with outside organizations and general research activities. They are arranged by department.

Senior Scientist

❖ Kodama K. How large are the radiation doses and risks from Fukushima? 47th Annual Meeting of the Society for Epidemiologic Research, 25–26 June 2014, Seattle, Washington, USA

Genetics

❖ Satoh Y, Fujimoto A, Asakawa J. Mutations identified in cell clones derived from X-irradiated human cultured cells by whole genome sequencing. 60th Annual Meeting of the Radiation Research Society, 21–24 September 2014, Las Vegas, Nevada, USA

❖ Asakawa J, Fujimoto A, Satoh Y, Miura A, Nakamoto Y, Nishikori E, Imanaka M, Kodaira M. Mutations identified by whole genome sequencing of DNA samples derived from X-irradiated human cell clones. 57th Annual Meeting of the Japan Radiation Research Society, 1–3 October 2014, Kagoshima

❖ Kodaira M, Miura A, Imanaka M, Tsuji T, Kitamura J, Nakamoto Y, Kamiguchi Y, Nakamura N, Asakawa J. Estimation of genetic effects of radiation in immature oocytes of rats: Characteristics of mutations detected by using high-density microarray. 57th Annual Meeting of the Japan Radiation Research Society, 1–3 October 2014, Kagoshima

Epidemiology, Hiroshima

❖ Ozasa K, Sadakane A, Fukushima W, Oofuji S. Advocacy of the prevention and control of influenza by vaccination. 73rd Annual Meeting of the Japanese Society of Public Health, 5–7 November 2014, Utsunomiya

Statistics

❖ Nakashima E. Modified GEE1 for the analysis of multivariate heterogeneous variances gaussian data. FY2014 Annual Meeting of the Japanese Biometric Society, 23–24 May 2014, Tokyo

❖ Kim YM. A simple method of power analysis based on “Proportion Explained” to assess mediated effects for a dichotomous outcome. 2014 WNAR/IMS Conference, 15–18 June 2014, Honolulu, Hawaii, USA

❖ Landes RD. Recommendations for interval estimators of relative potency. 2014 WNAR/IMS Conference, 15–18 June 2014, Honolulu, Hawaii, USA

❖ Nakashima E. The modified GEE1 and the linear mixed effect models for the longitudinal heteroscedastic gaussian data: Application to the longitudinal systolic blood pressure data from age 9 to 14 years of A-bomb survivors exposed *in utero*. FY2014 Japan Joint Statistical meeting, 13–16 September 2014, Tokyo

❖ Cullings HM. Evaluation of the risk of *de novo* variation in offspring due to parental radiation exposure in the cohort of Japanese A-bomb survivors. 21st International Meeting Conference on Radiation and Health, 21–24 September 2014, Las Vegas, Nevada, USA

Scientific Lectures and Seminars Presented at RERF

1 April 2014–31 March 2015

The following presentations were made during the fiscal year by researchers internal and external to RERF at the Hiroshima Laboratory. They appear in chronological order.

18 April 2014, **Akihiro Fujimoto**, Senior Scientist, Laboratory for Medical Science Mathematics RIKEN, Center for Integrative Medical Sciences (IMS), Yokohama: “Comprehensive analysis of genetic variation by whole genome sequencing”

21 April 2014, **Tony Riddell**, Data Manager, Epidemiology Department, Centre for Radiation, Chemicals and Environmental Hazards, Public Health England, U.K.: “The Past, Present and Future of the Assessment of Plutonium Exposure Risks”

25 April 2014, **Munehika Misumi**, Research Scientist, Department of Statistics, Radiation Effects Research Foundation, The 282nd Hiroshima Statistics Study Group Meeting: “Application of simulation-extrapolation (SIMEX) to the RERF Life Span Study data”

12 May 2014, **John B. Little**, Professor Emeritus, Department of Genetics and Complex Diseases, Harvard University, U.S.A.: “How May ‘Non-Targeted’ Effects of Radiation Influence the Risk of Low Dose Exposures”

12 May 2014, **Zhi-Min Yuan**, Professor, Department of Genetics and Complex Diseases, Harvard University, U.S.A.: “The Metabolic Response to Low Dose Irradiation”

6 June 2014, **Shinpei Imori**, Department of Mathematics, Graduate School of Science, Hiroshima University, The 283rd Hiroshima Statistics Study Group Meeting: “Two-step model selection method in high-dimensional data”

7 July 2014, **Jorge Leon-Cruz**, M.S. Biostatistics, College of Public Health, University of Iowa, U.S.A.: “Predicting change in hearing ability over time using clustering and multinomial logistic regression”

18 July 2014, **Hiroko Kato Solvang**, Institute of Marine Research, Norway, The 284th Hiroshima Statistics Study Group Meeting: “Estimation of an optimum threshold related to T-category of breast cancer by differential gene expression”

13 August 2014, **Kaitlin E. Kelly-Reif**, Japan Society for the Promotion of Science (JSPS) Summer Program Fellow, Department of Epidemiology, University of North Carolina at Chapel Hill, U.S.A.: “Geostatistical estimation of residual radiation from the Hiroshima atomic bomb”

1 September 2014, **William F. Morgan**, Director of Radiation Biology and Biophysics, Biological Sciences Division, Pacific Northwest National Laboratory, U.S.A.: “Issues in Low Dose Radiation Research”

3 September 2014, **Curtis C. Harris**, Chief, Laboratory of Human Carcinogenesis, Center for Cancer Research,

National Cancer Institute, National Institutes of Health, U.S.A.: “Interweaving the threads of microRNA inflammation and p53 networks in the tapestry of cancer and aging”

19 September 2014, **Fukiko Mitsui**, Visiting Research Associate, Department of Clinical Studies, Radiation Effects Research Foundation: “Importance of serum concentration of Adefovir for Lamivudine-Adefovir combination therapy in patients with Lamivudine-resistant chronic hepatitis B”

3 October 2014, **Reid D. Landes**, Senior Scientist, Department of Statistics, Radiation Effects Research Foundation, The 285th Hiroshima Statistics Study Group Meeting: “A Bayesian calibration involving nonlinear mixed effects models”

24 October 2014, **Ginji Endo**, Professor, Osaka City University Graduate School of Medicine: “Epidemiological elucidation and analysis of the cause of cholangiocarcinoma among printing workers”

28 October 2014, **Yueh-Yun Chi**, Assistant Professor, Department of Biostatistics, University of Florida, U.S.A.: “Statistical Considerations for Longitudinal Design and Data Analysis”

31 October 2014, **Yasunori Fujikoshi**, Emeritus Professor of Hiroshima University, Advisor of the Hiroshima University Statistical Science Research Core, The 286th Hiroshima Statistics Study Group Meeting: “Estimation methods of the rank of a mean parameter matrix in multivariate linear model and their high-dimensional consistency properties”

18 November 2014, **Gregory D. Sempowski**, Professor, Departments of Medicine and Pathology, Scientific Director for Shared Resources, Duke Human Vaccine Institute, U.S.A.: “Enhancing your research with multiplex cytokine profiling”

18 November 2014, **Nan-ping Weng**, Senior Investigator and Chief, Lymphocyte Differentiation Section, Laboratory of Immunology, National Institute on Aging (NIH), U.S.A.: “Genetic and epigenetic factors in aging of human immune system”

28 November 2014, **Hiroshi Yamada**, Professor, Department of Economics, Hiroshima University, The 287th Hiroshima Statistics Study Group Meeting: “Selecting the Tuning Parameter of the l1 Trend Filter”

12 December 2014, **Eiji Nakashima**, Assistant Department Chief, Department of Statistics, Radiation Effects Research Foundation, The 288th Hiroshima Statistics Study Group Meeting: “Linear Regression with Classical and Berkson Independent Additive Covariate Measurement Errors”

14 January 2015, **Kismet (Anna) Cordova**, Applied Biostatistics & Bioinformatics, Colorado School of Public Health, U.S.A.: “The Impact of Marijuana Use on the Relationship between Personality and Anxiety/Depression”

23 January 2015, **Inge Koch**, Associate Professor, School of Mathematical Sciences, The University of Adelaide, Australia, The 289th Hiroshima Statistics Study Group Meeting: “Analysis of Spatial Data from Proteomics Imaging Mass Spectrometry”

RERF Colloquia

Rather than formal seminars, RERF Colloquia are presentations mainly focused on preliminary or ongoing studies, with the aim of obtaining constructive ideas from RERF researchers.

18 April 2014, **Eric J. Grant**, Assistant Department Chief, Department of Epidemiology, Hiroshima, “Risk of death among the children of the atomic bomb survivors: an update after 62 years of follow-up”

16 May 2014, **Eiji Nakashima**, Assistant Department Chief, Department of Statistics, “Modified GEE1 for the analysis of multivariate heteroscedastic variances gaussian data: Application to the longitudinal systolic blood pressure data from Age 9 to 14 years of A-bomb survivors exposed *in utero*”

18 July 2014, **Mieko Kodaira**, Adjunct Specialist (Research Scientist), Laboratory of Biochemical Genetics, Department of Genetics, “Can we distinguish radiation-associated mutations from spontaneous mutations? Molecular characterization of spontaneous and radiation-associated mutations in mouse germ cells”

22 August 2014, **Masataka Taga**, Research Scientist, Laboratory of Cell Biology, Department of Radiobiology/Molecular Epidemiology, “Analysis of *ALK* fusion genes in lung cancer among atomic-bomb survivors”

19 September 2014, **Michiko Yamada**, Chief, Division of Radiology, Department of Clinical Studies, Hiroshima, “Longitudinal analyses of the AHS measurements”

17 October 2014, **Eric J. Grant**, Assistant Department Chief, Department of Epidemiology, Hiroshima, “Solid cancer incidence among atomic bomb survivors, updated analysis through 2009”

21 November 2014, **Reid D. Landes**, Senior Scientist, Department of Statistics, “Examples of bootstrap and Bayesian methods to estimate ratios”

19 December 2014, **Yasunari Satoh**, Research Scientist, Department of Genetics, “Mutations identified in cell clones derived from X-irradiated human cultured cells by whole genome sequencing”

16 January 2015, **Junko Kajimura**, Fixed-Term Scientist, Laboratory of Immunology, Department of Radiobiology/Molecular Epidemiology, “Effects of radiation exposure and aging on human circulating dendritic cells (DCs)”

Awards Received by RERF Employees

1 April 2014–31 March 2015

13 June 2014, **Michio Sunamoto**, Assistant Section Chief, Pathology Laboratory, Department of Epidemiology, Hiroshima, and **Akiko Nagayoshi**, Assistant Section Chief, Tumor and Tissue Registry Office, Department of Epidemiology, Nagasaki, received the 2014 Distinguished Clerical Service Award, which is presented to those who have achieved a certain level of technical skill in regional cancer registry operations, at the 23rd meeting of the Japanese Association of Cancer Registries, held in the city of Tsu, Mie prefecture.

13 October 2014, **RERF** was presented with an honorary award by the Latvian Republican Union Chernobyl for its contributions over many years, including the provision of training for medical workers and researchers from Latvia as well as its cooperation in health management of the military veterans who worked at the Chernobyl nuclear accident site. On behalf of RERF, **Tomonori Hayashi**, PhD, Assistant Chief, RERF Department of Radiobiology/Molecular Epidemiology, attended the award ceremony held in Riga, Latvia.

22 October 2014, **Toshiteru Okubo**, PhD, RERF Chairman, received the 2014 Distinguished Service Award of the Japan Industrial Safety and Health Association (JISHA) at the general conference of the 73rd National Industrial Safety and Health Convention, held in Hiroshima. For many years, he has worked on research in the field of occupational hygiene and industrial medicine, contributing to the development of occupational health indices and the establishment of basic theories on industrial health activities.

FY2014 External Research Funds

Name of Outside Organization	Number of Grants	Research Funds (Amount of Funds from Funding Organizations)
Ministry of Health, Labour and Welfare (MHLW)	5	¥4,100,000
Japan Society for the Promotion of Science (JSPS) [Independent administrative entity under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology (MEXT)]	14	¥56,320,000
Nuclear Safety Research Association (NSRA) [Contract project organization commissioned by the Ministry of the Environment (MOE)]	1	¥4,419,163
Smoking Research Foundation	1	¥2,000,000
National Institute of Genetics	1	¥176,000
Japan Heart Foundation	1	¥300,000 (Balance carried over from previous year)
U.S. National Cancer Institute (NCI) Contract	1	¥17,340,000
U.S. National Institute of Allergy and Infectious Diseases	1	¥169,700,000
Grand Total	25	¥254,355,163

Notes) · These amounts include indirect costs.

· These amounts may include subsidies allocated to collaborators.

FY2014 Externally Funded Research

Title of Research	Name and Location of Entrusting Outside Organization and Chief of Research Group or Principal Investigator in Charge	Collaborator(s) at RERF	Study Period	Research Funds
<p>Department of Clinical Studies, Hiroshima Longitudinal/cross-sectional studies to generate evidence for diagnosis/management of metabolic syndrome to be used for specified medical checkup and health guidance</p>	<p>MHLW Scientific Research Grant Comprehensive Research on Lifestyle-related Diseases including Cardiovascular Diseases and Diabetes Mellitus Takashi Kadowaki, Professor, Graduate School of Medicine, The University of Tokyo</p>	<p>Michiko Yamada Cooperative Investigator: Yoshimi Tatsukawa</p>	<p>1 April 2014– 31 March 2015</p>	<p>¥1,100,000</p>
<p>Understanding risk-factor management priorities and establishing individual risk-assessment evidence through development of large-scale cohort-based collaborative studies</p>	<p>MHLW Scientific Research Grant Comprehensive Research on Lifestyle-related Diseases including Cardiovascular Diseases and Diabetes Mellitus Tomonori Okamura, Professor, School of Medicine, Keio University</p>	<p>Michiko Yamada</p>	<p>1 April 2014– 31 March 2015</p>	<p>¥1,800,000</p>
<p>The effects of radiation exposure on the development of arteriosclerotic diseases</p>	<p>JSPS Grant-in-Aid for Scientific Research Young Scientists (B) Yoshimi Tatsukawa, Associate Senior Scientist, Division of Health Examinations, Department of Clinical Studies, RERF</p>	<p>1 April 2014– 31 March 2015</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥800,000 Indirect cost ¥240,000</p>
<p>Do benefits from quitting tobacco use on cardiovascular disease incidence exceed the impact of weight gain following cessation of smoking?—A 30-year follow-up study</p>	<p>Japan Heart Foundation and Astellas/Pfizer Grant for Research on Atherosclerosis Update Ikuno Takahashi, Research Scientist, Division of Clinical Laboratories, Department of Clinical Studies, RERF</p>	<p>1 September 2013– 31 March 2015</p>	<p>1 September 2013– 31 March 2015</p>	<p>¥300,000 Carryover from previous year (No new grant for FY2014)</p>
<p>Department of Genetics Study of genetic effects of atomic-bomb radiation using high-density microarray CGH</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (B) Mieko Kodaira, Research Scientist (Adjunct), Biochemical Genetics Laboratory, Department of Genetics, RERF</p>	<p>Jun-ichi Asakawa Kyoji Furukawa (Department of Statistics) Associate Investigator: Nori Nakamura (Consultant of the Department)</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥700,000 Indirect cost ¥210,000</p>
<p>Estimation of genetic risk of radiation on immature oocytes of rats by using next generation sequencer</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (C) Yasunari Satoh, Research Scientist, Biochemical Genetics Laboratory, Department of Genetics, RERF</p>	<p>Mieko Kodaira Jun-ichi Asakawa Associate Investigator: Nori Nakamura (Consultant of the Department)</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥300,000 Indirect cost ¥90,000</p>
<p>Elucidation of tissue-dependent chromosome aberration frequencies induced by ionizing radiation exposure to the mouse fetus</p>	<p>JSPS Grant-in-Aid for Scientific Research Young Scientists (B) Kanya Hamasaki, Research Scientist, Cytogenetics Laboratory, Department of Genetics, RERF</p>	<p>1 April 2014– 31 March 2015</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥1,000,000 Indirect cost ¥300,000</p>

FY2014 Externally Funded Research

Title of Research	Name and Location of Entrusting Outside Organization and Chief of Research Group or Principal Investigator in Charge	Collaborator(s) at RERF	Study Period	Research Funds
<p>Department of Genetics <i>In vivo</i>, <i>in situ</i> mutagenic risk evaluation of radiation and environmental chemicals using newly developed knock-in mouse systems</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (S) Asao Noda, Assistant Chief, Department of Genetics, RERF</p>	<p>Kanya Hamasaki</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥27,200,000 Indirect cost ¥8,160,000 The above amount includes funds allocated to the collaborators at other institutes (The University of Tokyo, Osaka University, and Ibaraki University).</p>
<p>Development of new methods that specifically detect and measure radiation-induced unreparable DSBs</p>	<p>JSPS Grant-in-Aid for Scientific Research Challenging Exploratory Research Asao Noda, Assistant Chief, Department of Genetics, RERF</p>	<p>Yoshiaki Kodama</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥800,000 Indirect cost ¥240,000 ¥200,000</p>
<p>Study on the information of Bikini hydrogen bomb</p>	<p>MHLW Scientific Research Grant Special Research Project Makoto Akashi, Director, National Institute of Radiological Science</p>	<p>Yoshiaki Kodama</p>	<p>16 January 2015– 31 March 2015</p>	<p>Direct cost ¥157,600,000 Indirect cost ¥12,100,000</p>
<p>Department of Radiobiology/Molecular Epidemiology Studies of immunosenescence and other late effects of acute ionizing radiation exposure in atomic-bomb survivors</p>	<p>U.S. National Institute of Allergy and Infectious Diseases Principal Investigator: Kei Nakachi, RERF Consultant Co-principal Investigators: Yoichiro Kusunoki, Chief, Department of Radiobiology/Molecular Epidemiology, RERF Tomonori Hayashi, Assistant Chief, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Robert L. Ulrich (Associate Chief of Research) Seishi Kyoizumi Reiko Ito Junko Kajimura Kengo Yoshida Waka Ohishi (Department of Clinical Studies) Kotaro Ozasa (Department of Epidemiology) Kyoji Furukawa (Department of Statistics) Munechika Misumi (Department of Statistics)</p>	<p>1 October 2009– 30 September 2014</p>	<p>Direct cost ¥157,600,000 Indirect cost ¥12,100,000</p>

FY2014 Externally Funded Research

Title of Research	Name and Location of Entrusting Outside Organization and Chief of Research Group or Principal Investigator in Charge	Collaborator(s) at RERF	Study Period	Research Funds
<p>Department of Radiobiology/Molecular Epidemiology Molecular epidemiology study of inflammation-associated disease development on the basis of long-term follow-up of atomic-bomb survivors</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (B) Tomonori Hayashi, Assistant Chief, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Associate Investigators: Kei Nakachi (RERF Consultant), Takahiko Ogawa</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥4,300,000 Indirect cost ¥1,290,000 The above amount includes funds allocated to the collaborator at The University of Tokyo.</p>
<p>Molecular epidemiology study of cigarette smoking effects on immunity- and inflammation-related biomarkers and lifestyle-related disease development</p>	<p>Smoking Research Foundation Tomonori Hayashi, Assistant Chief, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Cooperative Investigators: Norio Takahashi (Consultant attached to Associate Chief of Research's Office) Waka Ohishi (Department of Clinical Studies) Munehika Misumi (Department of Statistics) Research Participant: Hideko Murakami</p>	<p>1 April 2014– 31 March 2015</p>	<p>¥2,000,000</p>
<p>Can lower-dose radiation cause cardiovascular disease?—Assessment using animal models</p>	<p>Nuclear Safety Research Association MOE Research Project for Nuclear-power Disaster Influence in FY2014 (Research Regarding the Health Effects of Radiation) Yasuharu Niwa, Associate Senior Scientist, Cell Biology Laboratory, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Reiko Ito</p>	<p>1 April 2014– 10 March 2015</p>	<p>¥4,419,163</p>
<p>Biological significance of <i>EML4-ALK</i> fusion gene in radiation thyroid carcinogenesis</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (C) Kiyohiro Hamatani, Research Scientist, Cell Biology Laboratory, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Reiko Ito</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥1,200,000 Indirect cost ¥360,000 The above amount includes funds allocated to the collaborator at Saitama Medical University.</p>

FY2014 Externally Funded Research

Title of Research	Name and Location of Entrusting Outside Organization and Chief of Research Group or Principal Investigator in Charge	Collaborator(s) at RERF	Study Period	Research Funds
<p>Department of Radiobiology/Molecular Epidemiology Molecular epidemiological study on gynecologic cancer and its correlation with radiotherapy outcome in Korean and Japanese populations</p>	<p>JSPS Bilateral Programs Japan-Korea Joint Research Project (NRF) Tomonori Hayashi, Assistant Chief, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Associate Investigators: Waka Ohishi (Department of Clinical Studies), Kei Nakachi (RERF Consultant) Cooperative Investigators: Hu Yiqun, Kim Young Min (Department of Statistics)</p>	<p>1 April 2014– 31 March 2015</p>	<p>¥1,200,000</p>
<p>Transcriptome and molecular pathway analysis to characterize phenotypes of human immunological aging</p>	<p>National Institute of Genetics (Japan) FY2014 Collaborative Research and Research Meeting Research Organization of Information and Systems Collaborative Research (A) Kengo Yoshida, Research Scientist, Immunology Laboratory, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Yoichiro Kusunoki Tomonori Hayashi Munehika Misumi (Department of Statistics)</p>	<p>1 April 2014– 31 March 2015</p>	<p>¥176,000</p>
<p>Analysis of radiation effects on the formation of fusion genes involved in lung cancer</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (C) Masataka Taga, Research Scientist, Cell Biology Laboratory, Department of Radiobiology/Molecular Epidemiology, RERF</p>	<p>Kiyohiro Hamatani Reiko Ito</p>	<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥1,300,000 Indirect cost ¥390,000</p>
<p>Department of Epidemiology, Hiroshima Support for epidemiological studies of cancer among atomic bomb survivors</p>	<p>U.S. National Cancer Institute (NCI) Contract National Cancer Institute, Bethesda, Maryland, USA NCI Contract HHSN261201400009C Kotaro Ozasa, Chief, Department of Epidemiology, RERF</p>	<p>Project Managers: Eric J. Grant, Harry M. Cullings (Department of Statistics)</p>	<p>1 April 2014– 31 July 2019</p>	<p>Direct cost ¥11,960,000 Indirect cost ¥5,380,000</p>
<p>Immunohistological epidemiologic study of breast cancer among atomic-bomb survivors</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (C) Kotaro Ozasa, Chief, Department of Epidemiology, RERF</p>		<p>1 April 2014– 31 March 2015</p>	<p>Direct cost ¥0 Indirect cost ¥0 With extension of the funded term, the unexecuted amount for FY2013 (¥289,124) was used. No grant was provided for FY2014.</p>

FY2014 Externally Funded Research

Title of Research	Name and Location of Entrusting Outside Organization and Chief of Research Group or Principal Investigator in Charge	Collaborator(s) at RERF	Study Period	Research Funds
<p>Department of Epidemiology, Hiroshima Analytical epidemiologic study of effectiveness and safety, and application for countermeasure against vaccine preventable disease (VPD)</p>	<p>MHLW Scientific Research Grant Research on Emerging and Re-emerging Infectious Diseases as New Influenza Yoshio Hirota, Director, Clinical Epidemiology Research Center, Medical Co. LTA</p>	Kotaro Ozasa	1 April 2014– 31 March 2015	¥500,000
<p>Study to grasp trends of cancer and medical care for cancer by using materials on nationally compiled prefecture-based cancer registry data and existing cancer statistics</p>	<p>MHLW Scientific Research Grant Comprehensive research project for cancer control Tomohiro Matsuda, Head, Population-based Cancer Registry Section, Division of Surveillance, Center for Cancer Control and Information Services, National Cancer Center</p>	Kotaro Ozasa	1 April 2014– 31 March 2015	¥500,000
<p>Department of Information Technology Construction of the integrated database of an epidemiological analysis for the people living in Semipalatinsk test site area</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (B) Hiroaki Katayama, Chief, Department of Information Technology, RERF</p>		1 April 2014– 31 March 2015	<p>Direct cost ¥3,700,000 Indirect cost ¥1,110,000 The above amount includes funds allocated to the collaborators at other institutes (Hiroshima University, Kanazawa University, Shimane University, and Tsukuba University).</p>
<p>Study on exposure to radioactive fallout in people residing around Semipalatinsk nuclear test site—Dose estimation and analysis of radiation's health effects—</p>	<p>JSPS Grant-in-Aid for Scientific Research Scientific Research (A) Masaharu Hoshi, Professor Emeritus, Institute for Peace Science, Hiroshima University</p>	Hiroaki Katayama	1 April 2014– 31 March 2015	<p>Direct cost ¥300,000 Indirect cost ¥90,000</p>

FY2014 Externally Funded Research

Title of Research	Name and Location of Entrusting Outside Organization and Chief of Research Group or Principal Investigator in Charge	Collaborator(s) at RERF	Study Period	Research Funds
Other Office Can radiation increase the risk of cardiovascular diseases? —Evaluation by animal model studies	JSPS Grant-in-Aid for Scientific Research Scientific Research (C) Norio Takahashi, Consultant attached to Associate Chief of Research's Office, RERF	Waka Ohishi (Department of Clinical Studies) Yasuharu Niwa (Department of Radiobiology/Molecular Epidemiology) Associate Investigator: Hideko Murakami (Department of Radiobiology/Molecular Epidemiology)	1 April 2014– 31 March 2015	Direct cost ¥800,000 Indirect cost ¥240,000
Grand Total				¥254,355,163

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Clinical Studies, Hiroshima NI-HON-SEA (Nippon-Honolulu-Seattle) Study (Prevalence and incidence of dementia)	Yamada M	Grant EJ (Department of Epidemiology) Cologne JB (Department of Statistics) Ozasa K (Department of Epidemiology) Nakachi K (RERF Consultant) Nakashima E (Department of Statistics)	Kasagi F (Radiation Effects Association) Sasaki H (Yasuda Women's University) Mimori Y (Hiroshima International University) White L (Honolulu Aging Study) Larson E (Center for Health Studies at Group Health Cooperative, Seattle, USA)	1992
A nested case-control study of breast and endometrial cancer in the cohort of Japanese atomic-bomb survivors	Ohishi W	Grant EJ (Department of Epidemiology) Cologne JB (Department of Statistics) Ozasa K (Department of Epidemiology) Nakachi K (RERF Consultant) Nakashima E (Department of Statistics)	Sharp GB (U.S. National Institute of Allergy and Infectious Diseases) Eguchi H (Saitama Medical University) Izumi S (Oita University) Key TJ (Imperial Cancer Research Fund, UK) Stevens RG (University of Connecticut Health Center, USA) Berrington de Gonzalez A (U.S. National Cancer Institute)	2002
A case-control study of atrophic gastritis and gastric cancer using frozen sera and genome DNA: Identification of new biomarkers for chronic gastritis associated with gastric cancer	Ohishi W	Ueda K Cullings HM (Department of Statistics) Hayashi T (Department of Radiobiology/Molecular Epidemiology) Mitsui F Hida A (Department of Clinical Studies, Nagasaki) Ozasa K (Department of Epidemiology)	Fujiwara S (Hiroshima Atomic Bomb Casualty Council) Tahara E (Hiroshima Cancer Seminar)	2004
Could genetic factors cause population bias among proximal A-bomb survivors?—A test of whether the same genetic factors are risk factors for high inflammatory status and myocardial infarction among A-bomb survivors 40–50 years later	Ohishi W	Takahashi I Cologne JB (Department of Statistics) Hida A (Department of Clinical Studies, Nagasaki)	Fujiwara S (Hiroshima Atomic Bomb Casualty Council)	2005
Inflammation and cancer incidence in atomic-bomb survivors	Tatsukawa Y	Cologne JB (Department of Statistics) Nakashima E (Department of Statistics) Ozasa K (Department of Epidemiology) Soda M (Department of Epidemiology, Nagasaki) Yamada M	Little MP (National Institutes of Health, USA)	2005

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
<p>Department of Clinical Studies, Hiroshima Assessment of statistical methods for intermediate risk factors in non-cancer disease and mortality</p>	William L. (University of Washington, USA)	Takahashi I Cologne JB (Department of Statistics) Kodama K (Chief Scientist)	Fujiwara S (Hiroshima Atomic Bomb Casualty Council) Akahoshi M (Keiju Hospital) Kopecky KJ (University of Washington, Fred Hutchinson Cancer Research Center, USA) Davis S (University of Washington, Fred Hutchinson Cancer Research Center, USA)	2006
Body mass index (BMI) and mortality	Thun M. (American Cancer Society)	Ohishi W Hida A (Department of Clinical Studies, Nagasaki) Shore RE (Vice Chairman and Executive Director)		2008
Evaluation of retinal arteriosclerosis and age-related macular degeneration using stored retina images with standardized measurements in relation to glaucoma development in atomic-bomb survivors and to association with aortic arteriosclerosis	Takahashi I	Misumi M (Department of Statistics) Nakashima E (Department of Statistics)	Yanagi M (Hiroshima University) Itakura K (Hiroshima University) Kawasaki R (Yamagata University) Yokoyama T (Hiroshima University) Takamatsu M (Hiroshima University) Kinoshita H (Nagasaki University) Tsuiki E (Nagasaki University) Uematsu M (Nagasaki University) Kumagami T (Nagasaki University)	2010
Study of body composition of the Hiroshima Adult Health Study population	Tatsukawa Y	Misumi M (Department of Statistics) Ohishi W Yamada M	Fujiwara S (Hiroshima Atomic Bomb Casualty Council) Harris TB (U.S. National Institute on Aging) Kasagi F (Radiation Effects Association)	2010
<p>Department of Clinical Studies, Nagasaki The association between subclinical thyroid dysfunction and cardiovascular disease and mortality. An individual participant pooled analysis of large international cohort studies</p>	Rodondi N (Inselspital University Hospital, University of Bern, Switzerland)	Imaizumi M	Gussekloo J (Leiden University Medical Center, the Netherlands)	2008

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Clinical Studies, Nagasaki The association between chronic kidney disease and cardiovascular disease among atomic-bomb survivors	Haruta D	Takahashi I (Department of Clinical Studies, Hiroshima) Hida A Imazumi M Yamada M (Department of Clinical Studies, Hiroshima) Ohishi W (Department of Clinical Studies, Hiroshima) Tatsukawa Y (Department of Clinical Studies, Hiroshima) Nakashima E (Department of Statistics) Misumi M (Department of Statistics)	Tsuneto A (Nagasaki University) Sera N (Nagasaki University) Neriishi K (Yachiyo Hospital) Fujiwara S (Hiroshima Atomic Bomb Casualty Council) Akahoshi M (Keiju Hospital)	2009
Study on the genetic background of short QT	Makita N (Nagasaki University)	Haruta D Ohishi W (Department of Clinical Studies, Hiroshima) Hida A	Akahoshi M (Keiju Hospital) Maemura K (Nagasaki University)	2011
Study for the epidemiological and genetic basis of progressive cardiac conduction defect	Makita N (Nagasaki University)	Haruta D Ohishi W (Department of Clinical Studies, Hiroshima) Hida A Nakashima E (Department of Statistics)	Akahoshi M (Keiju Hospital) Maemura K (Nagasaki University)	2012
Weight fluctuation and cancer and cardiovascular disease incidence and mortality in Japanese	Nanri A (National Center for Global Health and Medicine)	Haruta D Takahashi I (Department of Clinical Studies, Hiroshima) Soda M (Department of Epidemiology, Nagasaki) Ozasa K (Department of Epidemiology) Cologne JB (Department of Statistics) Cullings HM (Department of Statistics) Ohishi W (Department of Clinical Studies, Hiroshima) Hida A	Mizoue T (National Center for Global Health and Medicine) Araki Y (Kurume University) Akahoshi M (Keiju Hospital)	2012
Serum TSH within the reference range and the risk of coronary heart disease	Åsvold BO (Norwegian University of Science and Technology)	Imazumi M		2012

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
<p>Department of Clinical Studies, Nagasaki Serum TSH levels and the risk of stroke—Addendum to “The association between subclinical thyroid dysfunction and cardiovascular disease and mortality: An individual participant pooled analysis of large international cohort studies”</p>	van Dijk B (Erasmus Medical Center, the Netherlands)	Imaizumi M	Chaker L (Erasmus Medical Center, the Netherlands) Peeters RP (Erasmus Medical Center, the Netherlands) Franco O (Erasmus Medical Center, the Netherlands)	2013
<p>Subclinical thyroid dysfunction and adverse bone outcomes—Addendum to “The association between subclinical thyroid dysfunction and cardiovascular disease and mortality: An individual participant pooled analysis of large international cohort studies”</p>	Blum MR (Inselspital University Hospital, University of Bern, Switzerland)	Imaizumi M	da Costa B (Institute of Social and Preventive Medicine, University of Bern, Switzerland) Rodondi N (Inselspital University Hospital, University of Bern, Switzerland)	2013
<p>The association between thyroid status and the progression of renal function over time</p>	den Elzen W (Leiden University Medical Center, the Netherlands)	Imaizumi M Ohishi W (Department of Clinical Studies, Hiroshima)	Meuwese CL (Leiden University Medical Center, the Netherlands) Gussekkoo J (Leiden University Medical Center, the Netherlands) Rodondi N (Inselspital University Hospital, University of Bern, Switzerland)	2013
<p>Association of chronic kidney disease and albuminuria with cardiovascular disease among A-bomb survivors</p>	Sera N (Nagasaki University)	Hida A Haruta D Imaizumi M Takahashi I (Department of Clinical Studies, Hiroshima) Yamada M (Department of Clinical Studies, Hiroshima) Tatsukawa Y (Department of Clinical Studies, Hiroshima) Nakashima E (Department of Statistics) Ohishi W (Department of Clinical Studies, Hiroshima)	Akahoshi M (Keiju Hospital) Kawakami A (Nagasaki University)	2014
<p>The relation between low thyroid function and anemia, and the impact of both conditions on adverse outcomes: Addendum to RP A10-08 (The association between subclinical thyroid dysfunction and cardiovascular disease and mortality: an individual participant pooled analysis of large international cohort studies)</p>	den Elzen W (Leiden University Medical Center, the Netherlands)	Imaizumi M		2014

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Clinical Studies, Nagasaki The association between radiation and atrial fibrillation among atomic-bomb survivors	Haruta D	Landes RD (Department of Statistics) Hida A Imaizumi M Ichimaru S Takahashi I (Department of Clinical Studies, Hiroshima) Ohishi W (Department of Clinical Studies, Hiroshima)	Sera N (Nagasaki University) Akahoshi M (Keiju Hospital) Maemura K (Nagasaki University)	2014
Department of Genetics Molecular alterations in early-onset breast and ovarian cancers among atomic-bomb survivors	Mabuchi K (U.S. National Cancer Institute) Land CE (U.S. National Cancer Institute)	Hirai Y		2001
Mutation detection in rat oocytes	Kamiguchi Y (Asahikawa Medical College)	Asakawa J		2003
ESR measurements of tooth samples from Nagasaki survivors	Mine M (Nagasaki University)	Hirai Y Nakamura N (Consultant of the Department)		2005
ES cell targeting	Suemori H (Kyoto University)	Noda A		2007
Establishment of a recombinant mouse model for assessment of genetic effects of radiation at low doses	Mitani H (The University of Tokyo Graduate School)	Noda A		2009
Estimation of genetic effects of radiation in male germ cells of mice: Study for assessment of high-density microarray CGH platform	Shimada Y (National Institute of Radiological Sciences)	Asakawa J		2009
Evaluation of the nonmelanoma skin cancer risk among heterozygotes bearing a founder mutation allele unique to a Japanese population at xeroderma pigmentosum group A (XPA) gene	Mabuchi K (U.S. National Cancer Institute) Kraemer KH (U.S. National Cancer Institute)	Hirai Y Nakamura N (Consultant of the Department)		2009
Biological dosimetry in the residents of Namiotown in Fukushima prefecture	Yoshida M (Hiroshima University)	Kodama Y Hamasaki K		2013

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Genetics Estimation of genetic risk of radiation on mature oocytes of mice by using next generation sequencer	Shimada Y (National Institute of Radiological Sciences)	Satoh Y		2013
Estimation of genetic risk of radiation on mature oocytes of mice by using next generation sequencer	Sese J (National Institute of Advanced Industrial Science and Technology)	Satoh Y		2013
Department of Radiobiology/Molecular Epidemiology Study on gene alterations and expression in sporadic lung carcinogenesis	Sueoka E (Saga University) Aragane N (Saga University)	Nakachi K (RERF Consultant) Hayashi T Yoshida K Imai K (Consultant of the Department)		2002
Survey on frequencies of SNPs of various genes in a Japanese population	Yoshida T (National Cancer Center)	Nakachi K (RERF Consultant) Kusunoki Y Hayashi T Yoshida K Imai K (Consultant of the Department)		2002
Study on genetic susceptibility to stomach cancer	Yasui W (Hiroshima University)	Hayashi T Nakachi K (RERF Consultant) Ito R Imai K (Consultant of the Department)		2002
Study on the role of hypoxia-responsive gene, <i>HIF1α</i> , in radiation effects on cells	Tanimoto K (Hiroshima University)	Nakachi K (RERF Consultant) Imai K (Consultant of the Department)	Sueoka E (Saga University) Aragane N (Saga University) Eguchi H (Saitama Medical University)	2002
Study on thyroid cancer among A-bomb survivors (Hiroshima)	Hamatani K	Taga M Ito R	Arihiro K (Hiroshima University) Hayashi Y (Hiroshima City Asa Hospital)	2002
Study on the cytolethal distending toxin-induced apoptosis in peripheral lymphocytes	Sugai M (Hiroshima University) Ohara M (Hiroshima University)	Kusunoki Y Hayashi T Nakachi K (RERF Consultant)		2001
Study on the role of gap junctions in apoptosis induced by anticancer drugs combined with radiation	Ogawa T (Hiroshima Prefectural Hospital) Hayashi T	Nakachi K (RERF Consultant)	Trosko JE (Michigan State University, USA)	1998

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Radiobiology/Molecular Epidemiology Analyses of <i>TCR</i> and <i>HPRT</i> mutations in gene-targeted mice	Sasatani M (Research Institute for Radiation Biology and Medicine, Hiroshima University)	Kusunoki Y Nakachi K (RERF Consultant)	Kamiya K (Research Institute for Radiation Biology and Medicine, Hiroshima University)	2004
Molecular biological study on the genesis and development of sporadic breast cancer	Hayashi S (Tohoku University)	Nakachi K (RERF Consultant) Imai K (Consultant of the Department) Hayashi T	Eguchi H (Saitama Medical University)	2002
Study on the role of cell-to-cell communication in apoptosis of cancer cells	Hayashi T	Hayashi T	Ogawa T (Hiroshima Prefectural Hospital)	2005
Study on the radiation effects on immunological aging and intracellular reactive oxygen species	Hayashi T	Hu Yiqun	Hayashi I (Hiroshima University)	2006
Study on lung and colorectal cancers developed among atomic-bomb survivors	Ito R	Taga M Hamatani K Nakachi K (RERF Consultant)	Yasui W (Hiroshima University) Eguchi H (Saitama Medical University)	2004
Study on gastric cancer developed among atomic-bomb survivors	Yasui W (Hiroshima University)	Hamatani K Taga M Ito R Nakachi K (RERF Consultant)	Yasui W (Hiroshima University)	2006
Study on the mechanisms of radiation-induced genetic instability using peripheral lymphocytes	Homma M (National Institute of Health Sciences)	Kusunoki Y Hamasaki K (Department of Genetics)	2008	
Clinico- and molecular-pathological analysis of sporadic gastric cancer	Yasui W (Hiroshima University)	Ito R Nakachi K (RERF Consultant)	2004	
Development of new statistical models for RERF case-studies	Izumi S (Oita University)	Nakachi K (RERF Consultant) Furukawa K (Department of Statistics)	2006	
Study on thyroid cancer among A-bomb survivors (Nagasaki)	Hamatani K	Soda M (Department of Epidemiology, Nagasaki)	Nakashima M (Nagasaki University) Sekine I (Nagasaki Red Cross Blood Center) et al.	2005
Role of inflammatory cytokines in sporadic stomach cancer	Suganuma M (Saitama Cancer Center)	Imai K (Consultant of the Department) Hayashi T Nakachi K (RERF Consultant)	2006	

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Radiobiology/Molecular Epidemiology Study on molecular epidemiological characteristics of lung cancer development among A-bomb survivors	Taga M	Hamatani K Ito R	Harris CC (U.S. National Cancer Institute) Yasui W (Hiroshima University) Tabara E (Hiroshima Cancer Seminar)	2004
A collaboration study on cardiovascular disease between cohort studies throughout the Asian-Pacific region	Asian Pacific Cohort Studies Collaboration (The George Institute for International Health, Australia)	Nakachi K (RERF Consultant) Imai K (Consultant of the Department)		1996
Stem cell biology with special reference to radiation and drug effects	Hayashi T	Nakachi K (RERF Consultant)	Hayashi I (Hiroshima University)	2002
Molecular analysis of thyroid tumors	Takeichi N (Takeichi Clinic)	Hamatani K Nakachi K (RERF Consultant) Kusunoki Y		2008
The study of circulatory diseases using animal models irradiated with lower doses	Inaba T (Hiroshima University)	Niwa Y Takahashi N (Consultant attached to Associate Chief of Research's Office) Kusunoki Y		2012
The study of radiation-induced circulatory diseases using animal models	Inaba T (Hiroshima University)	Niwa Y Takahashi N (Consultant attached to Associate Chief of Research's Office) Kusunoki Y		2011
The study of radiation-induced circulatory diseases using animal models	Tanaka K (Institute for Environmental Sciences)	Takahashi N (Consultant attached to Associate Chief of Research's Office) Murakami H Niwa Y Kusunoki Y	Ogiso Y (Institute for Environmental Sciences) Tanaka S (Institute for Environmental Sciences)	2011
Establishment of method for exploring molecular pathways involving genome damage response and hematopoietic stem cell function	Yoshida K	Kyoizumi S Hayashi T Kajimura J Misumi M (Department of Statistics) Nakachi K (RERF Consultant) Kusunoki Y	Matsui H (Hiroshima University) Kanai A (Hiroshima University) Inaba T (Hiroshima University) Kondo Y (Hiroshima University) Ikeo K (National Institute of Genetics) Gojobori T (National Institute of Genetics)	2013

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
<p>Department of Radiobiology/Molecular Epidemiology Longitudinal analysis of peripheral blood T-cell receptor repertoire among in-house volunteers using next-generation sequencing technology</p>	Yoshida K	Cologne JB (Department of Statistics) Misumi M (Department of Statistics) Hayashi T Kusunoki Y	Matsui H (Hiroshima University) Kanai A (Hiroshima University) Robins H (Fred Hutchinson Cancer Research Center, USA)	2014
<p>Department of Epidemiology, Hiroshima Risk of radiation for cancer incidence in the RERF LSS cohort, 1958–2005 (including some site-specific cancer studies)</p>	Mabuchi K (U.S. National Cancer Institute) Ozasa K	Cullings HM (Department of Statistics) Furukawa K (Department of Statistics) Misumi M (Department of Statistics) Funamoto S (Department of Statistics) Grant EJ Sugiyama H Sakata R Sadakane A	Brenner A (U.S. National Cancer Institute) Neta G (U.S. National Cancer Institute) Cahoon EK (U.S. National Cancer Institute) Berrington de Gonzalez A (U.S. National Cancer Institute) Preston DL (Hirosoft International Corporation, USA)	2012
<p>Second cancer risk after radiation therapy among A-bomb survivors</p>	Yoshinaga S (National Institute of Radiological Sciences)	Soda M (Department of Epidemiology, Nagasaki) Moriawaki H Hida A (Department of Clinical Studies, Nagasaki) Yamada M (Department of Clinical Studies)	Akahane K (National Institute of Radiological Sciences) Doi K (National Institute of Radiological Sciences) Shimada Y (National Institute of Radiological Sciences) Fujiwara S (Hiroshima Atomic Bomb Casualty Council) Kasagi F (Radiation Effects Association)	2007
<p>Second collaborative analysis of radiation-associated thyroid cancers</p>	Veiga L (U.S. National Cancer Institute) Lubin J (U.S. National Cancer Institute)	Katayama H (Department of Information Technology) Sugiyama H Sadakane A Ozasa K	Fujiwara S (Hiroshima Atomic Bomb Casualty Council) Kasagi F (Radiation Effects Association)	2008
<p>A proposal to join the Asia Cohort Consortium. Project 1: Tobacco smoking, alcohol drinking, body mass index and risk of rare cancers</p>	Inoue M (University of Tokyo)	Sakata R Sugiyama H Shore RE (Vice Chairman and Executive Director) Grant EJ Sadakane A Ozasa K Ohishi W (Department of Clinical Studies) Hida A (Department of Clinical Studies, Nagasaki) Shore RE (Vice Chairman and Executive Director)		2010

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
<p>Department of Epidemiology, Hiroshima A proposal to join the diet and bladder cancer pooling project</p>	<p>Zeegers M (Maastricht University, the Netherlands)</p>	<p>Grant EJ Ozasa K Ohishi W (Department of Clinical Studies) Hida A (Department of Clinical Studies, Nagasaki)</p>		2012
<p>A proposal to join the biliary tract cancers pooling project</p>	<p>Koshiol J (U.S. National Cancer Institute)</p>	<p>Grant EJ Hida A (Department of Clinical Studies, Nagasaki) Ohishi W (Department of Clinical Studies) Ozasa K</p>		2013
<p>A proposal to join the pooled analysis of radiation-related primary neoplasms of the brain and nervous system</p>	<p>Brenner A (U.S. National Cancer Institute)</p>	<p>Sakata R Sugiyama H Soda M (Department of Epidemiology, Nagasaki) Ozasa K Shore RE (Vice Chairman and Executive Director)</p>	<p>Inskip P (U.S. National Cancer Institute)</p>	2013
<p>A proposal to join the pooled analysis of premenopausal breast cancer</p>	<p>Swerdlow A (Institute of Cancer Research, UK) Nichols HB (U.S. National Institute of Environmental Health Sciences)</p>	<p>Sadakane A Grant EJ Sugiyama H Soda M (Department of Epidemiology, Nagasaki) Sakata R Ohishi W (Department of Clinical Studies) Hida A (Department of Clinical Studies, Nagasaki) Ozasa K</p>		2014
<p>Department of Epidemiology, Nagasaki Histopathological identification of multiple primary cancers occurring in Nagasaki atomic-bomb survivors</p>	<p>Nakashima M (Nagasaki University)</p>	<p>Soda M</p>		2007
<p>Relationship between radiotherapy facilities and breast cancer survival: Database linkage study in Nagasaki</p>	<p>Ono Y (Osaka University)</p>	<p>Soda M</p>		2008

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Epidemiology, Nagasaki Medical service area for cancer patients in Nagasaki	Ono Y (Osaka University)	Soda M		2008
The concentration of treatment facilities for childhood cancer from the viewpoint of Pareto curve and the number of patients treated per hospital in Nagasaki	Ono Y (Osaka University)	Soda M		2008
Department of Statistics Joint analysis of chromosomal aberrations, early effects of radiation, and late effects of radiation in the atomic-bomb survivors' data	Stram D (University of Southern California, USA)	Cologne JB Cullings HM Furukawa K Misumi M		2007
Mechanistic modeling of cancer risk	Dekkers F (National Institute for Public Health and Environment, the Netherlands) Bijwaard H (National Institute for Public Health and Environment, the Netherlands)	Cullings HM		2007
Mechanistic modeling of cancer risk	Kaiser JC (National Research Center for Environment and Health, Germany)	Cullings HM		2008
Simulation methods for evaluating the impact of dose uncertainty on risk regression	Pierce D (Oregon Health Sciences University, USA)	Cullings HM		2008
Risk assessment of cancer incidence in persons exposed <i>in utero</i> or as young children	Preston DL (Hirosoft International Corporation, USA)	Cullings HM Kodama K (Chief Scientist) Soda M (Department of Epidemiology, Nagasaki) Shore RE (Vice Chairman and Executive Director)	Suyama A (Tomimaga Hospital)	2007
Specialized Monte Carlo calculations to convert tooth enamel ESR measurements to shielded kerma and organ doses	Nakamura N (Consultant, Department of Genetics) Egbert S (LEIDOS, Inc., USA)	Cullings HM	Wieser A (German Research Center for Environmental Health: Helmholtz Zentrum München, Germany)	2007

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
Department of Statistics Update of RERF tooth ESR measurement data using spectral deconvolution and new methods and information	Nakamura N (Consultant, Department of Genetics) Egbert S (LEIDOS, Inc., USA)	Cullings HM	Wieser A (German Research Center for Environmental Health: Helmholtz Zentrum München, Germany)	2007
Bayesian approach to risk assessment using individual data	Little MP (National Institutes of Health, USA)	Cullings HM Furukawa K Soda M (Department of Epidemiology, Nagasaki) Sakata R (Department of Epidemiology)	Nishi N (National Institute of Health and Nutrition) Suyama A (Tomimaga Hospital) Kasagi F (Radiation Effects Association) Molitor J (University of Southern California, USA)	2007
Functional methods for radiation exposure and biomarker data	Wang CY (Fred Hutchinson Cancer Research Center, USA)	Cullings HM		2007
Application of causal modeling on radiation, inflammation, and selected radiation/inflammation-induced health outcomes	Cologne JB	Nakashima E Kim Y-M Sakata R (Department of Epidemiology) Takahashi I (Department of Clinical Studies) Yamada M (Department of Clinical Studies)	Kakuma T (Kurume University) Araki Y (Kurume University)	2007
A semi-parametric survival extrapolation method: Model validation using RERF cohort	Fang CT (Taiwan University)	Furukawa K Cullings HM Soda M (Department of Epidemiology, Nagasaki) Ozasa K (Department of Epidemiology)	Wang JD (College of Public Health, Taiwan University) Hwang JS (Academia Sinica, Taiwan) Kasagi F (Radiation Effects Association) Suyama A (Tomimaga Hospital)	2009
Cohort study on weight fluctuation and cancer and cardiovascular disease incidence and mortality	Nanri A (Research Institute, International Medical Center of Japan) Mizoue T (Research Institute, International Medical Center of Japan)	Haruta D (Department of Clinical Studies, Nagasaki) Cologne JB	Araki Y (Kurume University)	2009
Methods for assessing joint effects of radiation and intermediate risk factors in nested case-control studies	Cologne JB	Furukawa K Grant EJ (Department of Epidemiology) Ohishi W (Department of Clinical Studies) Nakachi K (RERF Consultant) Cullings HM	Izumi S (Oita University) Kopecky KJ (University of Washington, USA) Fujiwara S (Hiroshima Atomic Bomb Casualty Council)	2008

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
<p>Department of Statistics A nested case-control study of breast and endometrial cancer in the cohort of Japanese atomic-bomb survivors</p>	Ohishi W (Department of Clinical Studies)	Cologne, JB Grant EJ (Department of Epidemiology) Ozasa K (Department of Epidemiology) Nakachi K (RERF Consultant) Nakashima E	Berrington de Gonzalez A (U.S. National Cancer Institute) Sharp GB (National Institute of Allergy and Infectious Disease, USA) Stevens RG (University of Connecticut Health Center, USA) Eguchi H (Saitama Medical University) Izumi S (Oita University) Key TJ (Imperial Cancer Research Fund, UK)	2002
Cancer risk estimation after acute radiation exposure: Impacts of the neutron dose and non-parametric analysis of risk coefficients	Cullings HM		Kaiser JC (National Research Center for Environment and Health, Germany) Jacob P (National Research Center for Environment and Health, Germany) Rühm W (Munich University/National Research Center for Environment and Health, Germany) Walsh L (Federal Office of Radiation Protection, Germany)	2008
Cancer risk estimation after acute radiation exposure: Impacts of radiobiological effects on the risk estimate	Cullings HM		Kaiser JC (National Research Center for Environment and Health, Germany) Eidemüller M (National Research Center for Environment and Health, Germany) Jacob P (National Research Center for Environment and Health, Germany)	2008
Role of visceral fat and its effects in the association between radiation dose and cardiovascular disease	Cullings HM	Hida A (Department of Clinical Studies, Nagasaki) Imaizumi M (Department of Clinical Studies, Nagasaki) Nakashima E	Carter R (The State University of New York at Buffalo, USA) Akahoshi M (Keiju Hospital)	2011

FY2014 Collaborative Studies (Without External Funds)

Title of Research	Name of Chief of Research Group	Investigator(s) at RERF	Investigator(s) outside RERF	Initiation Year
<p>Department of Statistics Hemopoietic malignancies among cohorts of persons exposed to low and moderate external ionizing radiation doses in childhood</p>	<p>Little MP (National Institutes of Health, USA)</p>	<p>Kim Y-M Ozasa K (Department of Epidemiology) Shore RE (Vice Chairman and Executive Director)</p>	<p>Adams MJ (University of Rochester School of Medicine and Dentistry, USA) Zablotska L (University of California San Francisco, USA) de Vathaire F (Institute Gustave Roussy, France) Sadetzki S (Gertner Institute for Epidemiology and Health Policy Research, Israel) Wakeford R (The University of Manchester, UK) Lee C (U.S. National Cancer Institute) Brenner AV (U.S. National Cancer Institute) Berrington de Gonzalez A (U.S. National Cancer Institute) Morton L (U.S. National Cancer Institute) Doody M (U.S. National Cancer Institute) Pearce M (University of Newcastle upon Tyne, UK) Ronckers CM (University of Amsterdam, the Netherlands) Holmberg E (Sahlgrenska University Hospital, Sweden) Lundell M (Karolinska Hospital, Sweden)</p>	<p>2014</p>
<p>Department of Information Technology Collaborative studies for the construction of databases and development of dictionary system for human genome analyses</p>	<p>Slezak T (Lawrence Livermore National Laboratory, USA)</p>	<p>Katayama H</p>		<p>1996</p>

International Collaborative Activities

RERF Directors and Staff Members participated in international collaborative activities with the following organizations and research groups:

1. World Health Organization (WHO)

RERF was designated as a collaborating center for the study of radiation effects on humans by the WHO in 1979, and has been a member of the WHO Radiation Emergency Medical Preparedness and Assistance Network (REMPAN) since 1988. Dr. Kazunori Kodama, Chief Scientist, and Dr. Hiroaki Katayama, Chief, Information Technology Department (ITD), attended the 14th Coordination and Planning Meeting of the WHO/REMPAN Collaborating Centers and Liaison Institutions in Wurzburg, Germany (Dr. K. Kodama, May 5–11, 2014, and Dr. Katayama, May 7–9, 2014). Dr. Katayama also attended the meeting of the WHO Regional Office for the Western Pacific (WPRO), which was held in Manila, the Philippines, November 13–14, 2014.

2. United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

Dr. Roy E. Shore, Vice Chairman and Executive Director, participated in the UNSCEAR Fukushima follow-up project to evaluate literature on health effects.

Dr. K. Kodama, Chief Scientist, attended the following meetings: meeting of UNSCEAR domestic committee members in Japan and others (Tokyo: July 1, 2014 and March 27, 2015); the 61st UNSCEAR general meeting (Vienna, Austria: July 21–24, 2014); a preparatory meeting with UNSCEAR members, the Japanese government, and UNSCEAR domestic committee members for follow-up on the assessment of the effects of the Fukushima nuclear accident (Tokyo: November 10–11, 2014); and a meeting with UNSCEAR's domestic committee members and others to review future directions (Tokyo: November 20, 2014). Dr. Kotaro Ozasa, Chief, Department of Epidemiology, also participated in the UNSCEAR domestic committee meetings held in Tokyo on July 1, 2014 and March 27, 2015.

3. International Commission on Radiological Protection (ICRP)

Dr. Shore, Vice Chairman and Executive Director, participated in the ICRP task group, which is developing a report on dose and dose-rate effectiveness factor (DDREF).

4. International Atomic Energy Agency (IAEA)

As part of the MHLW International Exchange Research Program, Dr. K. Kodama, Chief Scientist, visited IAEA headquarters in Vienna, Austria, March 17–19, 2015, to discuss collaboration between RERF and IAEA.

5. IAEA and Hiroshima International Council for the Radiation-exposed (HICARE)

A seminar, "HICARE—Contributing to the World," was held on May 26, 2014, to commemorate the designation of HICARE as a "Collaborating Centre" by IAEA. Dr. Toshiteru Okubo, Chairman of RERF and President of HICARE,

provided opening greetings, and Dr. K. Kodama, Chief Scientist, gave a presentation on ABCC-RERF's history and research findings, connecting those results to HICARE's international contributions.

Dr. Yoshiaki Kodama, Chief of the Department of Genetics, attended the second research coordination meeting of the IAEA and HICARE collaborative project for strengthening of biological dosimetry, in Vienna, Austria, June 10–13, 2014.

HICARE/IAEA's International Training Course (Regional Training Course by IAEA's Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia on advanced technologies in radiotherapy) was held in Hiroshima, January 19–22, 2015, with 27 participants. Dr. K. Kodama, Chief Scientist, presented a lecture for the training held at RERF.

6. International Agency for Research on Cancer

Dr. Katayama, Chief, ITD, attended meetings for the SEMI-NUC project (assessment of the feasibility of prospective cohort study of residents near the Semipalatinsk nuclear test site), which was held in Semey, Kazakhstan, March 30–April 1, 2015.

7. Semipalatinsk Project (Kazakhstan)

With regard to projects funded through the Japan Society for the Promotion of Science (JSPS)/Ministry of Education, Culture, Sports, Science and Technology (MEXT) Grant-in-Aid for Scientific Research, Dr. Katayama, Chief, ITD, attended the following meetings:

- SEMI-NUC project-related meetings (Munich, Germany, April 9–10, 2014)
- A preparatory meeting with staff of the Kazakhstan Scientific Research Institute of Radiation Medicine and Ecology (Semipalatinsk, Kazakhstan, August 25–27, 2014)
- The First Shimane-Semey International Symposium (Shimane University, January 24, 2015)
- A preparatory meeting with Dr. Grosche at the Federal Office for Radiation Protection, Germany (Munich, Germany, February 16, 2015).

8. Cooperation in the Health Examination/Consultation Project for A-bomb Survivors Living in South Korea

This semi-annual project was initiated in FY2004 by the Nagasaki prefectural and municipal governments as part of the national government's overseas A-bomb survivor relief project to provide A-bomb survivors residing in South Korea with health counseling and guidance. Dr. Daisuke Haruta, Research Scientist, Department of Clinical Studies in Nagasaki, participated in the 21st and 22nd cycles of this project as a member of a physicians group conducting health counseling in Seoul, South Korea, June 15–20, 2014, and in Daegu, South Korea, February 1–6, 2015.

9. Pauls Stradins Clinical University Hospital and affiliated institutions

As part of MHLW's International Exchange Research Program, Dr. Tomonori Hayashi, Assistant Chief,

Department of Radiobiology/Molecular Epidemiology, Dr. Kengo Yoshida, Research Scientist, Department of Radiobiology/Molecular Epidemiology, and Mr. Keiichi Tenma, Assistant Chief, General Affairs Section, Secretariat, visited Pauls Stradins Clinical University Hospital and other related institutions in Riga, Latvia, October 11–17, 2014, to meet former RERF trainees and follow up on the effectiveness of their training. Participants discussed the possibility of collaborative study on radiation effects among Chernobyl nuclear accident clean-up workers residing in Latvia.

10. Nagasaki Association for Hibakushas' Medical Care (NASHIM)

Dr. Misa Imaizumi, Associate Senior Scientist, Department of Clinical Studies in Nagasaki, presented a lecture at a seminar that was part of NASHIM's specialist dispatch project in Hapcheon, South Korea, December 10–12, 2014.

11. Other international collaborative activities

Dr. Shore, Vice Chairman and Executive Director, presented lectures to international audiences on the following topics:

- The use of biosamples to strengthen risk assessment, at the European EPIRadBio meeting regarding epidemiology and radiobiology research (Lisbon, Portugal, April 27–May 2, 2014)
- Epidemiological studies of cataract risk at the ICRP-Japan NUS Co., LTD. (JANUS) meeting (Tokyo, Japan, September 4–6, 2014)
- Risks after childhood A-bomb exposure, at the WHO-National Institute of Radiological Sciences (NIRS) collaborative symposium (Tokyo, Japan, December 8–9, 2014).

Acceptance of Visitors from Overseas for Briefing and Training

(Total in FY2014 for both Hiroshima and Nagasaki laboratories: 59 persons, excluding general visitors)

Hiroshima: 53 persons

1. Visitors related to Hiroshima International Council for Health Care of the Radiation Exposed (HICARE) (31 persons)

1) *From South Korea (24)*

Four trainees from South Korea attended the short-term training on medical care for A-bomb survivors in South Korea, June 12, 2014. Fourteen trainees from South Korea attended the training on medical care for A-bomb survivors in South Korea, October 1, 2014. Six trainees from South Korea attended the training on medical care for A-bomb survivors in South Korea, October 23, 2014.

2) *From the US (3)*

One trainee from the U.S., July 10, 2014; two trainees from the U.S., November 11, 2014.

3) *From other areas (4)*

One trainee from Latvia, December 1–26, 2014; three trainees from Brazil, February 24, 2015.

Visitors related to Japan International Cooperation Agency (JICA) (9 persons)

Nine trainees from Kenya, DR Congo, Afghanistan, Bangladesh, Cambodia, Myanmar, the Philippines, and China visited RERF for the Group Training Course in Tuberculosis Laboratory Management for Achievement of MDGs Targets, FY2014, hosted by the Japan Anti-Tuberculosis Association on November 19, 2014.

Visitors related to RERF (MHLW International Exchange Research Program) (2 persons)

One trainee from the National Cancer Center, South Korea, November 17–December 5, 2014; one trainee from the National Cancer Center, South Korea, December 1–19, 2014. Training for these visitors was conducted at the Department of Clinical Studies in Nagasaki and Nagasaki University, December 2–4, 2014.

Visitors related to Ministry of Education, Culture, Sports, Science and Technology (MEXT) (11 persons)

Eleven trainees in a young leaders program for FY2014–2015, Nagoya University Graduate School of Medicine, from Mongolia, Malaysia, Myanmar, Cambodia, Kazakhstan, Kyrgyz, Uzbekistan, Bangladesh, and Afghanistan visited RERF, January 30, 2015.

Nagasaki: 6 visitors

Visitors related to the Nagasaki Association for Hibakushas' Medical Care (NASHIM) (6 persons)

Six trainees from Russia, Ukraine, Belarus, and Kazakhstan visited the RERF Nagasaki Laboratory to participate in NASHIM's FY2014 training program, July 23, 2014.

Long-term trainee (Training period exceeding one month)

June 17—August 17, 2014

Kaitlin Kelly-Reif, Ph.D. student in environmental and occupational epidemiology at the University of North Carolina at Chapel Hill

This trainee visited the Statistics Department under a fellowship project of the Japan Society for the Promotion of Science/U.S. National Science Foundation Summer Program to work on geospatial modeling of radiation survey measurements made soon after the Hiroshima atomic bombing. During the training period, she conducted geostatistical estimation of residual radiation in the area near the hypocenter in Hiroshima and in the western area of the city, broadened her views on long-term health effects of the A-bombings, and deepened her understanding of historical, social, and methodological issues related to radiation risk.