

Fukushima Medical University



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This presentation was given on 24 May 2017 at Hiroshima University, in conjunction with an IAEA Consultancy Meeting on Science, Technology, and Society (STS) Perspectives on Nuclear Science, Radiation, and Human Health.

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**Going global:
not new, but
new to FMU.**

**Cultural Diversity
and Global Outreach**

Whether traveling abroad or welcoming visitors to Rochester, the Mayo family upheld values of mutual respect. On their journeys, they enjoyed cultural pursuits as well as medical and scientific activities.

William Worrall Mayo, M.D., seated left, visited Japan in 1907.



photos from
Mayo Clinic
Siebens Building
Phillips Hall



**FUKUSHIMA
MEDICAL
UNIVERSITY**

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Going global is not a new idea. One hundred and ten years ago, small-town Minnesota surgeon William Worrall Mayo visited Japan, but long before the Mayo Clinic was founded in 1864, Japanese and Western people were earnestly studying medicine together in Nagasaki.

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Fukushima Women's Medical College was our predecessor when the atomic bombs were used in war. So, in matters pertaining to radiation medicine, Hiroshima University and Nagasaki University will always be like our older siblings. FMU was still a quiet, prefectural medical school when 3.11 happened. Things have changed.

Some International Partners

❖ IAEA

❖ ICRP

❖ KIRAMS

❖ UNSCEAR

❖ RITN



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We now partner with various international organizations, some of which are listed here. These were chosen to illustrate three themes that guide our thinking.

Theme 1

Today's young people
are tomorrow's leaders.

**Give them real-life
experience.**



Theme number one: Today's young people are tomorrow's leaders.
Give them real-life experience as soon as possible.

Theme 2

Value your contacts,
not to use them,
but to serve them.



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Theme number two: Value your contacts, not to use them, but to serve them.

Theme 3

Travel is tedious.
**Make the most of
every dollar and day.**



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Theme number three: Travel is tedious. Make the most of every dollar and day.

Some International Partners

❖ IAEA

❖ ICRP

❖ KIRAMS

❖ UNSCEAR

❖ RITN



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Let's begin with today's host, the International Atomic Energy Agency.

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FMU-IAEA International Academic Conferences

❖ 1st 2013 Nov 21-24

❖ 2nd 2014 July 25-27



FMU-IAEA 

International Academic Conference

Radiation, Health, and Society:
Post-Fukushima Implications
for Health Professional Education

Date :21-24 November 2013
Place: Fukushima Medical University

Organized by 

Cooperation: Fukushima Medical University, Fukushima Medical University, Fukushima Medical University, Fukushima Medical University

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Among many other activities, the IAEA has partnered with FMU to host International Academic Conferences in Fukushima. In 2013, FMU medical student Shohei ANDOH wasn't just a panelist...

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...he also gave a major presentation. Mr. ANDOH was a shy Fukushima native just finishing his second year of medical school when 3.11 happened. His sense of mission and purpose started to show in the Year 3 English Presentation Skills class that has been a part of our curriculum since 2009. After graduating in 2015, he did general training at Japan's National Center for Global Health and Medicine, and is now specializing in hematology at the University of Tokyo.

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Pick a student at random, and you might expect random results, but FMU does have systems in place to identify and develop the most promising students. One sentence from a recommendation letter explains why Mr. Andoh was chosen for an IAEA conference.

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The following year, we had a panel composed entirely of students, from Japan and from Mount Sinai Medical School in New York, with whom FMU has had an exchange relationship for a number of years. Now, in contrast to the famous and highly distinguished session chairs on the right...

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...we had a year 3 medical student from FMU chair a session with international speakers. The thinking is, yes, as a matter of protocol, there should be a co-chair of similar rank to our guest speakers, but as a medical school, we can let the actual work be done by a student. Ms. Saito did such a good job, FMU'S Professor Takenoshita – our new president, by the way – invited her to EmCee at a specialty conference elsewhere in Japan.

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Another activity between FMU with IAEA was a “Train the Trainers” workshop for medical physicists from around the world. Here they are, practicing under the watchful eyes of university presidents from years past, who, as visionary as they were, probably couldn’t imagine any of this happening on our campus.

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After a long day wearing the uniform costumes of a radiation emergency, our guests could change into unique costumes, reflecting their cultural identities. This particular workshop, by the way, convened during the holy month of Ramadan. FMU's cafeteria has taken a big step backward since then, but at least our banquet vendors do their best to accommodate different dietary practices, and clearly label everything when they put on a buffet. We made sure that the banquet buffet for this workshop during Ramadan was served right after sunset.



Now let's look at an example from our relationship with the International Commission for Radiological Protection.

ICRP Dialog Initiative

- | | |
|---------------------|------------------|
| ❖ 2011 Nov 26-27 | ❖ 2014 Aug 30-31 |
| ❖ 2012 Feb 25-26 | ❖ 2014 Dec 6-7 |
| ❖ 2012 July 7-8 | ❖ 2015 May 30-31 |
| ❖ 2012 Nov 10-11 | ❖ 2015 Sep 12-13 |
| ❖ 2013 Mar 2-3 | ❖ 2015 Dec 12-13 |
| ❖ 2013 July 6-7 | ❖ 2016 July 9-10 |
| ❖ 2013 Nov 30-Dec 1 | ❖ 2016 Oct 1-2 |
| ❖ 2014 May 11-12 | ❖ 2017 Mar 11-13 |

www.icrp.org/page.asp?id=189
www.fukushima-dialogues.com



ICRP started hosting Dialog Seminars from late 2011, engaging with citizens affected by the nuclear accident. Their Dialog Initiative has continued since then. Let's focus on an event from 2015.

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**The 11th Dialogue on the Rehabilitation of Living Conditions
after the Fukushima Accident**

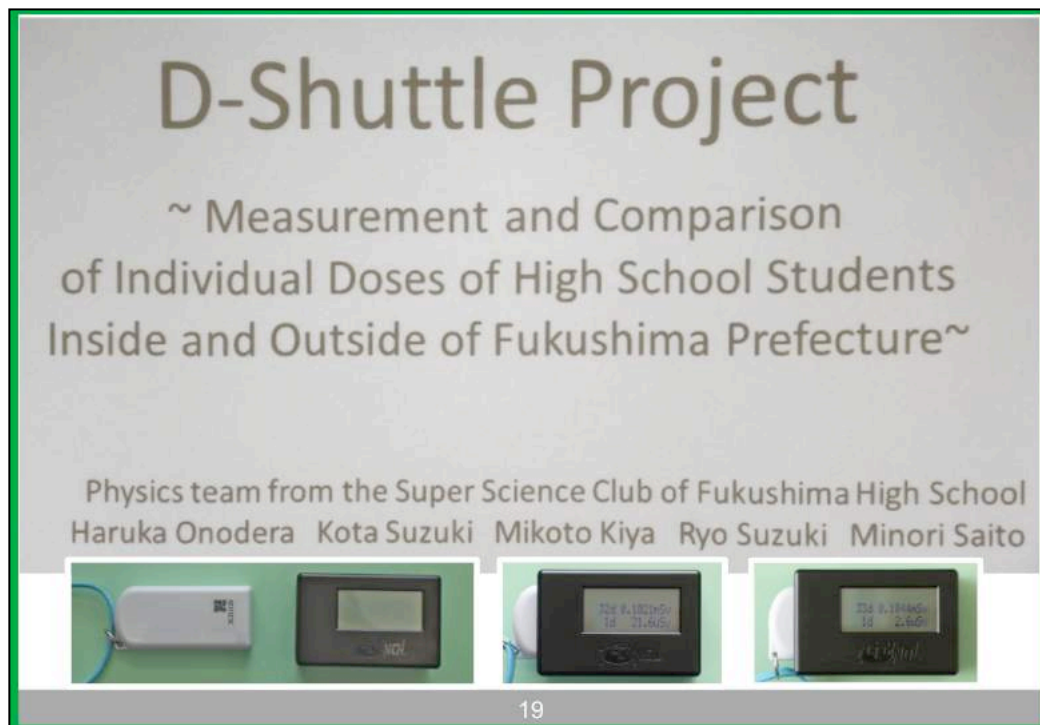
“The Role of Measurements in Regaining Control”

Date: May 30 and 31, 2015
Venue: Sugitsuma Kaikan 4F, Peony Room (Tel: 024-523-5161)
<<http://www.sugitsuma-kaikan.com/>>

An initiative of the
International Commission on Radiological Protection (ICRP)
www.icrp.org/docs/dialogue-11E.pdf
In cooperation with and supported by:
Committee of Radiation Protection and Public Health/OECD-NEA
Date City
Ethos in Fukushima NPO
Fukushima Medical University,
Institute of Radiation Protection and Nuclear Safety/France,
The Nippon Foundation,
Norwegian Radiation Protection Authority/Norway,
Nuclear Safety Authority/France,
Radiation Safety Forum NPO

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The 11th Dialogue on the Rehabilitation of Living Conditions after the Fukushima Accident was subtitled, The Role of Measurements in Regaining Control. Note that many organizations participate in the ICRP Dialog Initiative, including Fukushima Medical University.



At this Dialog Seminar, a group of students from the Super Science Club of Fukushima High School made presentations, in particular, about their D-Shuttle research project. The D-Shuttle is an electronic dosimeter that records radiation exposure doses by the hour and day.

2.Methods and materials

Participants

6 schools inside the Fukushima prefecture

6 schools in other prefectures in Japan

12 overseas areas

2 schools in Belarus

4 schools in France

8 schools in Poland

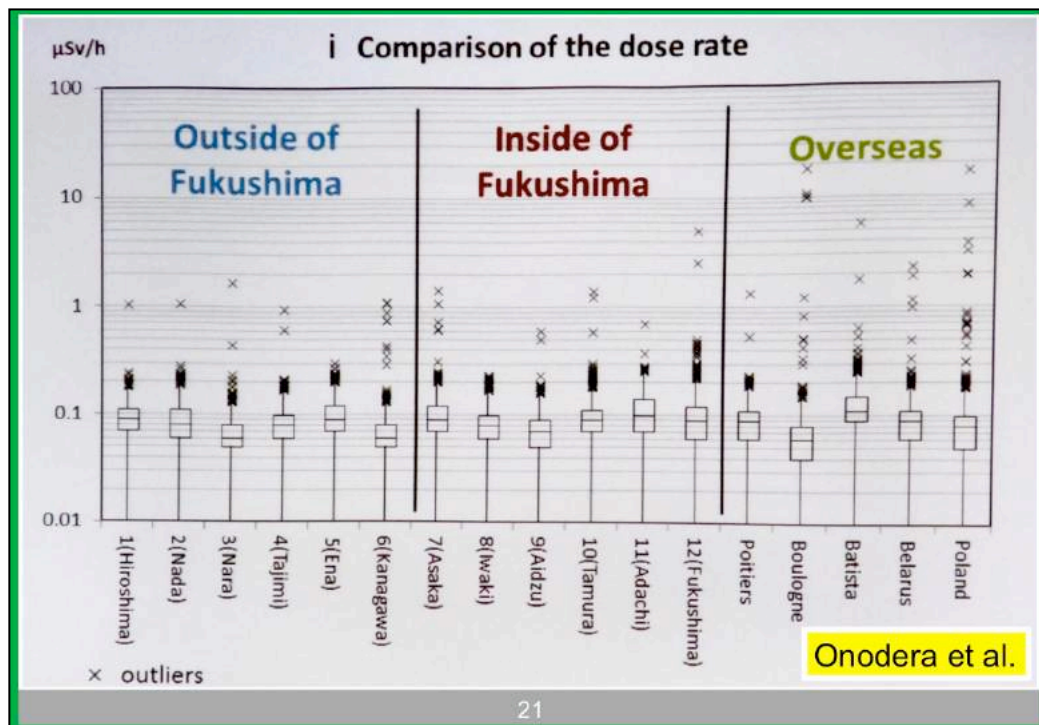
Total of **216** people

Onodera et al.

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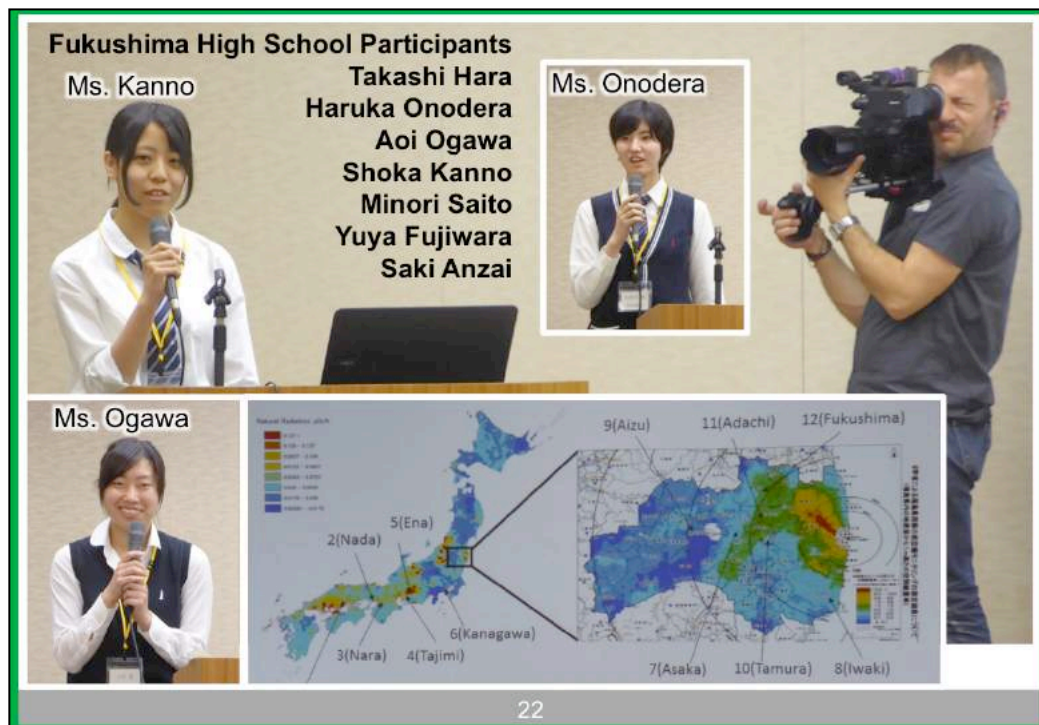
Fukushima High School students got the cooperation of students at other high schools in Japan and around the world: Belarus, France, and Poland.

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Together, 216 students demonstrated background radiation levels around Fukushima Prefecture that were in the same range as other places around the world.

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As presenters, the students were poised and articulate, in front a live international audience and in front of video cameras.

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Received 2015 Jun 17

Revised 2015 Sep 9

Accepted 2015 Oct 16

Published 2015 Nov 27

Abstract

“...Each participant wore an electronic personal dosimeter ‘D-shuttle’ for 2 weeks, and kept a journal of his/her whereabouts and activities. The distributions of annual external doses estimated for each region overlap with each other, demonstrating that the personal external individual doses in locations where residence is currently allowed in Fukushima Prefecture and in Belarus are well within the range of estimated annual doses due to the terrestrial background radiation level of other regions/countries.”

Measurement and comparison of individual external doses of high-school students living in Japan, France, Poland and Belarus
— the “D-shuttle” project —

[illegible]

J. Radiol. Prot. 36 (2016) 49–66

The students' research was peer-reviewed and published in the Journal of Radiological Protection, with Prof. Hayano at the University of Tokyo serving as corresponding author. Our contribution was largely through the efforts of Dr. Makoto Miyazaki and Prof. Otsura Niwa.



Next, the Korea Institute of Radiological and Medical Sciences.

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A delegation from KIRAMS visited FMU in 2014, and we held a joint conference. They talked, we talked, just what you would expect.

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One difference was that we allowed medical students to host a banquet for our guests at a small restaurant near campus. Maybe two FMU faculty members were there, but this was really a student-organized event. KIRAMS made some short presentations, FMU students made some short presentations, and when it was time to eat, the student stood up as a group, went to the kitchen, and brought out the dishes. So well done, it was like watching synchronized swimming.

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In turn, we have been invited to Korea to participate in meetings, such as this one in 2015, co-organized with WHO, and attended by people from around the world...

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...or this one, in 2016, co-organized with IAEA, again, with a very international roster of participants.

People from around the world
who study at KIRAMS ask,

“Can we train at FMU?”

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In every case, what we hear from KIRAMS and their international guests is, “Can we train at FMU?”

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Indeed, we welcome visitors, such as this delegation in 2015 from Korea Hydro and Nuclear Power...

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...and this Korean delegation of mental health professionals in 2016.

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This year, we received a delegation of citizens from Manche, France, in our new International Conference Room. But the question remains, what about hands-on training?

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Disaster Medicine – Radiation Exposure Courses

❖ 24th: Jan 23-24 Advanced

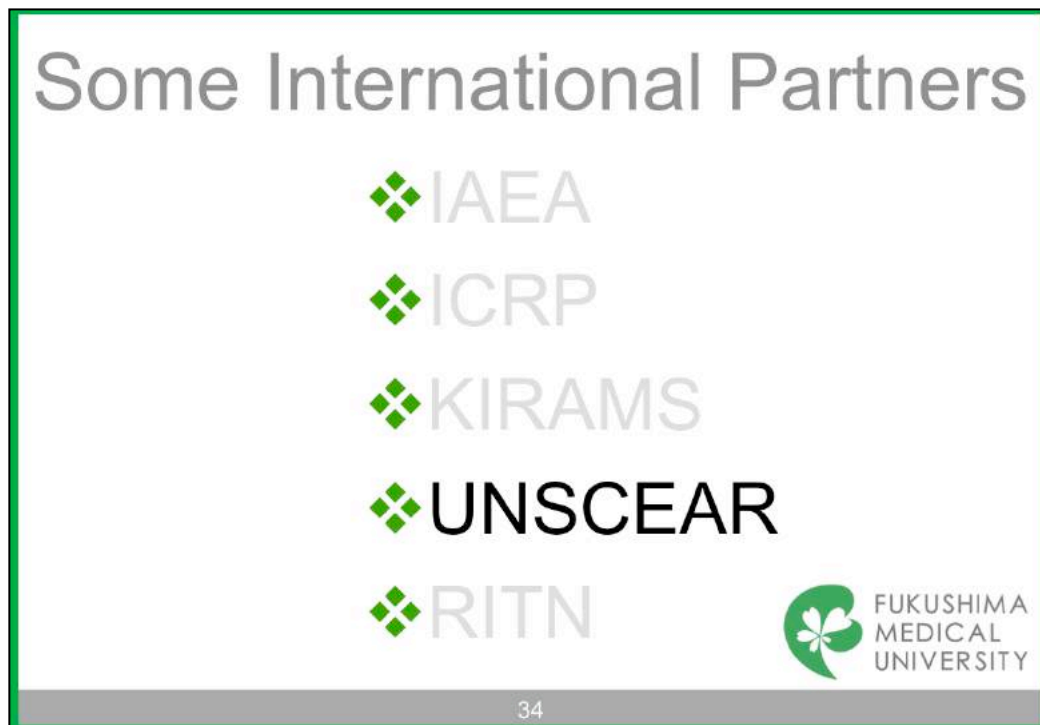
❖ 25th: June 9-10 Basic

❖ 26th: July 14-15 Basic



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We definitely offer hands-on training in disaster and radiation medicine. Organizer Dr. Kumagai is multilingual, and travels around the world lecturing and teaching in English. Our challenge is that many trainees only speak Japanese. So, next month, at our 25th Disaster Medicine – Radiation Exposure Course, as an experiment we're pairing up our Dr. Lyamzina – herself fluent in many European languages – with a biomedical engineer from Google in Tokyo, who wants to attend and simultaneously translate between Japanese and English.



On to UNSCEAR, whose representatives have come to FMU on numerous occasions.

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And, for the past few years, we have been dispatching speakers to Vienna for a satellite session on Fukushima that has been added to the annual UNSCEAR General Assembly.

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**Annual Satellite Session on Fukushima
at the UNSCEAR General Assembly**

2017 May 29 FMU Representatives

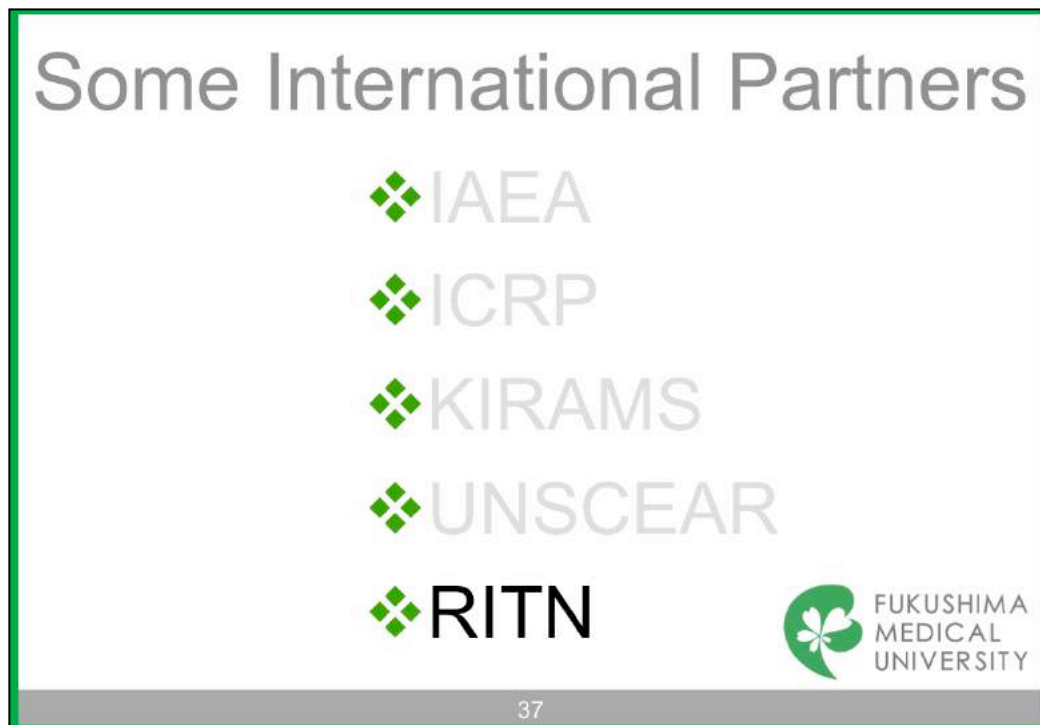
**“Risk analysis and
perception after the
Fukushima Daiichi
Nuclear Power Plant
accident”**

**A/Prof.
Yuliya
LYAMZINA**

**A/Prof.
Michio
MURAKAMI**

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This year's speakers from FMU are professors Yuliya Lyamzina and Michio Murakami, sharing the topic, “Risk analysis and perception after the Fukushima Daiichi Nuclear Power Plant accident.”



Last on the list, a trip that grew out of an invitation from America's Radiation Injury Treatment Network.



Every couple of years, RITN convenes a meeting around Washington, DC.

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Overview of Activity

Jul	Arifumi HASEGAWA	Ken NOLLET
11		Fukushima—NRT—MSP—DCA
12	Fukushima—NRT—IAD, Orientation	Preparation, Orientation
13	World Bank • Global Facility for Disaster Reduction and Recovery	
14	Advanced Hazmat Life Support (AHLS), Radiation Injury Treatment Network (RITN)	
15	Radiation Injury Treatment Network (RITN)	
16	National Institutes of Health (NIH), National Library of Medicine (NLM), Goethe Institute	
17	American Red Cross Biomedical & Disaster, George Washington University	
18	NIH National Cancer Institute (NCI)	DCA—MSP, Ashland•Maplewood
19	(organizational day)	University of Minnesota
20	Georgetown University Hospital	MSP—NRT—Fukushima
21	"Designing for Disaster" at the National Building Museum	
22	IAD—NRT—Fukushima	

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After FMU was invited to this RITN meeting, we built a bigger agenda to make our travel dollars do more. Let me cover just 5 days of this trip.

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A lesson from colleagues at the Australian Red Cross is that Australia is so far from so many places that Australians routinely do as much as possible when they go somewhere. They can even append vacation days to professional travel, something that Japanese public servants are careful not to do.



There are other colleagues to thank for this travel schedule. On a 2012 trip to Minnesota, which included a blood donation, Dr. Jed Gorlin said, "Come early and come to lunch, there's someone I want you to meet." That someone was Cullen Case of the Radiation Injury Treatment Network. He, in turn, organized an audience for me two days later, and that set the stage for a future invitation to RITN's national meeting.

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More appointments in Washington were arranged by Dr. Richard BENJAMIN, Chief Medical Officer of American Red Cross Biomedical Services, and Prof. Willy (Bill) FLEGEL, Medical Director of the NIH Department of Transfusion Medicine. Previously, FMU's Department of Blood Transfusion and Transplantation Immunology helped welcome these world-renowned specialists when they visited Japan.

Transfusion under Triple Threat


30 | Partnering Pays Off in DC-area Disaster Preparedness Plan QST, J. of ARRL
2011 95(9), 30-34

Victor Cid, W3CID and Andrew Mitz, WA3LTJ

Hams have a long history of technical development for disaster preparedness. The National Library of Medicine (NLM), part of the National Institutes of Health (NIH), has tapped a technically savvy group of hams in the Washington, DC area to develop last resort e-mail communications for three area hospitals. This ambitious project has created a new approach to providing e-mail service to large groups of users during major disasters.

BHEPP — a Unique Partnership

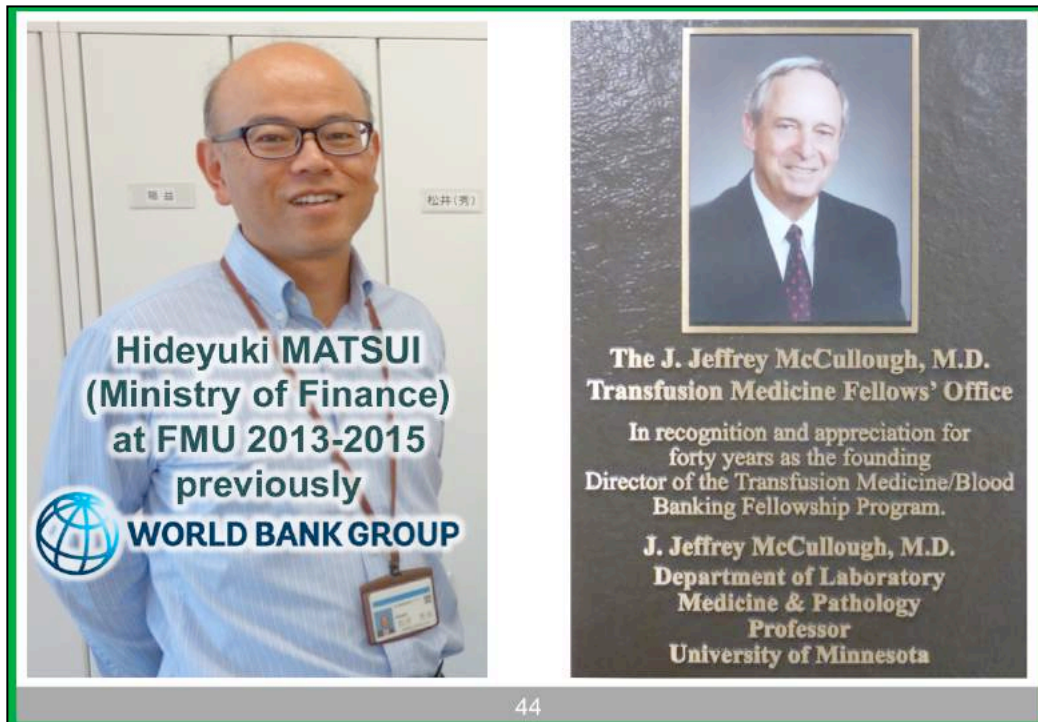
The project began in Bethesda, Maryland where you will find three very different major hospitals across the street from one another. The Bethesda Hospitals' Emergency Preparedness Partnership (BHEPP) was created in 2004 by the National Naval Medical Center (NNMC), the "flagship" hospital of the Navy, the National Institutes of Health



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From a disaster preparedness article, I knew Victor CID at the National Library of Medicine, and he added a meeting with other disaster preparedness and emergency communications specialists on the NIH/ NLM campus.

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FMU's Mr. Hideyuki MATSUI, who was on loan to us from the Ministry of Finance, previously worked at World Bank, and his connections arranged our visit there. Prof. Jeffrey MCCULLOUGH has for many years welcomed me to speak about Fukushima at the University of Minnesota, including this time.

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So, here we are, Prof. Arifumi HASEGAWA and I, spending the morning and afternoon of July 13 at World Bank headquarters in Washington.

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The next morning, July 14, we were involved in an Advanced Hazmat Life Support course that was scheduled just before the RITN meeting.

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RITN occupied the rest of July 14 and all of July 15.

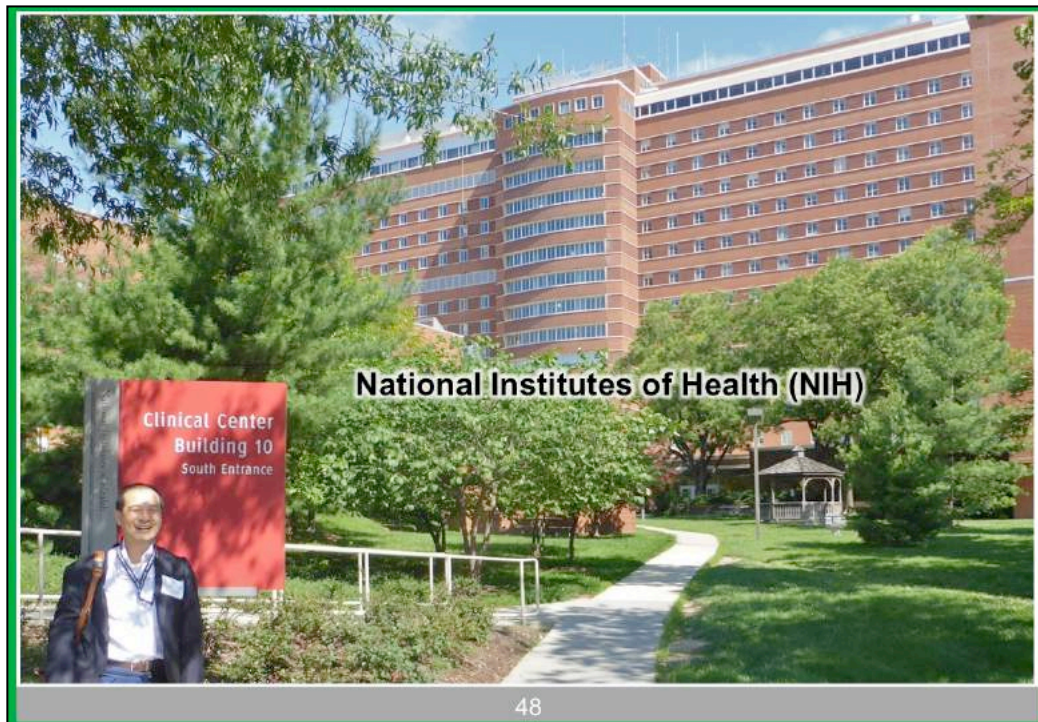
ADDITIONAL NOTES:

Radiation Injury Treatment Network (RITN) biennial meeting.

Lower left, NOLLET's presentation, in progress.

Lower right, Prof. HASEGAWA in conversation with National Marrow Donor Program (NMPD) Chief Medical Officer and University of Minnesota Clinical Professor Dr. Dennis L. Confer, MD

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The next day, we were on the campus shared by America's National Institutes of Health and National Library of Medicine.

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The morning of July 16 started with a tour of the NIH Department of Transfusion Medicine.

ADDITIONAL NOTES:

NIH Transfusion Medicine Fellow Dr. Kamille West (center) leads a laboratory tour for talented high school students who are spending 5 weeks at NIH in a Science, Technology, Engineering, and Mathematics (STEM) education program.

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Around noon, Prof. Hasegawa and I gave lectures.

ADDITIONAL NOTES:

Special guest lecture hosted by the Department of Transfusion Medicine, advertised as follows:

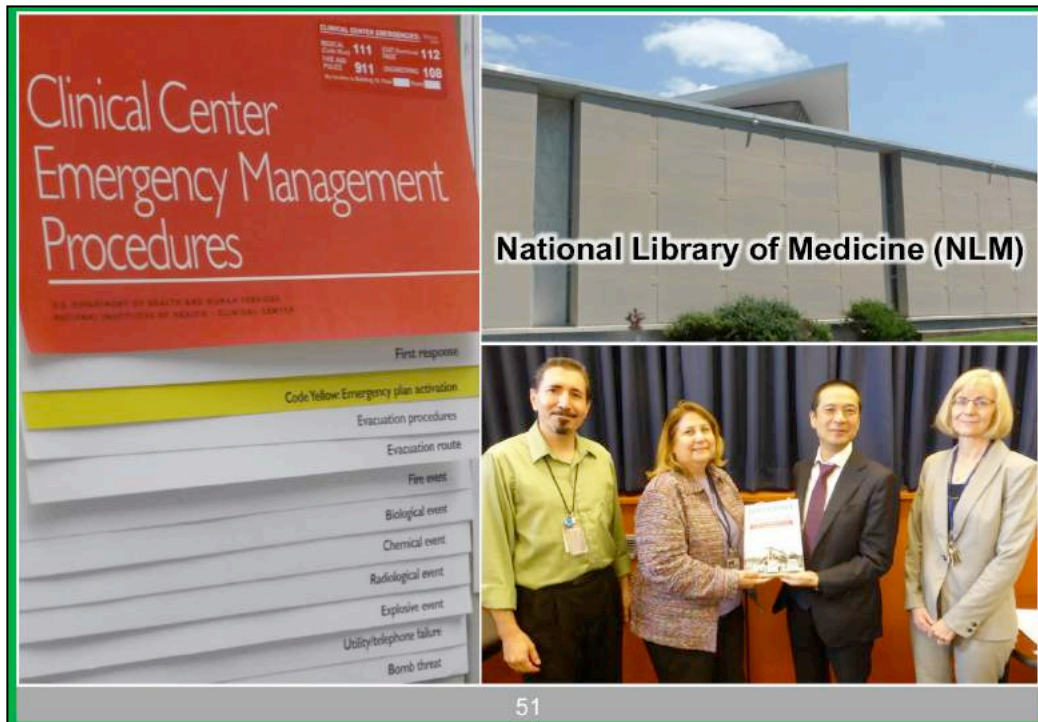
“Lessons from Fukushima: Viewpoint of a Front Line Physician” – Arifumi HASEGAWA, MD, PhD

“From 9-11 to 3-11: A Look at Our Past with a View Toward the Future” – Kenneth E. NOLLET, MD, PhD

In addition to participants from the National Institutes of Health (NIH) and National Library of Medicine (NLM), the following person also attended:

Lauren K. Gibson, Project Manager
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission

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On the afternoon of July 16, we spent time with representatives of the National Library of Medicine who are involved in emergency preparedness. You might notice the recessed, side-mounted windows of Building 38, a National Library of Medicine facility designed and built during the cold war to withstand the force of an atomic bomb.

ADDITIONAL NOTES:

Photograph, from left to right:

NLM SIS DIMRC Mr. Victor H. CID, Senior Computer Scientist

NLM SIS Ms. Gale DUTCHER, Deputy Division Director

FMU Prof. Arifumi HASEGAWA

NLM SIS DIMRC Ms. Stacy J. Arnesen, Head

Others attending, not shown in photograph:

Stefan Jaeger, PhD; Les R. Folio, DO, MPH, Staff Clinician

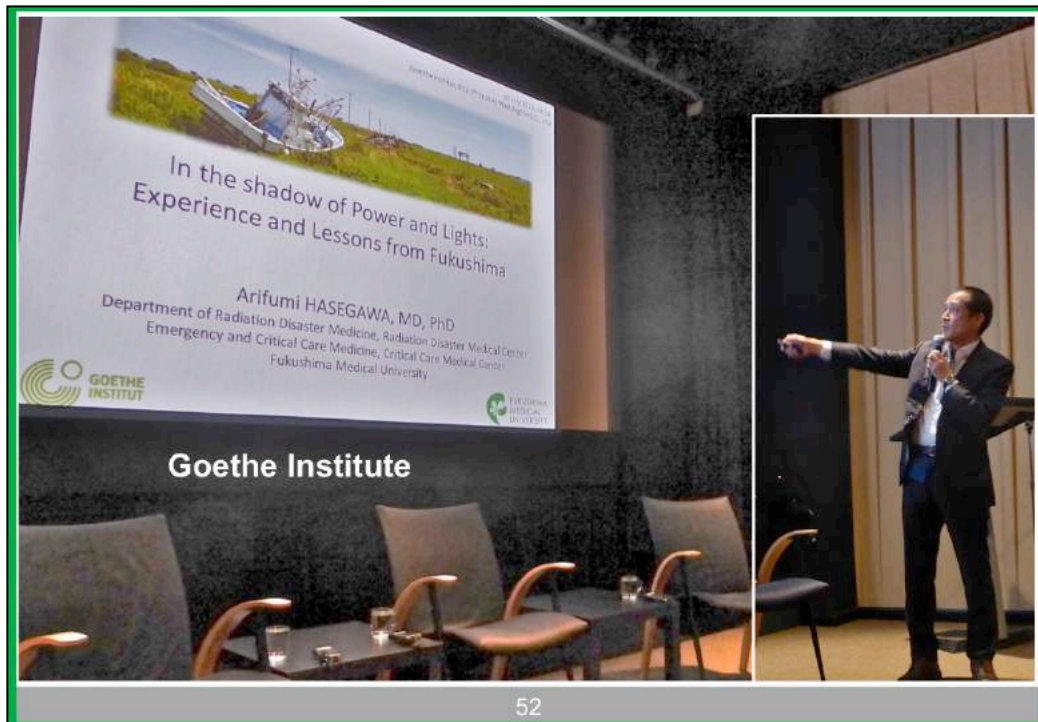
Mr. Anthony Kraut, EmComm Volunteer, Mr. Lucas Folio, Student

NLM = National Library of Medicine

SIS = Specialized Information Services

DIMRC = Disaster Information Management Research Center

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For the evening of July 16, NIH's Prof. Willy Flegel, an immigrant from Germany, arranged a public meeting at Washington's Goethe Institute.

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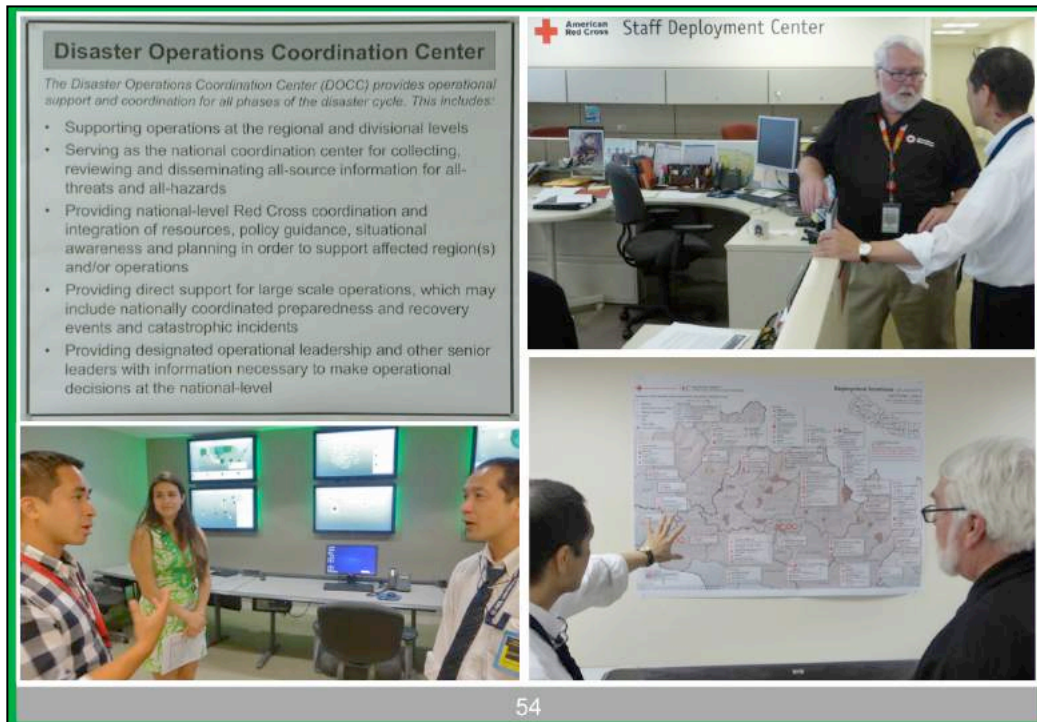


We spent the next day, morning and afternoon, at American Red Cross Headquarters.

ADDITIONAL NOTES:

Presentations with Q&A at American Red Cross (ARC) Headquarters included representatives of ARC Disaster and Biomedical Service groups, and nationwide teleconference participants.

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After our presentations on Fukushima – which were teleconferenced to Red Cross locations around the United States, we toured the American Red Cross Disaster Operations Coordination Center.

ADDITIONAL NOTES:

Mr. Bill FitzGerald, Senior Advisor – Biomedical Preparedness, led a tour of the American Red Cross Disaster Operations Coordination Center (DOCC). Lower left photograph includes a female university student on a 10-week internship in the DOCC.

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11		Fukushima—NRT—MSP—DCA
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16	National Institutes of Health (NIH), National Library of Medicine (NLM), Goethe Institute	
17	American Red Cross Biomedical & Disaster, George Washington University	
18	NIH National Cancer Institute (NCI)	DCA—MSP, Ashland•Maplewood
19	(organizational day)	University of Minnesota
20	Georgetown University Hospital	MSP—NRT—Fukushima
21	"Designing for Disaster" at the National Building Museum	
22	IAD—NRT—Fukushima	

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After that, Prof. Hasegawa was on his own for the first time in the US, staying in Washington, while I made some visits in Minnesota. You have the general idea, so let's leave it at that...

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...except to say that our visit to Washington resulted in reciprocal visits to FMU later in July...

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...and again in August.

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It's all well and good to talk about disaster response with international colleagues, but the real objective is to prepare for and respond to real disasters. Dr. Hasegawa was among those from FMU who went to Kumamoto, Japan, after their April, 2016 magnitude 7 earthquake. Like going global, this is not a new idea. The Red Cross Nurse's Creed that we saw in Washington says it well: "Wherever disaster calls, there I shall go. I ask not for whom, but only where I am needed."

Since January, 2008, Kenneth E. Nollet has been a salaried academic physician at Fukushima Medical University.

Other income is derived from editing English-language scientific manuscripts and from textbook royalties.

Conflict of Interest (COI) disclosure,
as required by the Japan Society of
Transfusion Medicine and Cell Therapy



To wrap up, my specialty is strict about conflict-of-interest disclosures. In brief, I am a public servant on a salary, who tries to make up for that by doing a little editing and writing on the side.

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Kenneth E. Nollet has, in the past 6 years, received travel support from Bio-Rad Australia, the American Red Cross, the Radiation Injury Treatment Network (RITN), the International Atomic Energy Agency (IAEA), the OECD Nuclear Energy Agency, the Mayo Clinic Alumni Association, and the Korea Institute for Radiological & Medical Sciences (KIRAMS) for the purpose of reporting personal experience and facts about Japan's earthquake, tsunami, and nuclear crisis to groups in Brisbane, Australia; Washington, DC; Vienna, Austria; Singapore; Tokyo, Japan; Phoenix, Arizona; and Seoul, Korea.

Conflict of Interest (COI) disclosure,
as required by the Japan Society of
Transfusion Medicine and Cell Therapy



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Also, various organizations have supported my travel to discuss personal experience and facts about 3.11. But my opinions are not for sale, so people who don't like what I think don't invite me anywhere. Always follow the money, but, yes, if there is a conflict of interest...

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...maybe I'm just in this gig for the food. Fukushima is a great place to eat well, maybe drink a little, and live.

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Thank you, IAEA, for the invitation to speak. Congratulations on 60 years promoting atoms for peace and development. Thank your for listening.