Date: NOVEMBER 17TH, 2021

JSPS US AND CANADA ALUMNI ASSOCIATION SEMINAR PROGRAM

REPORT

Organizer (Awardee)

Name: INSTITUTE FOR GLOBAL HEALTH

Position & Affiliation: COLLEGE OF OSTEOPATHIC MEDICINE, MICHIGAN STATE UNIVERSITY

1. TITLE OF SEMINAR

ONE HEALTH, ONE WORLD DAY 2021 "Global One Health effects of low- level radiation on human health"

2. DATE(S)

November 03, 2021

3. VENUE & CITY, STATE

Facility for Rare Isotope Beams (FRIB), Michigan State University Campus, East Lansing, Michigan

4. TARGETED RESEARCH AREAS

(1) Low level radiation (2) One Health (3)

5. NUMBERS OF PARTICIPANTS

TOTAL: 35 persons including 3 US and Canada Alumni Association members

-US: 26 persons

-CANADA: 1 person

-FROM OTHER COUNTRIES: 8 person(s) including 4 person(s) from Japan

NOTES FOR REPORT

-Executive Summary

Addressing local and global factors that impact the optimal health and well-being for humans, animals, and the environment was one of the priorities at this event. This year, the celebration also encompassed an international webinar on "Global One Health effects of low- level radiation on human health" featuring speakers from Japan, Canada and USA in correlation with MSU efforts on radiation effects research.

SPEAKER PANEL

Kristy Murray, DVM, PhD
Baylor College of Medicine

Ijeoma Nnodim Opara, MD
Wayne State University

Pham Duc Phuc
MD, MSc, Ph.D.
Hanoi University

Melinda Wilkins
DVM, MPH, Ph.D.
Michigan State University

Keiji Suzuki, Ph.d
University of Nagasaki

Carmel Mothersill, Ph.D
McMaster University

SPECIAL CONTRIBUTIONS

Douglas Gage Ph.D.
Office of Research and Innovation
Michigan State University

Thomas Glasmacher, Ph.D
Facility for Rare Isotope Beams (FRIB)
Michigan State University

Christopher Contag
Ph.D
Institute for Quantitative Health Science, Michigan State University.

James Trosko, Ph.D
Institute for Integrative Toxicology
Michigan State University

William Cunningham DO,MHA
Institute for Global Health
Michigan State University

-Topics Discussed with Outcomes & Future Challenges

Dr. Douglas Gage, Vice-president for Research at Michigan State University (MSU) opened the conference highlighting the work of MSU with partners around the world. He related the work of the Wolbachia project in Merida, Mexico and in Guangzhou, China which has resulted in significantly decreasing the mosquito populations thereby decreasing the burden of vector borne diseases. He extended an invitation for everyone connected international to create a network of collaboration. The One Health approach to global health issues is needed because of the interactive relationships of human, animal and environmental/ecological that continue to cause diseases globally.

Dr. Melinda Wilkins, Associate Professor of One Health, Public Health, and Global Health Education at Michigan State University (MSU) introduced to the attendees the concept of One Health. Even when the G20 recognizes that not working under a One Health approach might become an issue, there are barriers on One Health; First, is the lack of recognition of the One Health approach as a discipline for working on global health issues. Just as important as described by Dr. Wilkins is a disconnection between One Health research and the competition for funding. Michigan State University's effort on One Health is being led by the Institute for Global Health in collaboration with the College of Veterinary Medicine. Additional models on One Health from other institutions includes the Circular Health Initiative from Cornell University, as well as others from UC Davis, University of Minnesota and Ohio State University.

Dr. Pham Duc Phuc, Professor of Public Health at Hanoi University Vietnam, brough an example of a successful creation of a One Health network through educational work in the last 10 years. The program created introduced One Health in the curriculum of engineering in environmental health degrees as well as public health degrees. The results reveal 310 trainers and over 50.000 students that are trained and now know about the one health laboratory network.

Dr. Kristy Murray, Professor at Baylor College of Medicine, brought to light an example of how a One Health Approach help to identify an outbreak of hantavirus that was related to contaminated water in Nicaragua. Through forensic investigation considering the One Health Approach the team in Nicaragua was able to accurately identify the problem and bring a solution to the community.

Dr. Ijeoma Opara, Associate Program Director at Wayne State University, presented on Global Health Education and ways that it should be re-think. She invited for a deconstruction of ideas and re-education on Global Health, introducing the concept of *disinfodemic* and calling for global health leaders to introduce more integrative lines of communication, as communities are not trusting decision makers. She presented She presented the dilemma of Climate Justice over environmental racism and it's relation with the One Health Concept. Her efforts at Global Health Alliance from Wayne State University are focus in four areas:

- Designated to approach communities and professionals left out on the global health conversation. Partnering with local partners for education and outreach, like Freedom house and Samaritas.

- Online Summer workshops
- Introducing the concept of one health in global health. Special publication of the Global Health Journal
- Bringing students into play to expand the knowledge and spread the word on global health re-education

Dr. James Trosko, Emeritus Professor at Michigan State University, provided background on the long-standing relationship with JSPS and past projects on radiation that MSU has been collaborating with Japanese researchers over the last decade, particularly in Nagasaki. He invited all the attendees to think that the Study of One Health can not left our radiation, as radiation has been part of the earth since the beginning of times.

Dr. Hirata and Ms. Kunimasa, Director and Program Leader at the Japan Society for the Promotion of Science (JSPS) presented to the public a timeline of collaboration from JSPS in the United States and presented fellowship opportunities for U.S.researchers in Japan and how Japanese researchers can receive funding.

Dr. Thomas Glasmacher, Facility of Rare Isotope Beams (FRIB) laboratory Director at Michigan State University, made a brief presentation on the history for FRIB and the federal support of the institution. He also explained the current focus of the FRIB in societal applications. FRIB is also working in recycling the helium is been used in the plant to offer to applications in social life. In the last year, FRIB has implemented a workforce development program to attract, train and retain talent and applied to ISO regulations to show the community the potential of the facility. Community outreach has been a focus, through the SMASH program and other collaborations with international programs.

Dr. Keiji Suzuki, Associate Professor at Nagasaki University Japan, Atomic Disease Bomb Center, gave a virtual presentation on carcinogenesis and an explanation on DSB's, concluding that according to the center research from DSB measurements and genome analyses, in vitro, there is no obvious proof indicating that low dose radiation leaves any radiation signs. Moreover, he concludes in-vivo experiments show that exposure to 1 mGy/day does not accumulate DSB's; even if most of his presentation was related to DSB kinetics, there is no evidence indicating that low dose/low dose rate exposure causes any detectable excess biological risk.

Dr. Carmel Mothersill, Professor and Canada Research Chair at McMaster University Canada, following up Dr. Suzuki topic on low level radiation addressed the questions of: what is a low dose? What are the mechanisms? What are the issues? What are the needs to go forward towards a global health approach? She provided examples of low dose exposures; factors that affect exposure such as lifestyle, dose, genetics, age, gender and other stressors; describe normal dose low exposures in the communities; psychological perineal mechanisms of people been exposed to low level radiation and conclude that non target radiation effects has the same effects that direct radiation. She invited her colleagues on the matter and interested researchers in the public to work on knowledge translation, for future scientist and for the society (in relation of the FRIB community outreach focus); education in the use of low background facilities; funding; and chronic mediation facilities.

Dr. Christopher Contag, Founding Director of the Institute for Quantitative Health Science and Engineering (IQ) at Michigan State University, started the last presentation of the day educating the conference on the development of IQ facilities and the multiples areas covered under its research and investigation: imaging, radiochemistry, nuclear medicine, stem cell, genome editing and nanotechnology. IQ presented innovation on products that have been created and the application of One Health in technology utilizing microscopic imaging and insects to detect cancers and how it will be use for studies in heart conditions. He lastly invited everyone to collaborate in research projects of interest in the biomedical imaging field at MSU.

The first One Health/One World Day conference was successful in providing a forum for faculty researchers and students to exchange ideas and research on the One Health approach. In addition, the following benefits were gained

from this conference:

- Building Future collaboration between the Institute for Quantitative Health Science on international partnerships and research opportunities.
- Lessons learned on how other regions around the world, like Vietnam, have been able to start and make a sustainable network *model* on One Health efforts, increasing curriculum in universities, particularly in MPH and MVM programs/
- Dr. Ijeoma Opara's presentation on decolonializing global health challenged each of us to "reset" our thinking/philosophy/goals on what is truly wish to achieve in global health, not only for MSU; but just as importantly for the community and the world.
- Reintroduction of the Japanese Society for the Promotion of Science to MSU. Over the course of the two days reconnected with this long-standing institution and his director, Dr. Hirata, and program leader, Ms. Kunimasa, on the many possibilities for JSPS to sponsor researchers at MSU or our postdocs/fellows to study in Japan.
- Reintroduction of the conversation at MSU of the deleterious effects of low radiation in our environment. A future meeting with Dr. Glasmacher's from Facility for Rare Isotope Beams (FRIB) and Dr. Contag's designee from the Institute for Quantitative Health Science (IQ) with regard to develop further research strategies on this increasing health hazard will be scheduled.

-Workshop/Seminar Agenda

One Health, One World Day
Global One Health effects of low- level radiation on human health
HYBRID EVENT
Zoom number: 945 8500 9799
Passcode: 579646

Wednesday November 03rd, 2021	
8:15am to 9:00am	Breakfast at FRIB 1300 Auditorium Room
9:00am	Opening remarks: William Cunningham (Welcome) Douglas Gage (Opening comments)
9:30am to 9:45am	**Melinda Wilkins** (One Health at MSU)
9:45am to 10:15am	**Pham-Duc Phuc** (One Health in Vietnam and South East Asian Countries)
10:15am to 10:30am	Break
10:30am to 11:30am	**Kristy Murray** (Cracking a Medical Mystery using a One Health Approach: Mesoamerican Nephropathy in Nicaragua)
11:30am to 12:30pm	**Ijeoma Opara** (Global Health Education reimagined)
12:30pm to 1:30pm	Lunch at FRIB 1300 Auditorium Room
1:30pm to 2.15pm	Opening comments: James Trosko (Introduction on radiation) **Kohji Hirata** (Japan Society for the Promotion of Science) **Thomas Glasmacher** (FRIB & Human Health)
2:15pm to 4:00pm	**Keiji Suzuki** (Need for Human Low-Level Radiation Studies) **Carmel Mothersill** (Status of Low-Level Radiation graduate education/research in North America) **Christopher Contag** (Emerging biomedical research at MSU)
4:00pm to 4:30pm	Panel Discussion (Moderator: James Trosko)
4:30pm to 4:45pm	Closing comments