



One Health, One World Day



College of
Osteopathic Medicine
MICHIGAN STATE UNIVERSITY



Institute for Global Health
MICHIGAN STATE UNIVERSITY

2021
November 03

FACILITY FOR RARE ISOTOPE BEAMS,
East Lansing, Michigan

In collaboration with:



日本学術振興会
Japan Society for the Promotion of Science

MICHIGAN STATE
UNIVERSITY

College of Veterinary Medicine

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

PROGRAM AT A GLANCE

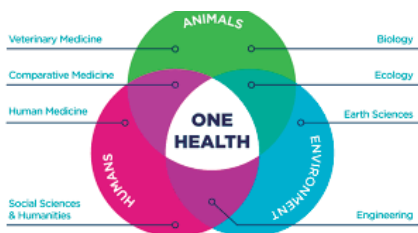
Wednesday November 3rd, 2021

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

One Health

What is ONE HEALTH?

It is estimated that 60% of recently emerging human diseases, including HIV-1 and pandemic influenza, originate from animals [1-4]. The increasing pressures of zoonoses, which are infectious diseases of animals that can be naturally transmitted to humans, have their roots in many causes. MacCreedy has estimated that since the dawn of human agriculture, the terrestrial vertebrate biomass has shifted from humans and their domesticated species accounting for ~0.1% 10,000 years ago to 98% today [5].



*Illustration courtesy of UC Davis.

These approximations demonstrate the exponential growth of opportunities for pathogens to spread with increasing ease from the animals upon which we depend to us. Besides growth of human and animal populations, many other factors drive zoonoses. These include habitat destruction and the resultant increased contact between humans and wildlife; bushmeat consumption, which was linked to HIV-1 infections in humans [2], and climate change, which influences the geographic range

of many disease vectors. Range expansion into areas heavily populated by humans and human encroachment into the habitats of animal reservoirs also increase the risk of human infection [6]. The global economy has enabled the rapid spread of people, animals, plants, and agricultural products across the world. This mobility has contributed to more frequent outbreaks of zoonotic diseases and infections of naive populations [7]. To address these diverse challenges, innovative ways of thinking about health from an integrated perspective that countenances human, animal, and environmental factors must be developed. Since ancient times, our understanding of human medicine has been informed by the study of animals. In fact, until the early 20th century, the studies of human and animal medicine were closely intertwined [8]. However, with the drive for specialization that accompanied the Industrial Revolution, linkages between the practice of human and animal medicine decreased. Veterinary and human medicine became distinct disciplines with separate training, compliance, funding, and professional societies, and interactions between professionals with training in these disciplines declined. Recently, there has been a renewed interest in re-bridging these now disparate fields, as well as incorporating the environmental sciences, under the heading of “One Health,” which is defined as a cross-disciplinary initiative to consider diverse data and interdependencies in managing human, animal, and environmental well-being [9,10]. Several features of this definition of One Health are notable. The definition is broad and encompasses both conceptual and operational aspects. Conceptually, the definition demands that analyses conducted under the auspices of the “One Health” moniker include a consideration of environmental factors. Operationally, One Health encompasses a worldwide strategy for expanding interdisciplinary collaboration and communication in germane aspects of human, animal, and environmental health.

Source: Mwangi W, de Figueiredo P, Criscitiello MF (2016) One Health: Addressing Global Challenges at the Nexus of Human, Animal, and Environmental Health. *PLoS Pathog* 12(9): e1005731. doi:10.1371/journal.ppat.1005731



The Institute for Global Health (IGH) Michigan State University College of Osteopathic Medicine

The Institute for Global Health (IGH) -previously known as the Institute for International Health (IIH)- was established at Michigan State University (MSU) in **January 1987** to marshal university resources for addressing global health issues by:

- Promoting faculty and student research in international health, through scholarly activities such as seminars, conferences, workshops, forums, summer non- international- health endeavors of faculty and students;
- Serving as a focal, coordinating point at MSU for visiting international health scientists and students;
- Securing external funding for collaborative international health projects between MSU and institutions in overseas countries;
- Serving as a center for information gathering, exchange and dissemination on world health problems.

IGH first funded projects (1987- 1992)

- Prevention and treatment of cardiovascular diseases in Bulgaria
- Molecular methodology for vaccine development against Schistosomiasis in Egypt
- Workshop on Tropical Diseases
- Training in Medical Informatics in Sub- Saharan African Countries
- Environmental Sciences in Japan
- Kellogg International Fellowship Program in Health, (29 fellows in 18 countries)
- Medical Trainer College Course Japan

The hallmark of these initial IGH projects was the multidisciplinary approach; typically, no less than four colleges and seven faculty from these colleges were involved in each project. Multidisciplinary research on global health issues and effective outreach to communities abroad and in Michigan were central to the mission of the IGH.

Currently, IGH supports 12 health-related study abroad programs globally. Students, faculty and researchers from MSU's health care colleges (COM, CHM, CON, CVM, CSS) participate in these programs, as well as seven other participating Colleges at the University.

IGH has funded research projects in ten countries on four continents.

IGH hosts faculty and students from many countries to deliver continuing health education seminars. Students and faculty from Egypt, South Korea, China, Peru, Japan, Dominican Republic, Cuba, Guatemala and other countries are frequent enrollees in these courses.

There is a global need to educate the next generation of faculty and researchers utilizing the One Health discipline that incorporates human, animal, ecology and environmental factors in addressing the world's health. In 2020, IGH accepted the first students in the ***Master of Science in Global Health (MSGH)***. The One Health discipline is integrated into all of the courses in the MSGH.

With the concept of preparing the institute to be a center for information and promote attention to world health problems at MSU, the ***Education and Research consortium of the Americas*** (ERCA), was established in 2019. Six institutions from Latin America and South America, whom IGH has been partnering with for the past decade, joined this consortium in a collaborative effort to develop global education, research and capacity building. The results of the annual research conference were the establishment of four online Virtual Institutes for continuing to partner in education and research. Research partners decided upon the four Virtual Institutes: Psychosocial Determinants of Health, Tropical Medicine/Infectious Diseases, Water Quality/Waste Management and Ecology and Human Well-Being.

IGH continues to flourish as MSU's focal point for global health by expanding the global footprint on MSU campus, study abroad programs, as well as collaborative partnerships on research and capacity building around the world.

Please visit our website at: <https://ighealth.msu.edu/> or email us to: igh@msu.edu

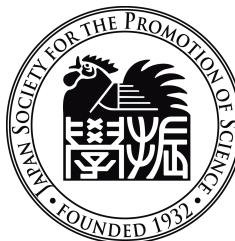
The Japan Society for the Promotion of Science

The Japan Society for the Promotion of Science (JSPS), or Gakushin for short, is an independent administrative institution, established by way of a national law for the purpose of contributing to the advancement of science in all fields of the natural and social sciences and the humanities. JSPS plays a pivotal role in the administration of a wide spectrum of Japan's scientific and academic programs. While working within the broad framework of government policies established to promote scientific advancement, JSPS carries out its programs in a manner flexible to the needs of the participating scientists. JSPS was founded in 1932 as a non-profit foundation through an endowment granted by Emperor Showa. JSPS became a quasi-governmental organization in 1967 under the auspices of the Ministry of Education, Science, Sports and Culture (Monbusho), and since 2001 under the Ministry of Education, Culture, Sports, Science and Technology (Monbukagakusho). Over this 70-year period, JSPS has worked continuously to develop and implement a far-reaching array of domestic and international scientific programs. On October 1, 2003, JSPS entered a new phase with its conversion to an independent administrative institution, as which it will strive to optimize the effectiveness and efficiency of its management so as to improve the quality of the services it offers to individual researchers, universities, and research institutes. JSPS's operation is supported in large part by annual subsidies from the Japanese Government. Its main functions are:

- To foster young researchers,
- To promote international scientific cooperation,
- To award Grants-in-Aid for Scientific Research,
- To support scientific cooperation between the academic community and industry, and
- To collect and distribute information on scientific research activities.

To contact JSPS:

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<https://jpspsusa.org>*



EVENT INFORMATION

BADGE & MASKS

Participants are requested to wear their event badges at all times when visiting the event venue. Masks during all indoor activities are required, except during meals, and recommended for outdoor activities.

CONFERENCE INFORMATION ASSISTANCE

The local team is ready to assist you throughout the duration of the event via email: igh@msu.edu or phone 517-884-3788 or 517-353-8992.

LANGUAGE

The official language of the conference is English.

VENUE

Facility for Rare Isotope Beams (FRIB)
Michigan State University
640 S Shaw Ln, East Lansing, MI 48824
<https://frib.msu.edu/>

WIFI

The ONE HEALTH, ONE WORLD DAY EVENT is pleased to provide all in person attendees with complimentary internet access during the conference.
Network: MSUNet Guest or MSUNet Guest 3.0
Password is not required. You will need to accept terms and conditions.

ZOOM LOG IN

To join this event via zoom please access with the following link:
<https://msu.zoom.us/j/94585009799?pwd=N3R4LzllLdFJIZkdiNmdlMkljZm1zUT09>
The meeting ID number is: 945 8500 9799 and the passcode is: 579646.

SOCIAL MEDIA

Follow the latest conference updates on Twitter: @ighmsu

DRESS CODE

Dress code for the event, lunches and social events is business casual.

INFORMATION AND EMERGENCY

The national emergency number is 911.
For general tourist information you can contact Lansing Tourism (888) 2-LANSING.

HEALTH & ACCIDENT INSURANCE

The event does not include insurance. All participants should arrange for their own travel insurance. Its highly advisable that all visitors take out a personal medical insurance policy prior to initiating their travels, considering the current pandemic. According to current CDC guidelines travelers will need to get tested no more than 3 days before you travel by air into the United States

(US) and show your negative result to the airline before you board your flight, or be prepared to show documentation of recovery (proof of a recent positive viral test and a letter from your healthcare provider or a public health official stating that you were cleared to travel).

COVID-19 TESTS IN LANSING AND EAST LANSING

This are two (2) local options serving East Lansing and Lansing area. We encourage you to make covid-19 test arrangements with any laboratory you would like to comply with the requirements of the airline and the country of residence where you will return.

Sparrow Laboratories

Drive-Thru Services (Formerly Sears Auto Center)
3131 E. Michigan Avenue, Lansing, MI 48912
Phone: 517- 364-1000 Website: <https://www.sparrow.org/departments-conditions/all-departments/laboratories/covid-19-testing-locations>
Hours: DAILY | 6 a.m. to 8 p.m.

Pricing:

- COVID-19 Diagnostic lab test (Nasal Swab): \$70 (CPT/HCPCS 87635, U0002, U0003)
- COVID-19 Antibody reference lab test (Blood Draw): \$50 (CPT 86769)

Results: 48 to 72 hours.

Lansing Urgent Care Frandor

505 N. Clippert St
Lansing, MI 48912
Phone: 5179992273 Website: <https://www.lansingurgentcare.com/covidtesting>
Rapid Antigen Test is designed to detect viral proteins present in the Covid-19 virus WHILE YOU WAIT (10-15 minutes). Walk ins allow.

Hours: DAILY | 9 a.m. to 9 p.m.

Pricing: Medical visit \$100 plus \$50 for the test. Total \$150

Results: test result is available in just 10-15 minutes during the medical visit.

LOCAL TIME

East Lansing and Lansing observe Eastern Standard Time (EST) and will adjust to Daylight Saving Time on November 07, 2021.

PASSPORTS

All foreign visitors to United States must possess a valid passport and check the VISA requirements to enter the United States.

TAXIS

There are limited taxi services but Uber and Lyft services work very well through the app. DD's Downtown Taxi (517) 252-6698; L Town Cab (517) 706-7992.

TELEPHONE

The international access code for United States is +1.

SPEAKERS information



DOUGLAS GAGE, PhD.

Dr. Gage supports cross-campus, interdisciplinary research initiatives and manages the Internal Grant program in the Office of Research and Innovation. He is the primary coordinator for the MSU Global Impact Initiative, a campus-wide effort to hire more than 100 new faculty in disciplines including STEM and biomedical research. He also represents the Office of Research and Innovation on the oversight committees

for other major research initiatives, including the Institute for Quantitative Health Sciences and Engineering (IQ), the Institute for Integrative Toxicology, the Drug Discovery Initiative, the Michigan Translational Research and Commercialization Hub, and the Spectrum Health-MSU Research Alliance.

Gage chairs the University's Advisory Council for oversight of high-risk international projects, including the USAID-funded GRAIN agricultural development project in Afghanistan. His other responsibilities have included being the academic lead on two major research building projects on campus: the Molecular Plant Sciences Building (2012) and the Interdisciplinary Sciences and Technology Building (2019). Recently, he has been part of the team planning the reactivation of MSU research that was suspended following the COVID-19 pandemic.

Dr. Gage remains a professor in the Department of Biochemistry and Molecular Biology where his previous research focused on metabolic engineering of plant biochemical pathways. In 2002, he left MSU to take a position at Pfizer Global Research and Development in Ann Arbor, where he was a Senior Director leading the Discovery and Early Clinical Development biomarker effort. He returned to an administrative role at MSU in the fall of 2007.

Gage earned his bachelor's and master's degrees in Biology from Florida State University and his Ph.D. in Botany from the University of Texas, Austin. He completed his post-doctoral training at the MSU-DOE Plant Research Laboratory and at the MSU NIH Mass Spectrometry Research Resource.

- Vice President, Office of Research and Innovation Michigan State University
- **Field/Interest:** biology, toxicology, research
- **Email:** gage@msu.edu



WILLIAM CUNNINGHAM, DO, MHA

Dr. William Cunningham is the Associate Dean for Global Health for the College of Osteopathic Medicine and the Director of the Institute for Global Health at Michigan State University. Dr. Cunningham was Chief Resident in the Akron General Emergency Medicine program and practiced emergency medicine for over twenty years. He has been active in medical education for his entire professional career serving as an Associate Director in an Emergency Medicine

Residency and as Director of Medical Education at Metro Health/University of Michigan Hospitals in Grand Rapids, Michigan.

At Michigan State University College of Osteopathic Medicine, he was appointed to the Curriculum Committee Revision Task Force and served in that capacity for three years until the completion of the project. He has served for 4 years on the Admission Committee for College of Osteopathic Medicine.

As Director of the Institute for Global Health he has expanded the footprint of research, education

and capacity building to fourteen countries on four continents. He co- founded the Global/One Health committee at MSU five years ago. He initiated the development of an on-line Masters in Global Health which started in January 2020.

Dr. Cunningham's passion is to continuously build relationships that will create programs and good will to bring hope and health to our communities and the world.

- Associate Dean for Global Health and the Director of the Institute for Global Health (IGH) at the College of Osteopathic Medicine at Michigan State University.
- **Field/Interest:** One Health, Emergency Medicine
- **Email:** cunni164@msu.edu



MELINDA WILKINS DVM, MPH, PhD.

An alumna of the US Centers for Disease Control and Prevention's Epidemic Intelligence Service, Wilkins earned her DVM at MSU, her MPH from the University of Illinois Springfield, and then returned to earn her PhD from the MSU Department Large Animal Clinical Sciences with a focus in epidemiology. Her areas of expertise include disease surveillance (animal and human), surveillance system evaluation, zoonotic disease, epidemiology, and outbreak investigation. She was an assistant professor, instructor, and advisor in the Program in Public Health (PPH). Prior to joining the PPH in 2011, Wilkins was with the Michigan Department of Community Health, Bureau of Epidemiology, Division of Communicable Disease for 12 years, serving as the division director from 2004 to 2011. She began her career with the US Department of Agriculture Veterinary Services and has extensive experience consulting and teaching in international settings. Dr. Wilkins' experience with governmental agencies and industry, as well as in research and university environments, brings a set of skills that makes her uniquely her actual role at MSU. She is passionate about mentoring professionals and offering educational opportunities to those individuals who are already on the front lines, working to make and keep our food supply safe.

- Associate Professor of One Health, Public Health, and Global Health Education
- **Field/Interest:** food safety, public health, one health, zoonotic diseases, epidemiology.
- **Email:** wilkinsm@msu.edu



PHAM DUC PHUC MD, MSc, PhD.

Dr. Phuc holds a Medical Degree from Hanoi Medical University (1995) and a Master's degree in International Health from the University of Copenhagen (2003). He also attained a PhD degree (December 2011) from the University of Basel, Swiss Tropical and Public Health Institute. His PhD focused on wastewater and excreta use in agriculture in Vietnam and its health risks and environmental impacts. He has been involved in many research projects on health risks related to water and sanitation, especially at the interface between environment and health, using an interdisciplinary approach (One Health, Ecohealth). He has been developing and participating in different initiatives with national and international partners to generate funding for research and training focusing on infectious and zoonotic diseases, antimicrobial resistance, and food safety.

- Coordinator, Vietnam One Health University Network (VOHUN); Deputy Director,

Center for Public Health and Ecosystem Research (CENPHER), Hanoi University of Public Health (HUPH); Director, Institute of Environmental Health and Sustainable Development (IEHSD)

- **Field/Interest:** one health, zoonotic diseases, food safety.
- **Email:** pdp@hspsh.edu.vn ; phucnihe@gmail.com



KRISTY O. MURRAY, DVM, PhD.

Dr. Kristy Murray is the Vice-Chair for Research for the Department of Pediatrics and a Professor of Pediatrics in the section of Pediatric Tropical Medicine at Baylor College of Medicine. She also serves as the Assistant Dean for Faculty and Academic Development for the National School of Tropical Medicine, and she is the Director of the Center for Human Immunobiology at Texas Children's Hospital

She received her Doctorate in Veterinary Medicine from Texas A&M University in College Station and a PhD in Preventive Medicine and Community Health in Clinical Investigations from the University of Texas Medical Branch in Galveston.

Dr. Murray spent the first five years of her career at the Centers for Disease Control and Prevention (CDC). At CDC, she served two years as an Epidemic Intelligence Service Officer conducting outbreak investigations, including the initial outbreak of West Nile virus in New York City in 1999, bubonic plague in Wyoming, unexplained illness and deaths in injection drug users in Ireland, and polio in Bangladesh. She received several awards at CDC including the Secretary's Award for Distinguished Service.

In 2002, Dr. Murray returned to Texas, and her research over the past 19 years has been focused on both laboratory- and clinically-based studies related to vector-borne and zoonotic diseases. Dr. Murray has received several awards for her work in academia, including the Innovation in Health Science Education Award from the UT Academy of Health Science Education, Dean's Award for Teaching Excellence, the UT Health Science Center Young Investigator Award, and the Texas A&M College of Veterinary Medicine's Distinguished Alumni Award. Most recently she received the Bailey Ashford Medal from the American Society of Tropical Medicine and Hygiene for her work in tropical medicine. Dr. Murray has authored more than 130 scientific and technical papers.

- Professor of Pediatrics and Molecular Virology and Microbiology, Vice Chair for Research, Department of Pediatrics, Assistant Dean, National School of Tropical Medicine, Director, Center for Human Immunobiology Baylor College of Medicine and Texas Children's Hospital
- **Field/Interest:** pediatrics, public health, one health, zoonotic diseases, tropical medicine.
- **Email:** kmurray@bcm.edu



IJEOMA NNODIM OPARA, MD

Dr. Opara is an internationally recognized double-board certified physician, public health professional, speaker, and consultant. She helps communities, organizations, and systems solve the problem of creating equitable, just, antiracist, and decolonized environments in order to achieve their mission and meet their bottom line. She centers Black and indigenous African brilliance, solutions, and liberation in her asset-based work as an educator, activist, scientist, and clinician. She has created and led various programs catered towards

graduate education in health equity. She has received significant recognition by her peers and nationally for her tireless efforts towards bridging the gap and raising awareness on racial disparities exacerbated by the COVID- 19 pandemic.

- Medicine Pediatrics Physician, Founder & Director of Graduate Medical Education Health - Equity Curricula, Associate Program Director
- **Field/Interest:** global health education, health equity, public health.
- **Email:** innodim@med.wayne.edu



JAMES TROSKO, PhD.

After receiving a Ph.D. in radiation genetics, Dr. Trosko did a postdoctoral fellowship at Oak Ridge National Laboratory (1963-66) under Drs. Ernest Chu, Sheldon Wolf and Richard B. Set low in DNA damage/repair and in vitro mutagenesis. He published the first paper showing that normal human cells could repair their UV-damaged DNA [1]. He went to Michigan State University (1966) to work on the xeroderma pigmentosum (which he & Dr. James E. Cleaver first showed that cells from these patients did not repair their UV-damaged DNA [2]), Cockaynes [3] and Blooms [4] syndromes (human genetic, sun-sensitive syndromes, predisposed to either cancer or premature aging) and to work on anti-cancer drug, cisplatin, with the late Dr. Barnett Rosenberg [5]. Later, after receiving a NCI-Career Development award, he went to work at the McArdle Laboratory for Cancer Research-University of Wisconsin on chemical carcinogenesis under the late Dr. Van R. Potter, where he discovered that the tumor promoter, TPA, was not genotoxic but inhibited gap junctional intercellular communication (GJIC) [6]. After returning to MSU, Trosko's lab developed 4 new in vitro assays to detect non-genotoxic chemicals that had teratogenic, tumor promoting, immuno-modulatory, neuro-, cardiovascular -and reproductive- toxic effects [7-10]. He was featured on the cover of Cancer Research as one of the investigators who linked gap junctions to the carcinogenesis process. He coined the term, "epigenetic toxicology". In 1990-92, Dr. Trosko was Chief of Research at the Radiation Effects Research Foundation (RERF) in Hiroshima, Japan. He has been recognized as a model teacher [one specific example is his first graduate student's achievement, Dr. Stephen Warren, discover of the cloned Fragile X gene] and a internationally-recognized basic science cancer researcher, in the fact that Dr. Trosko has given over 700 lectures around the world .and research mentor by awards such as the MSU-Teacher Scholar; MSU Distinguished Professor; NCI- Career Development Awardee; Sigma Xi Senior Research Scholar; Japan Society for the Promotion of Science; Korean Ministry of Science & Technology's "Brain Pool" Awardee; and Seoul National University "World Class University Invited Professorship".

- Professor Emeritus
- **Field/Interest:** mechanisms of carcinogenesis and mutagenesis.
- **Email:** trosko@msu.edu



THOMAS GLASMACHER, PhD.

As FRIB Laboratory Director, Thomas Glasmacher is the responsible administrator for the 630-employee FRIB Laboratory, which is equivalent to a college within Michigan State University. He also has full responsibility and authority to execute the FRIB Project. This includes overall line management responsibility, the design, construction, and transition to operations of FRIB, the management of all contractors, and ensuring the full project scope is delivered in a safe, cost-efficient, and environmentally responsible manner.

Thomas joined the National Superconducting Cyclotron Laboratory at MSU in 1992 as an NSCL Fellow and performed research in intermediate energy nuclear physics. In 1995 he joined the MSU faculty in the Department of Physics and Astronomy and NSCL, where he is now a University Distinguished Professor. His research resulted in more than 200 publications and focused on exploring the structure of rare isotopes with new experimental techniques involving gamma-rays. This work was recognized in 2006 with the Sackler Prize in the Physical Sciences.

From 2003-2009, Thomas was the associate director for operations at NSCL. In 2008 he led the team that prepared the winning FRIB proposal. He became the FRIB Project Director when the Cooperative Agreement between the U.S. Department of Energy (DOE) and MSU was signed in June 2009. He built the FRIB Project team and successfully led the team through conceptual design and alternative selection (Critical Decision 1), preliminary design and baselining (Critical Decision 2), final design, and into construction (Critical Decision 3a and 3b). FRIB is baselined at a total project cost of \$730 million and set for completion in June 2022. FRIB Project completion date (Critical Decision 4) is June 2022, managing to early completion in December 2021 and start of user operation in early 2022.

Thomas was a member of the Nuclear Science Advisory Committee from 2004-2007, is a Fellow of the American Physical Society, a Fellow of the American Association for the Advancement of Science, and is a Stanford Certified Project Manager.

Thomas earned MS (1990) and PhD (1992) degrees in low-energy experimental nuclear physics from Florida State University.) and PhD (1992) degrees in low-energy experimental nuclear physics from Florida State University.

- Laboratory Director and Project Director for the Facility for Rare Isotope Beams (FRIB)
- **Field/Interest:** nuclear sciences, physics.
- **Email:** glasmach@frib.msu.edu



KEIJI SUZUKI, PhD.

Dr. Keiji Suzuki is a radiation biologist, who is interested in studying molecular and cellular mechanisms of radiation-carcinogenesis using human thyroid follicular cells as well as animal models. In particular, he identifies tissue response against radiation exposure as a key event leading to the radiation late effects including cancer induction. His recent research also demonstrates that cell competition is a critical mechanism to suppress propagation

of the initiated cells caused by radiation exposure. He is a board member of the Japanese Radiation Research Society and the Japanese Cancer Association.

Career highlight:

July 1987: Yokohama City University School of Medicine, Research Associate

Dec 1993: Columbia University Center for Radiological Research, Research Scientist

April 2004: Nagasaki University Graduate School of Biomedical Sciences, Associate Professor

July 2007: Nagasaki University Atomic Bomb Disease Institute, Associate Professor
Academic Background: Radiation Biology, Molecular and Cellular Biology,

- Associate Professor, Department of Radiation Medical Sciences, Atomic Bomb Disease Institute, Nagasaki University
- **Field/Interest:** radiation biology, radiation medical sciences.
- **Email:** kzsuzuki@nagasaki-u.ac.jp



CARMEL MOTHERSILL, PhD.

Dr. Carmel Mothersill trained as a zoologist in University College Dublin in Ireland and obtained her PhD in 1976 in muscle biochemistry before joining the Physics Department at the Dublin Institute of Technology (DIT), now the Technological University of Dublin, as a radiobiologist. She worked as a post doctoral fellow in St Luke's hospital in Dublin, then the only radiotherapy center in Ireland under a joint agreement

Later she developed and ran the Radiation and Environmental Science Centre at DIT until moving to McMaster University in Hamilton Ontario in 2003 to take up a Canada Research Chair in Radiobiology. Her research interests include the non-targeted effects of radiation and in particular, how bystander effect and genomic instability modify the radiation dose response curve. She is also interested in the mechanisms underlying non-targeted effects of radiation which might be exploitable in the treatment of cancer. More recently she has become interested in the contribution of non-targeted effects to persistent environmental radiation damage and in developing new approaches to radiation protection of humans and the environment. She has over 300 peer-reviewed publications and is a contributor to many books concerning cancer therapy, radiation protection and radiobiology. She has trained more than 60 students to PhD level. In addition she has successfully run Irish, European Union and Canadian research programmes, and run major European and International conferences and workshops. Carmel is married to fellow radiobiologist Dr. Colin Seymour and has 3 daughters (who left 3 cats when they left home), and a dog called Beanie!

- Professor, Department of Biology; Canada Research Chair in Environmental Radiobiology, McMaster University
- **Field/Interest:** genetics and molecular biology
- **Email:** mothers@mcmaster.ca



CHRISTOPHER CONTAG, PhD.

Dr. Contag joined Michigan State University in 2017 as the founding director of the Institute for Quantitative Health Science and Engineering (IQ) and the inaugural chair of the new Department of Biomedical Engineering in the College of Engineering. He is also a professor in the Department of Microbiology and Molecular Genetics. Dr. Contag received his B.S. in Biology from the University of Minnesota, St. Paul in 1982.

He received his Ph.D. in Microbiology from the University of Minnesota, Minneapolis in 1988, where he did his dissertation research on the topic of viral infections of the central nervous system. He was a postdoctoral fellow at Stanford University from 1990-1994 in the Department of Microbiology where he studied mother-to-infant transmission of HIV, and then joined the faculty in Pediatrics at Stanford in 1995 with a joint appointment in Microbiology and Immunology and courtesy appointments in Bioengineering and Radiology. Dr. Contag served as the Associate Chief of the Division of Neonatal and Developmental Medicine, the director of Stanford's Center for Innovation in In Vivo Imaging (SCI3) and co-director of both the Molecular Imaging Program at Stanford (MIPS) and Child Health Research Institute (CHRI) at Stanford University. Dr. Contag has developed and used noninvasive imaging approaches to reveal molecular processes in living subjects, to understand host pathogen interactions, to advance diagnostic and therapeutic strategies for cancer, and to reveal the nuances of stem cell engraftment and expansion. His work with extracellular vesicles (EVs), exosomes and microvesicles, has focused on their biological and diagnostic relevance as well as engineering EVs as drug delivery systems. Dr. Contag is a founding member, and past president of the Society for Molecular Imaging (now part of WMIS) and recent past president and a Fellow of WMIS. For his fundamental contributions in the field of molecular

imaging, he was awarded the Achievement Award from the Society for the Molecular Imaging. For his fundamental contributions to the field of optics he was awarded the Britton Chance Award from the International Society for Optics and Photonics (SPIE). Dr. Contag was a founder of Xenogen Corp., now part of PerkinElmer, a company with the mission of commercializing in vivo bioluminescence and fluorescence imaging, and is a founder of BioEclipse Inc., a company aimed at improving cancer immunotherapy, and a founder of PixelGear, a point-of-care pathology company.

- Hannah Distinguished Professor of Biomedical Engineering and Microbiology & Molecular Genetics; Chair, Biomedical Engineering; Director, Institute for Quantitative Health Science & Engineering
- **Field/Interest:** molecular imagining, one health, human health.
- **Email:** contagch@egr.msu.edu



KOHJI HIRATA, PhD, MS

Born in Tokyo.
 Bachelor: Keio University (Engineering)
 Master: Tokyo University of Education (Physics)
 Ph.D.: University of Tsukuba (theoretical physics, particle physics)
 March 1979
 1984-1998 Assistant and Associate Prof. , KEK, National Laboratory

for High Energy Physics (Accelerator Department) . (Enjoyed the beam physics research for TRISTAN and KEKB.)
 1994-2000 Chairman of the Beam Dynamics Panel of International Committee for Future Accelerators (ICFA).
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