



American Society for Quality (www.asq.org) – Washington D.C. and Maryland Metro, Section 509 (www.asq509.org)

Biomed/Biotech Special Interest Group (SIG) Meeting

“Radiation Toxicity and Syndrome”

To be presented by

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&

Program Director

Radiation Combined Injury Program

Armed Forces Radiobiology Research Institute (AFRRI)

Bethesda, MD

Thursday, March 8, 2012

6:00 – 6:20 PM – Networking; Pizza/drink

6:20 – 8:30 PM – Program

8:30 – 8:45 PM – Door-prizes drawing; Networking

Online Registration site: <http://www.asq509.org/ht/d/DoSurvey/i/35817>

Open to Public - \$5 for non-ASQ members to cover pizza/drink cost;

Free: ASQ Members, veterans, students, local interns, residents, postdocs, FDA Commissioner’s Fellows, and current job-seekers

Location: Kelly’s Deli Conference Center, 7519 Standish Place, Rockville, MD 20855

Registration Deadline: Please register by Thursday noon, March 8, 2012.

Question: Please contact Dr. C.J. George Chang, Chair of Biomed/Biotech SIG, ASQ509; gchang2008@yahoo.com or 240-793-8425 (cell).

Driving directions: **By Car:** From I-270 (N or S bound): Take Exit 9A and exit from the FIRST right exit; turn left (east) onto Shady Grove Dr.; turn right (south) onto Rockville Pike (**Route 355**); turn left (east) onto East Gude Dr.; turn left (north) immediately onto Crabb’s Branch Dr.; turn left (west) immediately onto Standish Place. The first building on your right side is 7519 Standish Place; open parking). The venue is on the first floor with its entrance opposite to the left side of building main entrance. **By Metro train:** Off from Red Line **Shady Grove Station**, and take RideOn **Route 59 TOWARD ROCKVILLE** and get off from “**Calhoun Place**” stop. Standish Place is next to the Bus stop. Our venue is within 2 min of walking distance from the stop.

Summary:

The possibility of exposure to radiation doses significantly enough to cause tissue injury is not as remote as it might seem. It is estimated that more than 50% of cancer patients receive **radiotherapy** at some point during the course of their diseases, and those exposures can injure normal tissues. Less likely, though still very real, is the possibility of being exposed to radiation after a **nuclear power plant accident**, either as a plant worker or a citizen who lives in or moves through fallout areas. The threat of exposure to radiation via a **nuclear or radionuclide-based terrorist device** is unfortunately also a real-world scenario. For these reasons, it is important to understand more about how radiation affects cells and tissues and learn how to ameliorate radiation injury to them.

Ionizing radiation at sublethal and lethal doses induces diverse damage to cells. The pathological effects of radiation are directly related to dose. A **triage score T** is assigned as $T=N/L+E$, where N/L is the neutrophil/lymphocyte ratio and $E=0$ if there is no emesis and $E=2$ if emesis is present. Radiation interacts synergistically with **trauma**. Patients with traumatic injury who also have whole-body or significant partial-body irradiation have a substantially worse prognosis. Radiation causes DNA breaks, activates apoptotic pathways, and induces bone marrow aplasia. As a result, **hematopoietic syndrome** (occurring at doses of 1-8 Gy), **GI syndrome** (5-20 Gy), and **neurovascular syndrome** (>20 Gy) can occur acutely. **Chronic radiation effects** are investigated as well. The current status of **treatment approaches** will also be discussed.

Presenter' Bio: [Juliann G. Kiang, PhD](#)

Dr. Juliann G. Kiang received her PhD in Environmental Health Sciences and her postdoctoral trainings in Pharmacology and Toxicology from University of California at Berkeley; in between she had a short training at Burroughs Wellcome Laboratory at England. Currently, she is a **full professor** in Department of Radiation Biology, **Research Professor** in Department of Medicine at Uniformed Service University of the Health Sciences; **Program Advisor** of Radiation Combined Injury Program at Armed Forces Radiobiology Research Institute (AFRRI).

Dr. Kiang's research focuses on elucidation of the mechanisms underlying radiation combined injury and development of innovative countermeasures to mitigate or treat radiation combined injury. Her research has been funded by NIH and Defense Threat Reduction Agency (DTRA) as well as AFRRI.

Dr. Kiang has published 125 peer-reviewed scientific articles and book chapters. She has received twice Henry Christian Memorial Award from Federation Association of Clinical Research in 1990 and 1993, respectively; Research & Development Achievement Award from the US Department of Army in 2006; STEM Role Model from the US Department of Defense in 2006. She is an **editorial member** for journals *Cell Research* and *Adaptive Medicine*. She is an **inventor** and has 2 patents. At her leisure, Dr. Kiang has published 6 Chinese books.