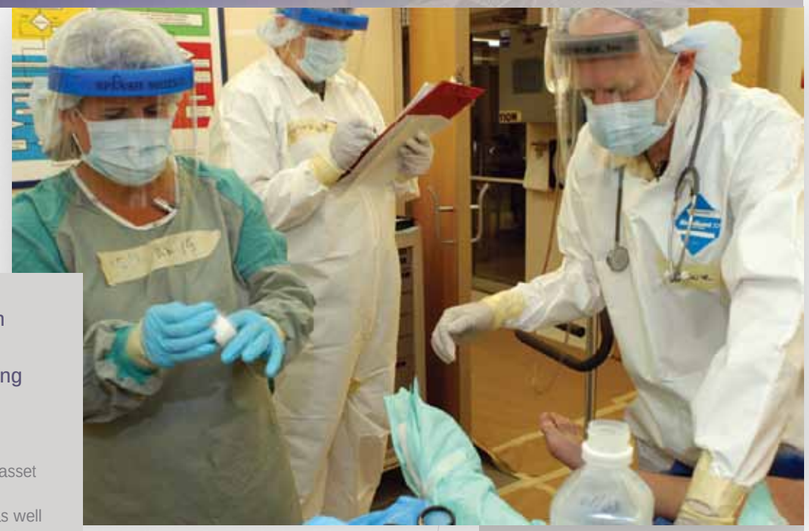
Partnerships for Innovation
ORAU
OAK RIDGE ASSOCIATED UNIVERSITIES

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

Improving Global Response to Radiation Emergencies



CONTACT US:
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www.orau.org/radiation-emergency-medicine/

Capabilities in Radiation Emergency Medicine, Response, and Continuing Education

- Managing and operating REAC/TS as a deployable asset of DOE/NNSA
- Providing 24/7 response, as well as medical and health physics advice and consultation, for national and international incidents involving ionizing radiation
- Managing and operating the Cytogenetic Biodosimetry Laboratory (CBL) at REAC/TS, one of only two federally funded labs of its kind in the U.S.
- Serving as one of only two WHO Collaborating Centers in the U.S.
- Serving as one of only 13 Collaborating Centers worldwide in WHO's Radiation Emergency Medical Preparedness and Assistance Network
- Providing continuing medical education for physicians and accredited by the Accreditation Council for Continuing Medical Education; other courses accredited by the American College of Emergency Physicians and the American Academy of Health Physics
- Providing hands-on continuing medical education courses on site or at various locations worldwide, including pre-hospital radiation emergency preparedness, radiation emergency medicine, and health physics in radiation emergencies, among others

In the event of a radiological or nuclear incident, first responders as well as hospital and emergency management personnel must call on their knowledge and training to provide immediate and effective care for victims. Through practical, hands-on education programs, Oak Ridge Associated Universities (ORAU) is improving global response to radiation emergencies. In addition, dedicated 24/7 deployable teams of physicians, nurses, and health physicists from the Radiation Emergency Assistance Center/Training Site (REAC/TS), which is managed by ORAU for DOE/NNSA, provide expert medical management of radiological incidents anywhere in the world.

Key Customers and Partners

- U.S. Department of Energy (DOE)
  - o National Nuclear Security Administration (NNSA)
  - o Office of Health, Safety and Security (HSS)
- U.S. Department of Health and Human Services (DHHS)
  - o Centers for Disease Control and Prevention (CDC)
  - o National Center for Environmental Health (NCEH)
- World Health Organization (WHO)
  - o Radiation Emergency Medical Planning & Assistance Network (REMPAN)
- International Atomic Energy Agency (IAEA)
  - o Response Assistance Network (RANET)
- National Aeronautics and Space Administration (NASA)

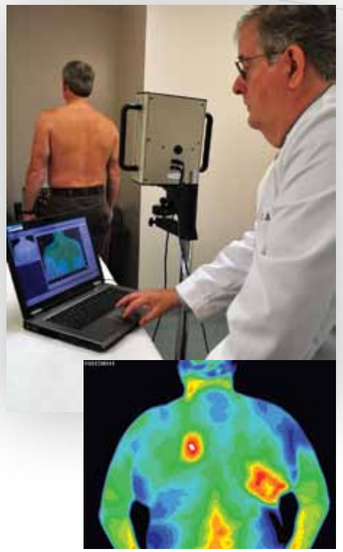
FY09 by the Numbers

- 1090+ emergency personnel from 35 states and more than 25 countries trained
- 40 courses conducted
  - o 15 held at REAC/TS
  - o 25 held off site

Improving Radiation Emergency Response Through Education and Specialized Expertise

For more than 30 years, REAC/TS has responded to thousands of calls for assistance and information related to the medical management of radiological events. Adding its depth of research and consultation capabilities, REAC/TS is uniquely qualified to teach medical personnel, health physicists, first responders, and occupational health professionals about radiation emergency medical response.

As an international expert in the medical management of radiation emergencies, REAC/TS provides incident response and consultation, continuing medical education, and simulation exercises to countries across the globe.



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2009 Key Accomplishments

- Students in Singapore, Toronto, and Kuwait participated in specially designed REAC/TS courses centered on medical management of radiation accidents. In addition, REAC/TS provided a specialized training course for the IAEA in Vienna, where students from over 20 countries were represented.
- As part of Empire 2009, a DOE national-level exercise that tested the U.S. government's technical response to a large-scale release of radiological material resulting from two dirty bombs in the New York state capitol building, REAC/TS performed mock chromosomal analyses in its Cytogenetic Biodosimetry Laboratory (CBL). REAC/TS also provided continuing medical education in Albany, Lake Placid, Tarrytown, Syracuse, and Buffalo.
- One of only a handful of laboratories of its kind in the world, the CBL supported the World Health Organization (WHO) by leading an international scoring exercise that was used as a pilot to test the ability of member laboratories to provide emergency triage and radiation dose assessment via the Internet site BioDoseNet. CBL doctors recruited 15 readers from eight countries to independently examine the same 20 images for structural chromosome aberrations and then shared their results with the CBL.
- REAC/TS personnel began using ultrasonography and thermography to establish accurate, less costly, non-invasive techniques for determining the level of radiation damage in tissue underlying a wound. Thermography measures the effects of radiation injuries over time. Because the process of healing generates heat, thermography may enable reconstruction of the extent and depth of the original injury.

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