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[Read the 2016 HP Salary Survey](#)

[See short course offerings starting on page 33](#)

“Assessment of National Efforts in Emergency Preparedness for Nuclear Terrorism: Is There a Need for Realignment to Close Remaining Gaps?”

53rd NCRP Annual Meeting, 6–7 March 2017

Armin Ansari, CHP, PhD, Adela Salame-Alfie, PhD, and Richard Toohey, CHP, PhD

Photos courtesy of Casper Sun (U.S. Nuclear Regulatory Commission), Cindy O'Brien (NCRP), and Tom Johnson (Colorado State University).



Presentation of the colors

The annual meeting of the National Council on Radiation Protection and Measurements ([NCRP](#)) officially began on Monday, 6 March 2017. Starting the day before, however, the meeting rooms in the basement of the Hyatt Regency in Bethesda, Maryland, were already abuzz with scientific discussion and exchanges. Traditionally, the NCRP's seven program area committees ([PACs](#)) meet separately that Sunday to discuss progress and plan their future activities. They will then come together Sunday afternoon in a joint-PAC meeting and share a summary of their discussions with other PACs.



Left to right: John Boice, Adam Hutter, and Gladys Klemic

Also by tradition, the night before the annual meeting, Council members gather to meet for dinner, recognize newly elected members of the Council, and hear an honored guest speak on a matter of interest to NCRP.

This year's guest speaker was Adam Hutter, PhD, director of the National Urban Security Technology Lab ([NUSTL](#)), formerly called the Environmental Measurement Laboratory (EML). The title of Hutter's lecture was “Sidekicks to the Heroes: How Science and Technology Supports First Responders.” In



Kimberly Gaskins

addition to providing an interesting pictorial history of the laboratory and its illustrious past directors, Hutter described an impressive portfolio of current projects and activities undertaken by NUSTL.

On Monday morning, the opening session of the meeting began with presentation of the colors by the Joint Armed Forces Honor Guard from the Military District of Washington, DC, and singing of the national anthem by Kimberly Gaskins from the U.S. Nuclear Regulatory Commission.



Adela Salame-Alfie

NCRP President John Boice, PhD, welcomed the attendees and introduced Adela Salame-Alfie, PhD, who noted that the issue of radiological emergency preparedness has evolved in the last 20 years from a primarily nuclear power plant focus to a wider, more comprehensive view that includes response to all types of radiological and nuclear emergencies, including terrorism. She mentioned the publication of [NCRP Report 138](#) in 2001 and the last time NCRP devoted its annual meeting to this topic back in [2004](#). Salame-Alfie said that the Program Committee wanted this meeting to take an introspective look at the advances that have taken place in the last 15 years, focusing on several key areas of preparedness, and to ask the following questions:

- What are the remaining critical gaps in our ability to effectively respond to nuclear/radiological incidents?
- Are we doing enough to address these gaps?
- Are there areas where we have done enough and where additional work will only achieve minimal, incremental gains?
- Do we need to realign our national efforts?



John Boice

Salame-Alfie said the Program Committee hopes the outcome of the meeting will be a road map to focus our national efforts on the most pressing needs for preparing the nation for nuclear and radiological emergencies.

Boice then announced that, for the first time, NCRP will prepare and publish a commentary, based on the discussions at this annual meeting, addressing the gaps and issues identified and providing recommendations to meet those urgent preparedness needs. Boice thanked the Program Committee, chaired by Armin Ansari, CHP, PhD, and Salame-Alfie; recognized the NCRP/Radiation Research Society (RRS) scholars attending the meeting; and then introduced the 14th annual Warren K. Sinclair Keynote Speaker.

This year's keynote speaker was Jack Herrmann, the deputy director of the Office of Policy and Planning within the Office of the Assistant Secretary of Preparedness and Response at the U.S. Department of Health and Human Services (DHHS). Herrmann's presentation was titled "Aren't We Ready Yet? Closing the Planning, Response, and Recovery Gaps for Radiological Terrorism." He provided an overview and examples of the types of challenges the nation has faced in the last



Jack Herrmann (left) and John Boice

two decades and said we remain vulnerable to both natural and man-made threats. He noted that since 2000, we have had over 2,100 major disaster declarations in the United States—mainly floods, fires, and winter storms—with notable events being the 9/11 terrorist attacks followed by anthrax attacks in 2001, the 2005 Hurricane Katrina, and the 2012 Superstorm Sandy. He said the Three Mile Island, Chernobyl, and Fukushima incidents provided an impetus for increased preparedness, and the federal government has accomplished much in disaster preparedness, especially in response to nuclear detonations. He described many practical challenges and advocated a whole-community approach to preparedness planning. He said the challenges we face are not insurmountable and can be addressed by building collaborative partnerships, conducting nuclear/radiological-specific drills and exercises, advancing the science, and expanding training and education opportunities. At the conclusion of his talk, Herrmann was awarded the Sinclair Medal and a plaque.

The first session—"Are Existing Plans Sufficient for the Evolving Threat Environment?"—was chaired by Frieda Fisher-Tyler from the state of Delaware and William Irwin, CHP, ScD, from Vermont. Presenters were John Koerner (DHHS), Joseph Klinger (Illinois Emergency Management

Agency), and Irwin. At the conclusion of the session, Fisher-Tyler reiterated the recommendations from the panel:

- Integrate improvised nuclear device (IND) and radiological dispersal device (RDD) response capabilities and protective actions into existing state/local plans. Advocate for a strategic national approach.
- Leverage/transfer knowledge of IND preparedness planning through regional and national collaboration and link to existing plans for natural disasters.
- Create an integrated clinical diagnostics system to enhance surge capacity and develop a national concept of operations (CONOPs) for hematology techniques, lymphocyte depletion kinetics, dicentric assessments, novel dosimetry methods, and radiobioassay.



Frieda Fisher-Tyler



William Irwin



John Koerner



Joe Klinger

The second session—“Guidance, Training, and Exercises: Emergency Responders”—was chaired by Brooke Buddemeier, CHP (Lawrence Livermore National Laboratory) and Stephen Musolino, CHP (Brookhaven National Laboratory). The presenters were Robert Levin, MD (Ventura County Public Health, California), Chief David Pasquale (New Mexico State Emergency Response Commission), and Monica Schoch-Spana, PhD (Johns Hopkins Center for Health Security). A notable occurrence during this session was the repeated audience applause during Levin’s presentation when he shared a number of public education videos he had prepared for Ventura County residents. At the conclusion of this session, the cochairs took turns presenting the panel’s recommendations:

- Create and improve engagement mechanisms at the state and local levels to implement federal guidance and systematic preparedness processes.
- Help local preparedness leaders and champions overcome institutional, political, and social barriers associated with preparing for nuclear/radiological events.
- Recognize and be prepared to take advantage of heightened concern after real-world events to advance preparedness guidance and public information.



**Brooke
Buddemeier**



**Stephen
Musolino**



Robert Levin



David Pasquale



**Monica Schoch-
Spana**

The next session—“Guidance, Training, and Exercises: First Receivers, Public Health”—was chaired by Cullen Case (Radiation Injury Treatment Network) and Norm Coleman, MD (National Cancer Institute). The presenters included the cochairs as well as John Hick, MD (Hennepin County Health Center, Minnesota), Judith Bader, MD (DHHS), and Dan Hanfling, MD (Johns Hopkins Center for Health Security). Collectively, the speakers made the following recommendations:

- Advance preparedness for the whole country by developing “national” CONOPS including a laboratory network for hematology, chemistry, and dosimetry.

- Make response plans realistic by addressing hospital surge capacity and scarce resources at local levels.
- Use a single set of terminology, a single set of radiological units, and a centralized source of information for the medical and public-health community.



Cullen Case



Norm Coleman



John Hick



Judith Bader



Dan Hanfling

The next session—“Recovery, Resilience, and Reality: Going Beyond NCRP Report No. 175”—was chaired by Gerilee Bennett (Federal Emergency Management Agency) and Sara DeCair (U.S. Environmental Protection Agency [EPA]). The presenters included the cochairs, Jill Lipoti, PhD (Rutgers University), and Captain John Cardarelli, CHP, PhD (EPA). This panel made the following recommendations:

- Leverage all hazards—Provide guidance to help states and communities improve resilience to nuclear/radiological incidents by leveraging existing local disaster plans and risk-management efforts.
- Exercise the “Good Guidance”—Provide states and communities with user-friendly tools for exercising community management of the late-phase recovery of a nuclear/radiological incident.
- Strategize the exit—Provide tools and guidance to help states and communities plan for and test the community advisory panel and technical advisory panel concepts, which should include an exit strategy.



Gerilee Bennett



Sara DeCair



Jill Lipoti



John Cardarelli



F. Ward Whicker

The first day was concluded with the presentation of the Lauriston S. Taylor Medal by NCRP President John Boice to F. Ward Whicker, PhD. First, Boice introduced Jeffrey Whicker, CHP, PhD (Los Alamos National Laboratory, member of the NCRP) who then gave a moving introduction for his father, F. Ward Whicker (professor emeritus, Colorado State University), whose long and illustrious scientific career includes being elected distinguished emeritus member of the NCRP in 2004 after



Jeffrey Whicker

12 years of productive service to the NCRP. The 41st Lauriston S. Taylor Lecture was titled “Environmental Radiation and Life: A Broad View.” The first half of Whicker’s lecture underscored the omnipresent nature of radiation in our environment and in our lives. In the second half of his Taylor lecture, Whicker provided fascinating examples of how the science of radioecology makes practical contributions to people’s lives and the environment. A notable example is Par Pond at Savannah River, where there was concern about a possible dam failure and release of radionuclides into the environment. Ecological research included study of ¹³⁷Cs uptake by crops and estimation of



F. Ward Whicker, left, and John Boice

radiation doses to a hypothetical farmer. It turned out that cleanup costs (more than \$4 billion) were significantly higher than costs to repair the dam (\$12 million). Ultimately the dam was fixed and the reservoir filled—with vegetation, fish, and wildlife thriving and with no measurable radiation impacts. This was a win for the environment and taxpayer!

The second day began with the annual business meeting when Donald Miller, MD, chair of the Nominating Committee, presented the election results and Boice presented the president's report. A complete list of current Council members is available on the [NCRP website](#).



Jessica Wieder



Michelle Laver



Robert Ingram



David Ropeik

The next session—"Communication, Education, and Public Information"—was chaired by Jessica Wieder (EPA). The presenters were Michelle Laver (U.S. Department of Energy [DOE]), Chief Robert Ingram (City of New York Fire Department), and David Ropeik (Harvard School of Public Health). This panel made the following recommendations:

- Have the experts agree on simplified explanations of what we do know about risks of radiation exposure.
- Create tools to address first responders' safety questions and concerns and to empower them to amplify public health and safety messages for the public.
- Identify appropriate spokespeople and create tools for them to communicate early and often with evacuated individuals regarding long-term cleanup and risks related to returning home.
- Increase the number of skilled radiation communicators by identifying and training risk communication experts outside of government and, likely, outside the field of radiation protection.
- Create a single authorized source from which the public will receive all official information.



Armin Ansari

The last session—"Bringing It All Together: Conclusions and Path Forward"—was chaired by Ansari and Salame-Alfie (both from the Centers for Disease Control and Prevention). At this session, Ansari provided a brief summary of recommendations from all panel discussions, and the cochairs from each of those panels were invited to answer questions from the audience.

NCRP President Boice concluded the meeting by presenting an overview of the NCRP Program Area Committee activities and his vision for the future of NCRP.

On both days of the meeting, presentations were streamed live. In addition, courtesy of Thomas Johnson, CHP, PhD, and students from [Colorado State University](#) (CSU), the presentations were recorded and will be made available online. These students were Justin Bell (PhD) and J.C. Fischer (MS), who is also the president of the student branch of the Health Physics Society at CSU.



Justin Bell



J.C. Fisher