anticipate, recognize, evaluate, control, and confirm protection from nanomaterial- and radiation-related risks in the face of uncertainty.

WAM-B.6 UNIQUE INTERACTIONS BETWEEN NANOTECHNOLOGY AND THE PRACTICE OF HEALTH PHYSICS

Marceau-Day, M.; MD & Associates, Inc.; dday6207@att.net

Exposure to nanotechnology can often coincide with the practice of Health Physics. Requests may be formulated for permission to use radioactive nanoparticles. Nanoparticles maybe contained within a polymer such as carbon fiber. What are the consequences of mechanical or heat processes on the release of these particles? Nanoparticles can be used to reduce hysteresis in magnets, making more powerful magnets possible while nanoparticles can add strength and rigidity to accelerator components. Nanoparticles may be used in FEL - the next generation of accelerators. Nanoparticles are super-paramagnetic. Neutron spectroscopy and time of flight experiments may cause activation of non-radioactive nanoparticles. How does one dispose of these newly activated nanoparticles? Do radioactive nanoparticles constitute a new form of 'mixed waste'? Resource constraints or lack of familiarity with the specific attributes of nanomaterials suggest that expanding one's repertoire to include nanotechnology will strengthen one's position as a health physicist. From medical imaging, diagnosis and treatment, the implementation of nano-technology crosses most fields of science and materials engineering. There is also historical evidence that the self-dispersal of radioactive materials is mediated via nanoparticles. These materials travel long distances from the source, in manners that are distinctly different from even their micro-sized counterparts. The NSF has predicted more than half of all drugs will be formulated in the nanoform within 5 y. In medicine, nanoparticles can improve imaging, leading to earlier diagnosis and consequently better outcomes. Come explore how nanotechnology may influence your work place and work habits.

WAM-B.7 NANOWIRES FOR RADIATION DETECTION

Davis, J., Luo, Z., Johnson, S.; ORAU , Fayetteville State University;* jasondavisHP@gmail.com

Nanomaterials have characteristics that differ greatly from their bulk counterparts. Researchers are attempting to exploit some of these characteristics to improve radiation detection capabilities when compared to large crystals. An overview of the benefits and drawbacks of using nanoscale radiation detection materials is given, along with the potential applications of nanoscale radiation detection devices. Special attention is paid to nanowire development work being performed at the University of North Carolina - Fayetteville State, and collaborative research being undertaken by Fayetteville State and ORAU.

WAM-B.8 NANOTECHNOLOGY AND RADIATION PROTECTION: HPS NANOTECHNOLOGY COMMITTEE ACTIVITIES AND OPPORTUNITIES

Hoover, M., Marceau-Day, M., Cash, L., Davis, J., Ficklen, C., Hay, T., Holiday, S., Walker, S.; National Institute for Occupational Safety and Health, Scientist Emerita, Los Alamos National Laboratory, Oak Ridge Associated Universities, Ficklen and Associates, Washington State Department of Health, Nuclear Regulatory Commission;* mhoover1@cdc.gov

This panel discussion portion of the special technical session on Nanotechnology and Radiation Protection will provide HPS members with the opportunity to hear key updates and participate in open discussions with members of the HPS Nanotechnology Committee and with members of the audience on important emerging issues, activities, and opportunities to build and sustain leaders, cultures, and systems to advance nanotechnology for safety, health, well-being, and productivity. The format is geared to generate a lively discussion of the current topics of nanotechnology, advanced materials, and advanced manufacturing and how they impinge on the practice of Health Physics. The session supports the mission of the HPS Nanotechnology Committee to ensure our Society's role as the source of expertise in radiation safety for existing and emerging nanotechnologies by providing relevant and reliable information about radiation safety to health protection professionals, developers and users of nanomaterials and nano-enabled products, government officials, the media, and the public. Content of the session will include highlights of how the rapid development of nanotechnology is spanning a wide breadth of scientific disciplines for many technical, medical, nano-4-environmental remediation, and other applications. Opportunities where the HPS and its members can and are providing important local, national and global leadership on nanotechnology-related issues include providing input and support to HPS sections, HPS committees, and local chapters; fostering education and training programs for members and partner organizations; and collaboration with key partners such as DOE, EPA, ICRP, IAEA, NCRP, NIOSH, NIST, NRC, OSHA, and the National Nanotechnology Coordination Office. This session at the 2017 Raleigh Annual Meeting will be the committee's 9th consecutive special panel presentation.

WAM-C - Special Session: REAC/TS
Wednesday, 12 July 2017
306 BC
8:30 - 11:30 a.m.
Chair(s): Dan Blumenthal, John Crapo

WAM-C.1 RADIATION EMERGENCY ASSISTANCE CENTER/TRAINING SITE: PAST, PRESENT AND FUTURE *Dainiak, N.*, Iddins, C.; REAC/TS;* nick.dainiak@orau.org

The Radiation Emergency Assistance Center/Training Site (REAC/TS) was established in 1976 in Oak Ridge, TN. REAC/TS is a U.S. Department of Energy (DOE) emergency asset whose mission is to 1) provide 24/7 emergency response, advice and consultation; 2) education and subject matter expertise; and 3) radiation dose assessment. REAC/TS has undergone a change in senior leadership over the past year and has a new direction for the future. There will be a focus on educating and educators and broadening the reach of educational efforts. The Cytogenetics Biodosimetry Laboratory (CBL) will also become more robust by augmenting existing biodosimetry techniques, introduce additional biodosimetry techniques and research potential new biodosimetry techniques. Further, the lab is increasing the ability to network with other labs, thus giving our national response a more robust capability.

WAM-C.2 THE PSEUDO PELGER-HÜET CELL - FROM BATS TO HUMANS AND EVERYTHING IN BETWEEN *Goans, R.*, Iddins, C., Toohey, R., McComish, S., Tolmachev, S., Dainiak, N.; MJW Corporation, REAC/TS, MH Chew and Associates, USTUR;* ronald.goans@comcast.net

The Pelger-Hüet anomaly (PHA) has been recently described as a novel, semi-permanent, radiation-induced biomarker in circulating neutrophils, and it appears to be a surrogate for radiation dose to bone marrow. The PH cell, described by Pelger (1928) and Hüet (1931), is