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American Nuclear Society
Trinity Section

ZOOM MEETING ANNOUNCEMENT

https://us02web.zoom.us/j/82386913966?pwd=eVNta2J6dVhrUGppMklQWEthS1BQQT09

"Four Lightning Talks by our Members"

Background: Because of the constraints that the COVID-19 pandemic have placed on in-person gatherings, it's been too long since we've been able to get together and share both camaraderie and professional discussions—to "socialize" with each other (from students to emeritus members) and to hear about current activities and interests.

To that end, Trinity Section is hosting a "virtual dinner meeting with speakers." Of course, dinner and libations of choice are whatever you choose to provide at your individual locations, but at least we can offer some professional discussions in the form of four "lightning talks" and an opportunity for discussion.

Each of these talks is targeted for about 15 minutes, including a short Q&A opportunity. At the end, there will be a more general opportunity for member discussion.

Abstracts: please see next page.

Directions: This meeting will be hosted on Zoom. The sign-in link will be posted on the Calendar page of our web site (http://local.ans.org/trinity/calendar.html).

Date: **Friday, September 18, 2020**

Time: **7:00pm (MDT)** Speakers and discussion

Cost/Menu: Whatever you choose to provide at your individual locations.

And you don't even need to sign up from our web site or pay with PayPal.

RSVP: No need to tell us ahead of time. However, if you have ideas for speakers and topics of interest for either another lightning talk session or for an in-person dinner meeting with speaker when we're able to accommodate that in the future, please be in touch with us through:

Matt Denman: denman@kairospower.com (617-999-2848) or
Travis Trahan: travistrahan@gmail.com (505-695-5078).

"A Partial Update on Cold Fusion (LENR), demonstrating Low Energy Nuclear Reactions"

Dr. Patrick J. McDaniel,
Research Professor, Nuclear Engineering Department, UNM

Abstract: Three different experiments have been completed in recent years clearly demonstrating nuclear reactions involving very low initiating energies. Energetic charged particle tracks have been observed in plastic detectors widely used to detect alpha particles in prototypic cold fusion experiment. Cesium and strontium have been observed to transmute when placed in a low energy deuterium flux. And most recently D□D reactions have been observed in solid materials, specifically ErD_3 and TiD_2, at energies far below classically predicted thresholds.

"MCNP6® Current Efforts in Code Modernization and Capability Development"

Michael E. Rising
MCNP Team Lead, R&D Scientist, XCP-3 (Monte Carlo Codes), LANL

Abstract: His role includes defining and executing the long-term strategy of the MCNP code as well as general code development tasks such as implementing improved physics features, modernizing the software for future computer architectures, and performing extensive verification and validation testing of the code for various applications. Currently, his development efforts are targeted toward the weapons program, nuclear nonproliferation and safeguards applications, and nuclear criticality safety, including spending a portion of his time researching computational methods in the area of nuclear data sensitivity/perturbation methods.

"The Seattle Cesium Contamination Event, Some Impressions"

John L. Bliss,
Principal Health Physicist, ESHQSS-INT (Integration Program Office), LANL

Abstract: The release of Cs-137 from a sealed source being prepared for shipment on May 2, 2019, has had a profound effect on an important institution and has shown the complexity encountered when decontaminating a modern high-rise building. After a brief description of the release, some of the difficulties encountered during the initial response and the 16-month cleanup will be briefly reviewed.

"Methods for Sensitivity and Uncertainty Analysis in Nuclear Engineering Applications"

Dr. Christopher M. Perfetti,
Assistant Professor, Nuclear Engineering Department, UNM

Abstract: Sensitivity and uncertainty analysis methods have been used extensively in criticality safety and reactor physics applications for quantifying the impact of uncertainty in nuclear data, selecting relevant benchmark experiments, predicting computational biases, and guiding the adjustment of nuclear data.

Until recently, sensitivity methods have been limited to eigenvalue sensitivity analysis and criticality safety applications. This presentation will discuss newly developed Generalized Perturbation Theory (GPT) sensitivity methods, which calculate sensitivity coefficients for ratios of reaction rates rather than critical eigenvalues, enabling sensitivity and uncertainty analyses to be applied to a more diverse set of nuclear engineering applications.

This presentation will discuss continuous-energy, adjoint-weighted sensitivity analysis methods and will describe several sample applications of these methods, including upper subcritical limit estimation in criticality safety analyses, and a project to optimize Cf-252 production in Oak Ridge National Laboratory's High Flux Isotope Reactor.