



# **Detecting Radiation in Our Radioactive World**

**North American Association for Environmental Education**

**Saturday, November 17, 2007**

**Virginia Beach Convention Center – Virginia Beach, VA**

## **Workshop Agenda**

- 9:30 – 9:35**    **Welcome & Introductions**  
**Deb Thrall - Albert I Pierce Foundation**
- 9:35 – 11:15**   **Radiation Fundamentals**  
**Keith Welch - Thomas Jefferson National Accelerator Facility**
- **Basic nuclear physics**
  - **Natural and background radiation sources**
  - **Half life**
  - **Biological effects**
  - **Radiation detection**
- 11:15 – 1:45** – **Lunch and keynote speaker**
- 1:45 – 3:45**    **Beneficial Uses of Nuclear Energy**  
**Michael Stuart - Dominion Generation**
- **Nuclear Science and Technology Applications in Modern Life – Medicine, Industry, Energy, Space**
  - **Nuclear Fuel Cycle**
  - **Nuclear power**
- 3:45 – 4:15** – **Geiger counters principles and usage**
- 4:15 – 4:30**    **Evaluation & Workshop Wrap-up**

**Hosted by the Virginia Chapter of the Health Physics Society,  
Virginia Section of the American Nuclear Society, and  
the American Nuclear Society.**



# Workshop Instructors

## **Mr. Keith Welch - [welch@jlab.org](mailto:welch@jlab.org)**

Keith Welch is a Radiological Engineer at Thomas Jefferson National Accelerator Facility in Newport News, Virginia. Keith has been involved in radiation protection work for nearly 25 years, working in the Naval nuclear program, the commercial nuclear power industry, and currently in the Department of Energy's nuclear physics research program. Keith's duties have included working as a technologist, a training instructor, supervisor, and engineer.

Keith is registered by the National Registry of Radiation Protection Technologists, and is a member of the Health Physics Society. He received a bachelor's degree in Technical Management with a physics concentration from Athens State University in Athens, Alabama.

## **Mr. Michael Stuart - [michael.stuart@dom.com](mailto:michael.stuart@dom.com)**

Michael Stuart has been working in the nuclear energy field for 17 years. His experience includes 12 years in Radiological Protection as both a Health Physics and Chemistry Technician. For the last 6 years, Michael has served as a Senior Instructor for Dominion, where he teaches classes for Engineering and designs computer-based training for new nuclear employees.

In 2005, Michael was elected as the Public Information Officer for the North American Young Generation in Nuclear, an organization of more than 2000 young professionals across North America working in all fields of nuclear technology.

Michael has been instrumental in public outreach activities in support of new nuclear plants in Virginia, Illinois, and Mississippi. He has also presented papers and conducted workshops in public outreach and education at various sites across the US, and at the International Youth Nuclear Congress in Stockholm.

## **Dr. Debra Thrall – [dthrall@swcp.com](mailto:dthrall@swcp.com)**

Dr. Thrall is one of the premier experts on radiation education in the state of NM and the Southwest having written many types of curriculum which are widely used in classroom and communities. Her 17 years of experience in this field both in the formal and non-formal classroom prove her technical understanding of the field and her abilities to illustrate scientific topics for a non-technical audience.

During her University career, Deb was responsible for conducting training sessions, not only at the University level but also in the communities and schools of NM and AZ. During her partnership with the Uranium Education Outreach Program Institute for Tribal Professionals at Northern Arizona University, she co-taught workshops for the Navajo Nation.

In partnership with the Department of Chemical and Nuclear Engineering at the University of New Mexico, Dr. Thrall co-wrote a curriculum Radiation and Environmental Awareness Curriculum (REACT) for middle school teachers.

She has conducted training sessions in partnership with the American Nuclear Society and Health Physics Society at the Northern NM Community College, the National Atomic Museum, National Science Teacher's Conferences and at the International Waste Management Symposium.