Education S. Michelle Everett

**University of Tennessee**, Knoxville, TN. 426 Haywood Ave.

PhD, Materials Science and Engineering 2013 Knoxville, TN 37920

MS, Materials Science and Engineering 2009 (865) 227-1311

BS, Mathematics 1995

Recent Experience

**Spallation Neutron Source**, Oak Ridge National Lab, Oak Ridge, TN

January 2016 - present

*Scientific Associate for the Nanoscale-Ordered Materials Diffractometer (NOMAD)*

* Ensure NOMAD is ready for data collection when users arrive for their experiments. This includes sample environment and instrument control
* Schedule all user experiments, keep up communications with users concerning samples and sample environment needs, coordinate sample environment changes for shared equipment and do sample environment changes for NOMAD specific sample environment
* Establish procedures and optimize processes that allow us to take advantage of NOMAD’s high flux, which offers the opportunity to complete a large number of experiments
* Train all users and assure a safety culture is adhered to
* Manage upgrades at the instrument through coordinating support groups’ activities
* Project Lead for the NOMAD Auto Changer
* Project Lead for the ORNL vacuum furnace which will be optimized for diffraction
* Technical Lead for the NOMAD background project
* WiNS Executive committee, NXS planning committee, Diversity and Inclusion Initiative co-chair, Remote Experiment Task Force, UTK MSE Senoir Design mentor
* Scientific & Technical Advisory Panel (STAP) for Users and Samples, Chair – 4 years, European Spallation Source, Lund, Sweden

Previous Experience

**European Spallation Source**, Lund, Sweden

April 2013 – January 2016

*User Laboratory Coordinator in the Scientific Activities Division*

* Managed a project valued at 4 M€ and secured in-kind funding from contributing partner countries
* Developed safety procedures for sample handling and user lab access
* Worked with architects and conventional facilities to establish ~34,000 ft2 of scientific laboratory and technical workshop space
* Coordinated detailed designs of these spaces including power requirements, heat loads, utility placements and furniture needs
* Defined requirements for all aspects of operation of user labs including sample storage, workflow, waste flow, fire zoning, etc.
* Visited and worked closely with European neutron research facilities such as ISIS and ILL

*Interface Coordinator in the Scientific Projects Division*

* Implemented requirements engineering for newly developed neutron scattering instruments
* Communicated instrument requirements to the conventional facilities division
* Improved processes for collecting, maintaining, and communicating requirements
* Participated in studies such as floor deformation tolerances and their effect on piling schemes, heat loads and their effect on HVAC engineering, lifting requirements and development of crane solutions
* Worked with consultants (electrical engineers, crane engineers, HVAC engineers, etc.) to produce a facility that would ensure maximum flexibility to “future-proof” for needs of the neutron instruments

Funding

Mid-scale Total Scattering MICAS $85K

Publications

McCoy, S.A.E., et al., *Synthesis and structural characterization of Ca12Ga14O33*, Scientific Reports, **10**, 16311 (2020): DOI: 10.1038/s41598-020-73311-w

Drey, D., et al., *Disorder in Ho2Ti2-xZrxO7 pyrochlore to defect fluorite solid solution series*, RSC Adv., **10**, p. 34632-50 (2020): DOI: 10.1039/D0RA07118H

Cladek, B.R., et al.,*Molecular Rotational Dynamics in Mixed CH4-CO2 Hydrates: Insights from Molecular Dynamics Simulations*, Journal of Physical Chemistry C, **123**(43), p. 26251-62 (2019): DOI: 10.1021/acs.jpcc.9b06242

Kupwade-Patil, K., et al., *Retarder effect on hydrating oil well cements investigated using in situ neutron/X-ray distribution function analysis*, Cement and Concrete Research, **126**, 105920 (2019): DOI: 10.1016/j.cemconres.2019.105920

Olds, D., et al., *A high temperature gas flow environment for neutron total scattering studies of complex materials*, Review of Scientific Instruments, **89**(9)**,** 092906 (2018): DOI: 10.1063/ 1.5033464

White, C.E., et al., *A uniaxial load frame for in situ studies of stress-induced changes in cementitious materials and related systems,* Review of Scientific Instruments, **89**(9), 092903 (2018): DOI:10.1063/1.5033905

Cladek, B.R., et al., *Guest-Host Interactions in Mixed CH4/CO2 Hydrates: Insights from Molecular Dynamics Simulations*, J. Phys. Chem. C, **122**(34) p. 19575-83 (2018) DOI: 10.1021/acs. jpcc. 8b05228

Anastasopoulos, M., et al., *Multi-Grid detector for neutron spectroscopy: results obtained on time-of-flight spectrometer CNCS*, Journal of Instrumentation, **12**, P04030 (2017): DOI: 10.1088/1748-0221/12/04/P04030

Everett, S.M., et al., *Insights into the structure of mixed CO2/CH4 in gas hydrates*, American Mineralogy, **100**(5-6), p. 1203-08 (2015): DOI:10.2138/am-2015-4929

Everett, S.M., et al., *Kinetics of Methane Hydrate Decomposition Studied via in situ Low Temperature X-ray Powder Diffraction*, J. Phys Chem A, **117**(17), p. 3593-98 (2013): DOI: 10.1021/jp4020178

Moon, J.W., et al., *Large-scale production of magnetic nanoparticles using bacterial fermentation*, Journal of Industrial Microbiology & Biotechnology, **37**(10), p. 1023-31 (2010): DOI: 10.1007/s10295-010-0749-y