

Chantell L. Murphy

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Education

University of New Mexico

Ph.D., Nuclear Engineering, 2011 - 2018

This dissertation advances safeguards for pyroprocessing facilities by examining the electrochemical deposition assumptions about Pu and Cm in the electrorefiner

Georgetown University

M.S., Health Physics, 2007 – 2009

Florida State University

B.S., Physics - Health Physics, 2000 - 2005

Work Experience

Harvard Kennedy School Belfer Center for Science and International Affairs, Cambridge, MA, June 2017 – August 2017

Student Associate for the Managing the Atom Project

Los Alamos National Laboratory, Los Alamos, NM, 2010 - 2017

Graduate Research Assistant

Developed Signature Based Safeguards Approach for the electrorefiner in a pyroprocessing facility

Developed Acquisition Path Analysis methodology and software design and testing for the International Atomic Energy's State Level Approach

Forschungszentrum Jülich, Jülich, Germany, October – December, 2013

Visiting Scientist

Further developed Acquisition Path Analysis for the State Level Approach

Congressional Commission on the Strategic Posture of the United States, Washington, D.C., 2008 - 2009

Chairman Assistant

Provided organizational support to the Deterrent Force Posture Expert Working Group

Center for Strategic and International Studies, Washington, D.C., 2008

Intern

Coordinated activities for the Project on Nuclear Issues

Career Development and Training

Los Alamos National Laboratory

Monte Carlo N-Particle 6 Intermediate Workshop, 2016

Advanced Hands-On Neutron Nondestructive Assay Training Course, 2016

Vitech's Model-Based Systems Engineering with CORE 9, 2015

Next Generation Safeguards Initiative (NGSI) Advanced Gamma Ray Techniques and Measurements, 2010

NGSI Advanced Hold-Up Measurements, 2010

Monterey Institute of International Studies James Martin Center for Nonproliferation Studies

International Safeguards Policy and Information Analysis, 2011

USCD Institute on Global Conflict and Cooperation
The Public Policy and Nuclear Threats Boot Camp, 2011

Center for Strategic and International Studies
The Project on Nuclear Issues - Nuclear Scholars Initiative, 2009

**Honors and
Awards**

Non-Technical Award
LANL Student Symposium. Los Alamos, NM 2012

Student Paper Award
ANS/INMM the 9th International Conference Facility Operations-Safeguards Interface. Savannah, GA, 2012

LANL SPOT Award
Presented by Brian D. Boyer, Nonproliferation Analysis Team Leader, for supporting the development of the Nuclear Fuel Cycle and Safeguards Graduate Course for Pennsylvania State University, July 2011

Publications
peer reviewed

“Identification of Process Monitoring Parameters for Pyroprocessing within a Signature-Based Safeguards Framework”, Chantell Murphy, Philip Lafreniere, Edward Arthur, Michael Simpson, Edward Blandford. *Nuclear Technology* (2017) Under review.

“Acquisition Path Analysis Quantified—Shaping the Success of the IAEA’s State-level Concept”, Clemens Listner, Arnold Reznicek, Morton Canty, Chantell Murphy, Gotthard Stein, Irmgard Niemeyer. *Journal of Nuclear Materials Management* Vol. 43, p. 49-59, 2015

“Safeguards By Design for Research Reactors and Critical Assemblies”, Scott Demuth, Paul Pan, Brian Boyer, Chantell Murphy. *Transactions of the American Nuclear Society* Vol. 107, p. 780-3, 2012

Publications
not peer reviewed

“Electrochemistry Experiments Varying Electrorefiner Salt Concentrations for Pyroprocessing Spent Nuclear Fuel”, Chantell Murphy, Chao Zhang, Michael Simpson. (2017) In preparation

“Prioritizing Acquisition Pathways with State-specific Factors in the State-level Concept”, Chantell Murphy, Kory Budlong Sylvester, Joseph Pilat. *A Collection of Papers from the 2012 PONI Conference Series*, Washington, D.C.; Center for Strategic and International Studies, p. 95-106, Jul. 2013

“The United Arab Emirates Civil Nuclear Agreement: Promise or Problem?” Chantell L. Murphy. *A Collection of Papers from the 2009 Nuclear Scholars Initiative*, Washington, D.C.; Center for Strategic and International Studies, 2009

**Invited
Presentations**

LANL’s Model Process for the Development of the State-level Approach (SLA)
UCSD Institute on Global Conflict and Cooperation Public Policy and Nuclear Threats Boot Camp. San Diego, CA 2014

Prioritizing Acquisition Pathways in the State-level Concept
PONI 2012 Capstone Conference, U.S. Strategic Command, Offutt Air Force Base, NE, 2013

**Contributed
Presentations**

Developing a New Safeguards Approach for Pyroprocessing Facilities
29th International Summer Symposium on Science and World Affairs. July 2017, Darmstadt,
Germany

Effects of Salt Cleanup Failure Modes on the Electrorefiner in a Signature Based Safeguards (SBS)
Framework
INMM 57th Annual Meeting. July 2016, Atlanta, GA

Evolution of Safeguards - An Information Driven Approach to Acquisition Path Analysis
INMM 55th Annual Meeting. July 2014, Atlanta, GA

Random Path Selection in Acquisition Path Analysis
36th ESARDA Annual Meeting. May 2014, Luxembourg

State-Level Approach to Safeguards Next Generation Safeguards
Professional Network (NGSPN) Meeting. March 2014. Los Alamos, NM

Success Through Safety, Security, and Safeguards by Design (3SBD): From Concept to Application
Workshop
15th Annual Technical Meeting INMM Southwest Chapter. May 2013, Taos, NM

Prioritizing Acquisition Pathways in the State-Level Concept
INMM 53rd Annual Meeting. July 2012, Orlando, FL

Prioritizing Acquisition Pathways in the State Level Concept
2012 Project on Nuclear Issues (PONI) Summer Conference at LANL. June 2012, Los Alamos, NM

Acquisition Pathway Analysis in the State Level Concept
INMM Workshop on Evolving the State-Level Concept. May 2012, Charlottesville, VA

Disarmament Verification Regime
Nuclear Safeguards Policy and Technology Workshop. June 2011, Los Alamos, NM

Recovering START Institutional Knowledge
INMM 52nd Annual Meeting. July 2011, Palm Desert, CA

Next Generation Safeguards Initiative at Los Alamos National Laboratory – A Student Perspective
INMM 52nd Annual Meeting. July 2011, Palm Desert, CA

International Safeguards Recommendations for the Indian Heavy Water Reactor (AHWR)
INMM 52nd Annual Meeting. July 2011, Palm Desert, CA

Nonproliferation Assessment of the Indian AHWR-300 and the Thorium Fuel Cycle
12th Annual Technical Meeting INMM Southwest Chapter. May 2010, Taos, NM

Poster

Safeguards By Design (SBD): Safeguards Overview for Research Reactors and Critical Assemblies
PPNT Winter Conference and INMM 6th Annual Workshop on Reducing the Risk from Radioactive
and Nuclear Materials. February 2012, Washington, DC

**Professional
Organizations**

INMM University of New Mexico Student Chapter
Secretary, 2016-2017

INMM SW Chapter

Vice President, 2015-2016

Member at Large, 2013-2015

Activities

Ski and snowboard technician at Brighton Resort, Utah

Rock climber

Improvational comedy

Center for Contemporary Arts

Member of the Board of Directors, Santa Fe, NM

Santa Fe National Forest

Backcountry Wilderness Ranger, Pecos Wilderness, NM