BETHANY LYLES GOLDBLUM

2150 Shattuck Ave, Ste. 230 – University of California, Berkeley – Berkeley, CA 94704
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EDUCATION

2003 – 2007 UNIVERSITY OF CALIFORNIA, BERKELEY Berkeley, CA

Nuclear Engineering
Degree: M.Sc., December 2005
Ph.D., December 2007

Thesis: Absolute and Relative Surrogate Measurements of the ^{236}U(n,*f*) Cross Section as a Probe of Angular Momentum Effects

1997 – 2002 FORT LEWIS COLLEGE Durango, CO

B.S. Chemistry, April 2002
B.A. Mathematics, April 2002

PROFESSIONAL AND RESEARCH EXPERIENCE

2014 – PRESENT NUCLEAR SCIENCE & SECURITY CONSORTIUM (NSSC) Berkeley, CA

Executive Director, Oct 2017 – Present

Scientific Director, Jan 2015 – Oct 2017

Associate Director, Jan 2014 – Jan 2015

Provide strategic direction and oversee progress for a multi-institution initiative seated at UC Berkeley composed of eight universities and five national laboratories working collectively to train the next generation of nuclear security experts while performing research and development in support of the nation's nonproliferation mission. Served as co-PI on a successful $25M re-competition of the award in 2016.

2012 – PRESENT UNIVERSITY OF CALIFORNIA, BERKELEY Berkeley, CA

Associate Research Engineer, Jul 2016 – Present

Assistant Research Engineer, Jan 2012 – Jun 2016

Lead and manage the Bay Area Neutron Group, a research team focused on nuclear security science and nonproliferation research and development, with specialization in (i) neutron detection, (ii) scintillator characterization, (iii) applied nuclear reactions and structure physics, (iv) delayed fission radiation, and (v) post-detonation nuclear forensic science. Direct the Complexity Group, a research team combining complexity science and nuclear security to address proliferation risks. Develop policy-relevant publications on nuclear weapons issues. Research highlights include the development of new method for the measurement of light yield in organic scintillators over a broad energy range, a novel method for neutron time-of-flight spectroscopy in pulsed beams with frame overlap, and demonstration of the first quantitative heterogeneous analysis of nuclear proliferation determinants using multiplex networks.

2009 – 2013 BERKELEY NUCLEAR RESEARCH CENTER Berkeley, CA

Assistant Director

Assisted in implementing plans and goals for the Center, including supporting the organization of five Asia-Pacific Forums focused on critical sustainability issues for the nuclear fuel cycle. Worked with the director to coordinate and supervise daily operations. Undertook responsibilities for the hiring, training, supervision, and mentorship of undergraduate research assistants and research specialists.

2010 – 2011 UNIVERSITY OF TENNESSEE, KNOXVILLE Knoxville, TN

Assistant Professor in Nuclear Engineering

Supervised and guided students in graduate research in the areas of fundamental and applied nuclear physics.

2008 –2010 UNIVERSITY OF CALIFORNIA, BERKELEY Berkeley, CA

Clare Boothe Luce Chancellor's Postdoctoral Fellow

Awarded the Chancellor's Postdoctoral Fellowship honoring outstanding scholars whose research, teaching, and service contributes to diversity and equal opportunity at the University of California. Earned the Clare Boothe Luce distinction recognizing exceptional women in science, mathematics, and engineering. In this role, showcased the first use of the surrogate method in the indirect determination of neutron capture cross section data.

2008 UNIVERSITY OF CALIFORNIA, BERKELEY Berkeley, CA

Postdoctoral Scholar in Department of Nuclear Engineering

Facilitated research with the Domestic Nuclear Threat Security Initiative, a joint venture of the Department of Homeland Security and the National Science Foundation, developing novel technologies for the detection of smuggled nuclear materials. Measured the ^{230}Th(n,f) and ^{231}Th(n,f) cross sections using (^{3}He,α) and (^{3}He,^{3}He') surrogate reactions, respectively.

2008 CENTER FOR STRATEGIC & INTERNATIONAL STUDIES Washington, DC

Project on Nuclear Issues Scholar

Engaged in a six-month program with senior government officials and technical and policy experts to explore an array of nuclear weapons policy issues. Evaluated and proposed a novel mechanism to expand joint U.S.-Russia nuclear security commitments via the Global Initiative to Combat Nuclear Terrorism.

2004 – 2007 INSTITUTE ON GLOBAL CONFLICT & COOPERATION La Jolla, CA

NSF/IGERT Public Policy and Nuclear Threats Fellow

Participated in a workshop-in-residence at the University of California, San Diego exploring U.S. nuclear strategy and policy. Worked within an interdisciplinary team to survey national and global nuclear weapons policy issues, assembled a team of scholars to develop policy recommendations on nuclear forensics, and presented this work to Congressional staff members on Capitol Hill in February 2017.

SUMMER 2006 AUSTRALIAN NATIONAL UNIVERSITY Canberra, ACT

East Asia and Pacific Summer Institutes Fellow

Awarded a research appointment by the National Science Foundation and the Australian Academy of Science to conduct international research collaborations with the Department of Nuclear Physics at the Australian National University. Executed theoretical model codes to investigate fission fragment angular distributions.

SUMMER 2005 LAWRENCE LIVERMORE NATIONAL LABORATORY Livermore, CA

Technical Associate in Physics and Advanced Technologies

Developed and implemented data analysis sorting routines to explore the direct (^{7}Li,^{5}Li) two-neutron transfer reaction mechanism as a candidate surrogate reaction for cross section measurements on highly radioactive nuclei.

2002 – 2003 MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA

Technical Assistant in Department of Chemical Engineering

Demonstrated the directed patterned adsorption of magnetic beads on glass with micron precision. Synthesized a series of magnetorheological fluids, coordinated with the NASA Glenn Research Center on sample preparation for space travel, and liaised with astronauts on the International Space Station to study the fundamental behavior of these magnetic colloidal fluids under the influence of various magnetic fields in microgravity.

2001 STANFORD UNIVERSITY Palo Alto, CA

X-Ray Scattering at SLAC National Accelerator Laboratory

Synthesized a series of diblock copolymer micelles, operated an experimental station at the Stanford Synchrotron Radiation Laboratory, and measured the diffraction patterns of key molecules using small angle X-ray scattering to ascertain macromolecular parameters.

SPONSORED RESEARCH FUNDS

1/1/19 – 12/31/21	DOE/NE, Lawrence Berkeley National Laboratory (PI) *Germanium Energy Neutron Energy Spectrometer for Inelastic Scattering*	$280,103
1/1/19 – 12/31/21	DOE/NNSA, Lawrence Berkeley National Laboratory (PI) *Fast Burst Irradiations for Energy-Differential Independent Fission Product Yields*	$256,704
9/1/16 – 8/31/21	DOE/NNSA, Defense Nuclear Nonproliferation (co-PI) *Nuclear Science and Engineering Nonproliferation Research Consortium*	$25,000,000
12/9/16 – 12/8/19	DOD/DTRA, University of Nevada, Las Vegas (PI) *Evaluating the Influence of Formation Conditions on the Speciation of Uranium*	$285,259
12/1/17 – 11/30/19	DOE/NNSA, Lawrence Berkeley National Laboratory (PI) *Interdependent Networks II*	$320,000
12/1/17 – 11/30/19	DOE/NNSA, Lawrence Berkeley National Laboratory (PI) *Single Volume Scatter Camera*	$218,784
1/31/18 – 9/30/19	DOE/NNSA, Lawrence Berkeley National Laboratory (PI) *Characterization of Novel Scintillator Materials*	$144,000
12/1/17 – 9/30/19	Carnegie Corporation, Center for Strategic and International Studies (PI) *Impacts of Emerging Technologies on Strategic Awareness and Implications for Nuclear Crisis and Stability*	$59,000
1/1/18 – 12/31/18	DOE/NNSA, Lawrence Livermore National Laboratory (PI) *Neutron production and measurement feasibility studies for LLNL neutron*	$84,431
2/21/17 – 3/31/18	DOE/NNSA, Sandia National Laboratories (PI) *Interdependent Networks I*	$175,000
9/1/16 – 6/30/17	MacArthur Foundation, Federation of American Scientists (PI) *Task Force Project on Naval Nuclear Materials*	$40,000
4/27/16 – 12/31/16	DOE, Lawrence Livermore National Laboratory (PI) *Neutron Damage and Activation Testing of Neutron Imaging System Live Components*	$56,772
3/4/16 – 12/31/16	DOE/NNSA, Sandia National Laboratories (PI) *Network of Networks*	$50,000
10/27/14 – 12/31/15	Department of State V-Fund, Sandia National Laboratories (PI) *Technical Verification Careers Workshop Development and Delivery*	$40,000
7/1/14 – 9/1/15	UC Berkeley, Peder Sather Center for Advanced Study (co-PI) *Addressing Nuclear Data Needs in the Thorium Fuel Cycle*	$15,000
6/1/14 – 11/30/14	MacArthur Foundation, Federation of American Scientists (PI) *Safeguarding the Nuclear Naval Sector: An Examination of Governance Frameworks*	$4,000

2/17/14 – 7/31/14	Department of State V-Fund, Sandia National Laboratories (PI) *Workshop to Examine the Legal and Ethical Issues of Societal Verification Approaches in Arms Control*	$20,000
7/1/12 – 6/30/14	DOE/NNSA, UC Institute on Global Conflict and Cooperation (PI) *An Educational Program to Address the Role of Nuclear Forensics in Counterterrorism Policy*	$39,770

TEACHING AND MENTORSHIP

STUDENT MENTORSHIP

- Since 2009, supervised research for more than 22 undergraduates, 14 graduate students, 5 postdoctoral scholars, and 5 research specialists

COMMITTEE MEMBER FOR M.S. THESIS IN NUCLEAR ENGINEERING:

- Caroline Hughes, University of California, Berkeley, 2018
- Adriana Ureche, University of California, Berkeley, 2017
- Sarah Laderman, University of California, Berkeley, 2017
- Thomas Halverson, University of California, Berkeley, 2016
- Timothy Reed, University of Tennessee, Knoxville, 2012
- Michael Hall, University of Tennessee, Knoxville, 2011

COMMITTEE MEMBER FOR DOCTORAL QUALIFYING EXAMINATION IN NUCLEAR ENGINEERING:

- Timothy Genda, University of California, Berkeley, 2019
- Eric Matthews, University of California, Berkeley, 2019

EDUCATIONAL PROGRAMMING

PUBLIC POLICY AND NUCLEAR THREATS BOOT CAMP
Program Director, Spring 2014 – Present
Conference Chair, 2007 – 2008

- Develop the curricular design, select and recruit speakers, and set the agenda for a 10-day workshop-in-residence at the Institute on Global Conflict and Cooperation
- Oversaw and coordinated program workshops, including definition of conference scope and topical areas, securing oral presenters and panelists, and acting as conference host and emcee
- Since 2014, trained 97 advanced undergraduates, graduate students, and early- and mid-career professionals on the historical, technical, legal, and policy aspects of nuclear weapons issues

NUCLEAR SCIENCE & SECURITY CONSORTIUM
Education Focus Area Lead, 2014 – Present

- Coordinate webinars, workshops, short courses, and summer schools on nuclear security and nonproliferation science for more than 300 undergraduate and graduate students, postdoctoral scholars, faculty, and national laboratory scientists
- Co-organizer of the Keepin Nonproliferation Science Summer Program, an 8-week extended research internship at Los Alamos National Laboratory for undergraduate and graduate students in nuclear science and engineering
- Administered Minority Serving Institution (MSI) Student Research Fellowship Program, placing 17 graduate students into research positions with NSSC academic institutions and partner national laboratories

NUCLEAR POLICY WORKING GROUP (NPWG)
Founder and Director, Fall 2012 – Present

- Established an interdisciplinary research-based educational programming effort on the UC Berkeley campus that provides weekly interactive seminars and enrichment opportunities for students to conduct multidisciplinary research on a broad array of topics in nuclear security and nonproliferation policy
- Trained more than 60 undergraduate and graduate students from 20+ departments across the UC Berkeley campus with a female-male ratio of 42:58

LECTURER

- Radiation Biophysics and Dosimetry, Department of Nuclear Engineering, University of California, Berkeley, Spring 2013, 2012, 2009.
  - Teaching Effectiveness: 6.0/7.0, Department Average: 5.8/7.0 (Spring 2009)
- Radiation Biology, Department of Nuclear Engineering, University of Tennessee, Knoxville, Fall 2010.

STUDENT INSTRUCTOR

- Head Graduate Student Instructor, Nuclear Reactions and Radiation, Fall 2007
- Graduate Student Instructor, Radiation Detection and Nuclear Instrumentation Laboratory, Fall 2003
- Teaching Assistant in Introductory and Organic Chemistry Laboratories, Fall 1999 to Spring 2002

UNIVERSITY AND PROFESSIONAL SERVICE

LEADERSHIP

- **Research Director.** Project on Nuclear Gaming, University of California, Berkeley, Oct 2017 – Dec 2019.
- **Co-Organizer.** NSSC LANL Keepin Nonproliferation Science Summer Program, Los Alamos National Laboratory, Los Alamos, NM, USA, 2017, 2018, 2019.
- **Technical Coordinator.** University Program Review Meeting, Department of Energy, National Nuclear Security Administration, Office of Defense Nuclear Nonproliferation Research and Development, Walnut Creek, CA, USA, Jun. 6-8, 2017.
- **Session Chair.** Nuclear Data Needs for National Security Panel Session, American Nuclear Society Winter Meeting, Washington, DC, USA, Nov. 8-12, 2015.
- **Organizer.** NSSC LANL SNL Summer School, Los Alamos National Laboratory, Los Alamos, NM, USA, Aug. 3-12, 2015.
- **Co-Organizer**. Workshop on Legal and Ethical Issues in Societal Verification, Berkeley, CA, USA, May 6-7, 2014.
- **Organizer.** Workshop on the Application of Open Source Tools for Nuclear Nonproliferation Research, Berkeley, CA, USA, Jan. 14-15, 2014.
- **Organizer.** Nuclear Science for Future Policymakers Short Course, Berkeley, CA, USA, Jan. 13, 2014.
- **Co-Organizer.** 3rd UC Forum on the Future of Nuclear Power, Berkeley, CA, Jun. 10-12, 2009.

COMMITTEES

DEPARTMENT OF NUCLEAR ENGINEERING, UC BERKELEY Berkeley, CA

Graduate Student Admissions Committee Member, Spring 2017

Screened, evaluated, and ranked candidates for admission to graduate studies. Conducted phone and in-person interviews to assess candidates with regard to academic promise and research competence.

REFEREE/REVIEWER

Nuclear Instruments and Methods, American Association for the Advancement of Science, Radiochimica Acta, Journal of Physics: Conference Series, Journal of Nuclear Energy Science & Power Generation Technology, Alfred P. Sloan Foundation, National Nuclear Security Administration.

FELLOWSHIPS, HONORS, & AWARDS

- Project on Nuclear Issues Mid-Career Cadre (2016)
- Project on Nuclear Issues Next Generation Speakers Bureau (2015)
- American Physical Society Woman Physicist of the Month Award (2014)
- Nuclear Forensics Junior Faculty Award, Dept. of Homeland Security (2011)
- Clare Boothe Luce Chancellor's Postdoctoral Fellowship, UC Berkeley (2008)
- Amer. Assoc. of Univ. Women Selected Professions Dissertation Fellow (2007)
- Soroptimist Founder Region Fellow (2007)
- NSF East Asia and Pacific Summer Institute Grant Recipient (2006)

- Finalist in the University of California, Berkeley's Science, Technology and Engineering Policy White Paper Competition (2006)
- American Nuclear Society Graduate Scholarship Award (2005)
- Institute on Global Conflict and Cooperation National Science Foundation Fellow in Public Policy and Nuclear Threats Program (2004)
- Department of Energy Nuclear Engineering Fellow (2003)
- Phi Kappa Phi Graduate Fellow (2003)
- Student Marshal (Highest GPA) for Fort Lewis College Graduating Class (2002)
- American Institute of Chemists Senior Award (2002)
- Outstanding Graduating Senior in Mathematics (2002)
- Sigma Pi Sigma Physics Honor Society (2002)
- Sigma Xi Research Honor Society (2001)
- Women in Mathematics Award (2001)
- Alltel Academic Scholarship (2000)
- Phi Kappa Phi Academic Honor Society (2000)
- Kappa Mu Epsilon Mathematics Honor Society (1999)
- Award of Excellence Scholarship in Mathematics (1999)

SCHOLARLY CONTRIBUTIONS

REFEREED JOURNAL ARTICLES

F. Zeiser, G.M. Tveten, G. Potel, A.C. Larsen, M. Guttormsen, T.A. Laplace, S. Siem, D.L. Bleuel, B.L. Goldblum, L.A. Bernstein, F.J. Bello Garrote, L. Crespo Campo, T.K. Eriksen, A. Görgen, K. Hadynska-Klek, V.W. Ingeberg, J.E. Mitbø, E. Sahin, T. Tornyi, A. Voinov, M. Wiedeking, and J. Wilson, "Restricted spin-range correction in the Oslo Method: The example of nuclear level and γ-ray strength function from (d,pγ)^{240}Pu," Phys. Rev. C **100**, 024305 (2019).

B.L. Goldblum, A.W. Reddie, T.C. Hickey, J.E. Bevins, S. Laderman, N. Mahowald, A.P. Wright, E. Katzenson, and Y. Mubarak, "The nuclear network: multiplex network analysis for interconnected systems," Applied Network Science **4**, 36 (2019).

A.M. Hurst, A. Sweet, B.L. Goldblum, R.B. Firestone, M.S. Basunia, L.A. Bernstein, Zs. Révay, L. Szentmiklósi, T. Belgya, J.E. Escher, I. Harsányi, M. Krtička, B.W. Sleaford and J. Vujic, "Radiative-capture cross sections for the ^{139}La(n, γ) reaction using thermal neutrons and structural properties of ^{140}La," Phys. Rev. C, **99**, 024310 (2019).

J.E. Bevins, Z. Sweger, N. Munshi, B.L. Goldblum, J.A. Brown, D.L. Bleuel, and R.N. Slaybaugh, "Performance Evaluation of an Energy Tuning Assembly for Neutron Spectral Shaping," Nucl. Instrum. Meth. A **923**, 79-87 (2019).

A.W. Reddie, B.L. Goldblum, K. Lakkaraju, J. Reinhardt, M. Nacht and L. Epifanovskaya, "Next-generation wargames," Science **362**, 6421, 1362-1364 (2018).

T.A. Laplace, B.L. Goldblum, J.A. Brown, D.L. Bleuel, C.A. Brand, G. Gabella, T. Jordan, C. Moore, N. Munshi, Z.W. Sweger, A. Ureche and E. Brubaker, "Low Energy Light Yield of Fast Plastic Scintillators," Nucl. Instrum. Meth. A (2018).

J.E. Bevins, S. Laderman, B.L. Goldblum, E. Katzenson, J. Kendrick, R. Krentz-Wee and Y. Tian, "A Framework for Assessing Alternate Proliferation Pathways in the Age of Non-State Actors," The Nonproliferation Review, **25**, 1/2 (2018).

M.K. Covo, R.A. Albright, B.F. Ninemire, M.B. Johnson, A. Hodgkinson, T. Loew, J.Y. Benitez, D.S. Todd, D.Z. Xie, T. Perry, L. Phair, L.A. Bernstein, J. Bevins, J.A. Brown, B.L. Goldblum, M. Harasty, K.P. Harrig, T.A. Laplace, E.F. Matthews, A. Bushmaker, D. Walker, V. Oklejas, A.R. Hopkins, D.L. Bleuel, J. Chen and S.B. Cronin, "The 88-Inch Cyclotron: A One-stop Facility for Electronics Radiation and Detector Testing," Measurement **127**, 580 (2018).

J.A. Brown, B.L. Goldblum, T.A. Laplace, K.P. Harrig, L.A. Bernstein, D.L. Bleuel, W. Younes, D. Reyna, E. Brubaker, and P. Marleau, "Proton Light Yield in Organic Scintillators using a Double Time-of-Flight Technique," J. Appl. Phys. **124**, 045101

(2018).

A.W. Reddie and B.L. Goldblum, "All Hands on Deck: Advancing Safeguards for Naval Nuclear Materials," The Nonproliferation Review, **25**, 1-16 (2018).

E.F. Matthews, B.L. Goldblum, L.A. Bernstein, B.J. Quiter, J.A. Brown, W. Younes, J.T. Burke, S.W. Padgett, J.J. Ressler, and A.P. Tonchev, "FIER: Software for analytical modeling of delayed gamma-ray spectra," Nucl. Instrum. Meth. A, **891**, 111 (2018).

K.P. Harrig, B.L. Goldblum, J.A. Brown, D.L. Bleuel, L.A. Bernstein, J. Bevins, M. Harasty, T.A. Laplace, and E.F. Matthews, "Neutron Spectroscopy for Pulsed Beams with Frame Overlap using a Double Time-of-Flight Technique," Nucl. Instrum. Meth. A, **877**, 359 (2018).

A.M. Hurst, R.B. Firestone, B.W. Sleaford, D.L. Bleuel, M.S. Basunia, F. Bečvář, T. Belgya, L.A. Bernstein, J.J. Carroll, B. Detwiler, J.E. Escher, C. Genreith, B.L. Goldblum, M. Krtička, A.G. Lerch, D.A. Matters, J.W. McClory, S.R. McHale, Zs. Révay, L. Szentmiklósi, D. Turkoglu, A. Ureche, and J. Vujic, "Developments in capture-γ libraries for nonproliferation applications," EPJ Web Conf., **146**, 09008 (2017).

M. Wiedeking, L.A. Bernstein, D.L. Bleuel, C.P. Brits, K. Sowazi, A. Görgen, B.L. Goldblum, M. Guttormsen, B.V. Kheswa, A.C. Larsen, S.N.T. Majola, K.L. Malatji, D. Negi, T. Nogwanya, S. Siem, and B.R. Zikhali, "Statistical gamma-ray decay studies at iThemba LABS," EPJ Web. Conf., **146**, 05006 (2017).

B.H. Daub, D.L. Bleuel, M. Wiedeking, L.A. Bernstein, N.M. Brickner, J.A. Brown, B.L. Goldblum, K.S. Holliday, J. Lundgren, and K. Moody, "Neutron transfer in the ^{13}C + ^{197}Au reaction from gold isotope residuals," Phys. Rev. C **95**, 024602 (2017).

B.V. Kheswa, M. Wiedeking, J.A. Brown, A.C. Larsen, S. Goriely, M. Guttormsen, F.L. Bello Garrote, L.A. Bernstein, D.L. Bleuel, T.K. Eriksen, F. Giacoppo, A. Görgen, B.L. Goldblum, T.W. Hagen, P.E. Koehler, M. Klintefjord, K.L. Malatji, J.E. Midtbø, H.T. Nyhus, P. Papka, T. Renstrøm, S.J. Rose, E. Sahin, S. Siem, and T.G. Tornyi, "$^{137,138,139}La(n,\gamma)$ cross sections constrained with statistical decay properties of $^{138,139,140}La$ nuclei," Phys. Rev. C **95**, 045805 (2017).

C.L. Stork, C.C. Ummel, D.S. Stuart, S. Bodily, and B.L. Goldblum, "Dynamic Analysis Environment for Nuclear Forensic Analyses," Computer Physics Communications **210**, 60 (2017).

A. Ratkiewicz, L. Berzak Hopkins, D.L. Bleuel, L.A. Bernstein, K. van Bibber, W.S. Cassata, B.L. Goldblum, S. Siem, C.A. Velsko, M. Wiedeking, and C.B. Yeamans, "A recoverable gas-cell diagnostic for the National Ignition Facility," Rev. Sci. Instrum. **87**, 11D825 (2016).

D.L Bleuel, L.A. Bernstein, C.A. Brand, W.S. Cassata, B.H. Daub, L.S. Dauffy, B.L. Goldblum, J.M. Hall, C.A. Hagmann, L.B. Hopkins, H.Y. Khater, A.L. Kritcher, D.H.G. Schneider, S. Siem, C.A. Velsko, and M. Wiedeking, "Method for Detection of Nuclear-Plasma Interactions in a ^{134}Xe-Doped Exploding Pusher at the National Ignition Facility," J. Plasma Fusion Res. **11**, 3401075 (2016).

M. Wiedeking, M. Krtička, L.A. Bernstein, J.M. Allmond, M.S. Basunia, D.L. Bleuel, J.T. Burke, B.H. Daub, P. Fallon, R.B. Firestone, B.L. Goldblum, R. Hatarik, P.T. Lake, A.C. Larsen, I-Y. Lee, S. R. Lesher, S. Paschalis, M. Petri, L. Phair, N.D. Scielzo, and A. Volya, "Gamma-ray decay from neutron-bound and unbound states in ^{95}Mo and a novel technique for spin determination," Phys. Rev. C **93**, 024303 (2016).

T.A. Laplace, F. Zeiser, M. Guttormsen, A.C. Larsen, D.L. Bleuel, L.A. Bernstein, B.L. Goldblum, S. Siem, F.L. Bello Garotte, J.A. Brown, L. Crespo Campo, T.K. Eriksen, F. Giacoppo, A. Görgen, K. Hadyńska-Klęk, R.A. Henderson, M. Klintefjord, M. Lebois, T. Renstrøm, S.J. Rose, E. Sahin, T.G. Tornyi, G.M. Tveten, A. Voinov, M. Wiedeking, J.N. Wilson, and W. Younes, "Statistical properties of ^{243}Pu and $^{242}Pu(n,\gamma)$ cross section calculation," Phys. Rev. C **93**, 014323 (2016).

N. Egel, B.L. Goldblum, and E. Suzuki, "A Novel Framework for Safeguarding Naval Nuclear Material," The Nonproliferation Review **22**, 239 (2015).

L.A. Bernstein, D.L. Bleuel, J.A. Caggiano, C. Cerjan, R.J. Fortner, J. Gostic, P.M. Grant, N. Gharibyan, C. Hagmann, R. Hatarik, E.A. Henry, D. Sayre, D.H.G. Schneider, W. Stoeffl, D.A Shaughnessy, D.P. McNabb, C.B. Yeamans, N.P. Zaitseva, J.A. Brown, B.H. Daub, N.M. Brickner, P.F. Davis, B.L. Goldblum, K. van Bibber, J. Vujic, M.S. Basunia, R.B. Firestone, A.M. Hurst, and A.M. Rogers, "Low Energy Neutron Measurements in High Energy Density Plasmas Using the National Ignition Facility," J. Plasma Fusion Res. **9**, 4404101 (2014).

J.A. Brown, B.L. Goldblum, L.A. Bernstein, D.L. Bleuel, N.M. Brickner, J.A. Caggiano, B.H. Daub, G.S. Kaufman, R. Hatarik, T.W. Phillips, S.A. Wender, K. van Bibber, J. Vujic, and N.P. Zaitseva, "Relative light yield and temporal response of a stilbene-doped bibenzyl organic scintillator for neutron detection," J. Appl. Phys. **115**, 193504 (2014).

B.J. Quiter, T. Laplace, B.A. Ludewigt, S.D. Ambers, B.L. Goldblum, S. Korbly, C. Hicks, and C. Wilson, "Nuclear resonance fluorescence in ^{240}Pu," Phys. Rev. C **86**, 034307 (2012).

N.D. Scielzo, J.E. Escher, J.M. Allmond, M.S. Basunia, C.W. Beausang, L.A. Bernstein, D.L. Bleuel, J.T. Burke, R.M. Clark, F.S. Dietrich, P. Fallon, J. Gibelin, B.L. Goldblum, S.R. Lesher, A.O. Macchiavelli, M.A. McMahan, E.B. Norman, L. Phair, E. Rodriquez-Vieitez, S.A. Sheets, I.J. Thompson, and M. Wiedeking, "Statistical γ rays in the analysis of surrogate nuclear reactions," Phys. Rev. C **85**, 054619 (2012).

B.L. Goldblum, M. Wiedeking, T. Reed, K. Alfonso, J.M. Allmond, L.A. Bernstein, D.L. Bleuel, F.S. Dietrich, R. Hatarik, P.T. Lake, I.-Y. Lee, S.R. Lesher, S. Paschalis, M. Petri, L. Phair, N.D. Scielzo, R. Vial, and J. Vujic, "Indirect determination of neutron capture cross sections on spherical and near-spherical nuclei using the surrogate method," Phys. Rev. C **85**, 054616 (2012).

M. Wiedeking, L.A. Bernstein, M. Krticka, D.L. Bleuel, J.M. Allmond, M.S. Basunia, J.T. Burke, P. Fallon, R.B. Firestone, B.L. Goldblum, R. Hatarik, P.T. Lake, I-Y. Lee, S.R. Lesher, S. Paschalis, M. Petri, L. Phair, and N.D. Scielzo, "Low-Energy Enhancement in the Photon Strength of ^{95}Mo," Phys. Rev. Lett. **108**, 162503 (2012).

J. Gibelin, M. Wiedeking, L. Phair, P. Fallon, S. Basunia, L.A. Bernstein, J.T. Burke, D.L. Bleuel, R.M. Clark, M. Cromaz, M.-A. Deleplanque, B.F. Goldblum, S. Gros, H.B. Jeppesen, P.T. Lake, I.-Y. Lee, S.R. Lesher, A.O. Macchiavelli, M.A. McMahan, J. Pavan, E. Rodriguez-Vieitez, N.D. Scielzo, and L.G. Moretto, "Channel selection of neutron-rich nuclei following fusion-evaporation reactions of light systems," Nucl. Instrum. Meth. A **648**, 109 (2011).

D.H. Chivers, K. Alfonso, B.L. Goldblum, and B. Ludewigt, "Novel methodology for the quantitative assay of fissile materials using temporal and spectral β-delayed γ-ray signatures," Nucl. Instr. Meth. B **269**, 1829 (2011).

J.J. Ressler, J.T. Burke, J.E. Escher, C.T. Angell, M.S Basunia, C.W. Beausang, L.A. Bernstein, D.L. Bleuel, R.J. Casperson, B.L Goldblum, J. Gostic, R. Hatarik, R. Henderson, R.O Hughes, J. Munson, L.W. Phair, T.J. Ross, N.D. Scielzo, E. Swanberg, I.J Thompson, and M. Wiedeking, "Surrogate measurement of the ^{238}Pu(n,*f*) cross section," Phys. Rev. C **83**, 054610 (2011).

N.D. Scielzo, J.E. Escher, J.M. Allmond, M.S. Basunia, C.W. Beausang, L.A. Bernstein, D.L. Bleuel, J.T. Burke, R.M. Clark, F.S. Dietrich, P. Fallon, J. Gibelin, B.L. Goldblum, S.R. Lesher, A.O. Macchiavelli, M.A. McMahan, E.B. Norman, L. Phair, E. Rodriquez-Vieitez, S.A. Sheets, I.J. Thompson, and M. Wiedeking, "Measurement of γ-emission branching ratios for ^{154,156,158}Gd compound nuclei: Tests of surrogate nuclear reaction approximations for (n,γ) cross sections," Phys. Rev. C **81**, 034608 (2010).

B.L. Goldblum, S.G. Prussin, L.A. Bernstein, W. Younes, M. Guttormsen, and H.T. Nyhus, "Surrogate ratio methodology for the indirect determination of neutron capture cross sections," Phys. Rev. C **81**, 054606 (2010).

R. Hatarik, L.A. Bernstein, J.A. Cizewski, D.L. Bleuel, J.T. Burke, J. Gibelin, B.L. Goldblum, A.M. Hatarik, S.R. Lesher, P.D. O'Malley, L. Phair, E. Rodriguez-Vieitez, and T. Swan, "Benchmarking a surrogate reaction for neutron capture," Phys. Rev. C **81**, 011602(R) (2010).

B.L. Goldblum, S.R. Stroberg, J.M. Allmond, C. Angell, L.A. Bernstein, D.L. Bleuel, J.T. Burke, J. Gibelin, L. Phair, N.D. Scielzo, E. Swanberg, M. Wiedeking, and E.B. Norman, "Indirect Determination of the ^{230}Th(n,*f*) and ^{231}Th(n,*f*) Cross Sections for Thorium-Based Nuclear Energy Systems," Phys. Rev. C **80**, 044610 (2009).

P.C. Bender, C.R. Hoffman, M. Wiedeking, J.M. Allmond, L.A. Bernstein, J.T. Burke, D.L. Bleuel, R.M. Clark, P. Fallon, B.L. Goldblum, T.A. Hinners, H.B. Jeppeson, S. Lee, I.-Y. Lee, S.R. Lesher, A.O. Macchiavelli, M.A. McMahan, D. Morris, M. Perry, L. Phair, N.D. Scielzo, S.L. Tabor, V. Tripthi, and A. Volya, "Approaching the island of inversion: ^{34}P," Phys. Rev. C **80**, 014302 (2009).

M.S. Basunia, R.M. Clark, B.L. Goldblum, L.A. Bernstein, L. Phair, J.T. Burke, C.W. Beausang, D.L. Bleuel, B. Darakchieva, F.S. Dietrich, M. Evtimova, P. Fallon, J. Gibelin, R. Hatarik, C.C. Jewett, S.R. Lesher, M.A. McMahan, E. Rodriguez-Vieitez, and M. Wiedeking, "The (^{3}He,t*f*) as a surrogate reaction to determine (n,*f*) cross sections in the 10 to 20 MeV energy range," Nucl. Instrum. Methods B **267**, 1899 (2009).

S.R. Lesher, J.T. Burke, L.A. Bernstein, H. Ai, C.W. Beausang, D.L. Bleuel, R.M. Clark, F.S. Dietrich, J.E. Escher, P. Fallon, J. Gibelin, B.L. Goldblum, I.Y. Lee, A.O. Macchiavelli, M.A. McMahan, K.J. Moody, E.B. Norman, L. Phair, E. Rodriguez-Vieitez, N.D. Scielzo, and M. Wiedeking, "Surrogate ratio method in the actinide region using the (α,α'*f*) reaction," Phys. Rev. C **79**, 044609 (2009).

J.M. Allmond, L.A. Bernstein, C.W. Beausang, L. Phair, D.L. Bleuel, J.T. Burke, J.E. Escher, K.E. Evans, B.L. Goldblum, R. Hatarik, H.B. Jeppesen, S.R. Lesher, M.A. McMahan, J.O. Rasmussen, N.D. Scielzo, and M. Wiedeking, "Relative ^{235}U(n,γ) and (n,f) cross sections from ^{235}U(d,pγ) and (d,p*f*)," Phys. Rev. C **79**, 054610 (2009).

B.L. Goldblum, S.G. Prussin, U. Agvaanluvsan, L.A. Bernstein, D.L. Bleuel, W. Younes, and M. Guttormsen, "Determination of (n,γ) cross sections in the rare-earth region using the surrogate ratio method," Phys. Rev. C **78**, 064606 (2008).

M. Wiedeking, P. Fallon, A.O. Macchiavelli, L.A. Bernstein, J. Gibelin, J.T. Burke, D.L. Bleuel, R.M. Clark, M.-A. Deleplanque, S. Gros, R. Hatarik, H.B. Jeppesen, I.-Y. Lee, B.F. Lyles, M.A. McMahan, L.G. Moretto, J. Pavan, E. Rodriguez-Vieitez, and A. Volya, "Nuclear structure of ^{18}N and the neighboring N=11 isotones," Phys. Rev. C **77**, 054305 (2008).

M. Wiedeking, P. Fallon, A.O. Macchiavelli, J. Gibelin, M.S. Basunia, R.M. Clark, M. Cromaz, M.-A. Deleplanque, S. Gros, H.B. Jeppesen, P.T. Lake, I.-Y. Lee, L.G. Moretto, J. Pavan, L. Phair, E. Rodriguez-Vieitez, L.A. Bernstein, D.L. Bleuel, J.T. Burke, S.R. Lesher, B.F. Lyles, and N.D. Scielzo, "Lifetime Measurement of the First Excited 2+ State in ^{16}C," Phys. Rev. Lett. **100**, 152501 (2008).

L. Kim, B.F. Lyles, and J. Fahlen, "A Return to Atoms for Peace: Provision of an Experimental Compact Liquid Metal Fast Reactor to North Korea," J. Nucl. Mater. Management, **XXXVI**, 35 (2008).

J. Sun, B.F. Lyles, K. Yu, J. Weddell, J. Pople, M. Hetzer, D. Kee, and P. Russo, "Diffusion of Dextran Probes in a Self-assembled Fibrous Gel Composed of Two-Dimensional Arborols, " J. Phys. Chem. B, **112**, 29 (2008).

B.F. Lyles, LA. Bernstein, J.T. Burke, F.S. Dietrich, J. Escher, I. Thompson, D.L. Bleuel, R.M. Clark, P. Fallon, J. Gibelin, A.O. Macchiavelli, M.A. McMahan, L. Phair, E.

Rodriguez-Vieitez, M. Wiedeking, C.W. Beausang, S.R. Lesher, B. Darakchieva, and M. Evtimova. "Absolute and relative surrogate measurements of the ^{236}U(n,*f*) cross section as a probe of angular momentum effects," Phys. Rev. C **76**, 014606 (2007).

B.F. Lyles, M.S. Terrot, P.T. Hammond, and A.P. Gast, "Directed patterned adsorption of magnetic beads on polyelectrolyte multilayers on glass," Langmuir **20**, 3028 (2004).

POPULAR PAPERS

B.L. Goldblum, A.W. Reddie, J. Reinhardt, "Wargames as experiments: The Project on Nuclear Gaming's SIGNAL Framework," Bulletin of the Atomic Scientists, May 29, 2019.

A.W. Reddie, B.L. Goldblum, K. Lakkaraju, J. Reinhardt, M. Nacht and L. Epifanovskaya, "Applying wargames to real-world policies—Response," Science **363**, 6434, 1406-1407 (2019).

A.W. Reddie and B.L. Goldblum, "Why the security of nuclear materials should be focus of US-Russia nuclear relations," Bulletin of the Atomic Scientists, Nov 13, 2018.

C.D. Ferguson, B.L. Goldblum, A. Haghighat, P. Ingram, A.J. Kuperman, C. Leidig, B. Petrovic, and N. Ritchie, "Naval Nuclear Propulsion: Assessing Benefits and Risks" Independent Task Force Report, Federation of American Scientists, (2015).

A.B. Korbatov, E. Suzuki, and B. Goldblum, "The fight against nuclear terrorism needs global cooperation – and the IAEA," Bulletin of the Atomic Scientists, Sept/Oct (2015).

E. Suzuki, B. Goldblum, and J. Vujic, "Building a Foundation for the Future of Nuclear Security," Federation of American Scientists Public Interest Report **66** (2013).

D.H. Chivers, B.F. Lyles Goldblum, B.H. Isselhardt, and J.S. Snider, "Before the Day After: Using Pre-Detonation Nuclear Forensics to Improve Fissile Material Security," Arms Control Today, July/August (2008).

BOOK CHAPTERS

E. Suzuki, B. Goldblum, R. Brown, S. Prussin, and M. Nacht, "Next Generation Nuclear Security Policy: Education, Research, and Experience," in *Nuclear Threats and Security Challenges*, edited by S. Apikyan and D. Diamond (Springer, 2015) Ch. 6, pp. 59-69.

M. Wiedeking, L. A. Bernstein, D. L. Bleuel, J. T. Burke, R. Hatarik, S. R. Lesher, N. D. Scielzo, M. Krtička, J. M. Allmond, M. S. Basunia, P. Fallon, R. B. Firestone, B. L. Goldblum, P. T. Lake, I-Y. Lee, S. Paschalis, M. Petri, and L. Phair, in *Exotic Nuclei*, (World Scientific, 2015) Ch. 40, pp. 375-385.

J. Sun, K.H. Yu, P.S. Russo, J. Pople, A. Henry, B. Lyles, R.S. McCarley, G.R. Baker, and G.R. Newkome, in *Polymeric Nanofibers*, edited by Darrell Reneker and Hao Fong, American Chemical Society, ACS Symposium Series #918 (Oxford University Press, New York, 2006) Ch. 26.

CONFERENCE PROCEEDINGS

C.L. Stewart, B.L. Goldblum, Yi-Ting Alicia Tsai, S. Chockkalingam, S. Padhy, and A. Wright, "Multimodal Data Analytics for Nuclear Facility Monitoring," in *Proceedings of the Institute of Nuclear Materials Management 60th Annual Meeting, Palm Desert, 2019*, (Institute of Nuclear Materials Management, 2019).

E. Matthews, B.L. Goldblum, L. Bernstein, and M. Shinner, "Improvements to Nuclear Data Using Delayed Gamma Ray Modeling with FIER," in *Proceedings of the Institute of Nuclear Materials Management 59th Annual Meeting, Baltimore, 2018*, (Institute of Nuclear Materials Management, 2018).

C. Verschuren, R. Bahran, B.L. Goldblum, J.C. Miller, and C. Carr, "The G. Robert Keepin Nonproliferation Science Summer Program at Los Alamos National Laboratory," in *Proceedings of the Institute of Nuclear Materials Management 59th Annual Meeting, Baltimore, 2018*, (Institute of Nuclear Materials Management, 2018).

J.E. Bevins, B.L. Goldblum, T. Hickey, E. Katzenson, J. Kendrick, R. Krentz-Wee, S. Laderman, Y. Tian, C. Ting, and A.J. Wehsener, "Alternate Nuclear Proliferation Pathways in the Age of Non-State Actors," in *Proceedings of the Advances in Nuclear Nonproliferation Technology and Policy Conference, Santa Fe, 2016*,

(American Nuclear Society, 2016) No. 18782.

J. Kornell, Z.N. Gastelum, B.L. Goldblum, "Informational Sensing for Nonproliferation," in *Proceedings of the Advances in Nuclear Nonproliferation Technology and Policy Conference, Santa Fe, 2016*, (American Nuclear Society, 2016) No. 18849.

N. Mahowald, B.L. Goldblum, T. Hickey, J. Kornell, "Quantifying Correlations between International Relations and Nuclear Proliferation Status," in *Proceedings of the Advances in Nuclear Nonproliferation Technology and Policy Conference, Santa Fe, 2016*, (American Nuclear Society, 2016) No. 18857.

S. Kisyov, F. Negoita, M.M. Gugiu, D.P. Higginson, L. Vassura, M. Borghesi, L. Bernstein, D.L. Bleuel, F. Gobet, B.L. Goldblum, A. Green, F. Hannachi, S. Kar, H. Petrascu, D. Pietreanu, L. Quentin, A.-M. Schroer, M. Tarisien, M. Versteegen, O. Willi, P. Antici, and J. Fuchs, "Time of Flight Measurements for Neutrons Produced in Reactions Driven by Laser-Target Interactions at Petawatt level," in *Physics Procedia*, proceedings of the International Conference on Laser Applications at Accelerators, LA^{3}NET 2015, Mallorca, Spain, **77**, 29 (2015).

A.C. Larsen, M. Guttormsen, F.L. Bello Garrotte, L.A. Bernstein, D.L. Bleuel, A. Bracco, B.A. Brown, F. Camera, L. Crespo Campo, S. Frauendorf, B.L. Goldblum, S. Goriely, A. Görgen, K. Hadynska-Klek, T.W. Hagen, S. Harissopulos, B.V. Kheswa, M. Klintefjord, S. Leoni, S.N. Liddick, F. Naqvi, G. Perdikakis, T. Renstrøm, A.M. Rogers, S. J. Rose, E. Sahin, R. Schwengner, S. Siem, A. Simon, A. Spyrou, G.M. Tveten, A. Voinov, M. Wiedeking, and H. Utsunomiya, "Enhanced low-energy γ-decay probability – Implications for r-process (n, γ) reaction rates," in *Proceedings of the 14th International Conference on Nuclear Reaction Mechanisms, Varenna (Italy), 2015,* edited by F. Cerutti, M. Chadwick, A. Ferrari, T. Kawano, and P. Schoofs, CERN-Proceedings-2015-001 (CERN, Geneva, 2015), pp. 261-266.

D.J. Sweeney, T.C. Hickey, M.E. Katzenson, B.L. Goldblum, and J. Kornell, "Network Science Analysis for Nonproliferation Likelihood," in *Proceedings of the Institute of Nuclear Materials Management 56th Annual Meeting, Indian Wells, 2015*, (Institute of Nuclear Materials Management, Oakbrook Terrace, 2015).

M. Wiedeking, L.A. Bernstein, J.M. Allmond, M.S. Basunia, D.L. Bleuel, J.T. Burke, P. Fallon, R.B. Firestone, B.L. Goldblum, R. Hatarik, M. Krtička P.T. Lake, A.C. Larsen, I-Y. Lee, S.R. Lesher, S. Paschalis, M. Petri, L. Phair, and N.D. Scielzo, "Photon Strength Function at Low Energies in ^{95}Mo," Nucl. Data Sheets, **119**, 258 (2014).

M. Wiedeking, L.A. Bernstein, M. Krtička, D.L. Bleuel, J.M. Allmond, M.S. Basunia, J.T. Burke, P. Fallon, R.B. Firestone, B.L. Goldblum, R. Hatarik, P.T. Lake, I-Y. Lee, S. R. Lesher, S. Paschalis, M. Petri, L. Phair, and N.D. Scielzo, "Photon strength and the low-energy enhancement," AIP Conf. Proc., **1609**, 161 (2014).

B.L. Goldblum and J. Vujic, "Nuclear Science and Security Consortium: Training the Next Generation," in *Proceedings of the Institute of Nuclear Materials Management 55th Annual Meeting, Atlanta, 2014*, (Institute of Nuclear Materials Management, Deerfield, 2014).

E. Suzuki, B.L. Goldblum, M. Nacht, S. Prussin, R. L. Brown, and J. Vujic, "Nuclear Security Science and Policy: Connecting Students to Scientists," in *Proceedings of the Institute of Nuclear Materials Management 55th Annual Meeting, Atlanta, 2014*, (Institute of Nuclear Materials Management, Deerfield, 2014).

J.T. Burke, J.J. Ressler, J.E. Escher, N.D. Scielzo, I.J. Thompson, R. Henderson, J. Gostic, O. Roig, L.W. Phair, R. Hatarik, J. Munson, C. Angell, B. Goldblum, C.W. Beausang, T. Ross, R. Hughes, M. Aiche, G. Barreau, N. Cappelan, S. Czajkowski, B. Haas, B. Jurado, L. Mathieu, and I. Companis, "Experimental Approaches to Studying the Fission Process Using the Surrogate Reaction Technique," J. Korean

Phys. Soc. **59**, 1892 (2011).

B.L. Goldblum, "U.S.-India Collaboration in the Global Nuclear Energy Renaissance," in *Proceedings of the China-India-US Workshop on Science, Technology and Innovation Workshop, Bangalore, India, 2008*, edited by William Blanpied (National Institute of Advanced Studies, 2008), p. 419.

M.S. Basunia, R.M. Clark, L.A. Bernstein, B.F. Lyles, J.T. Burke, C.W. Beausang, D.L. Bleuel, B. Darakchieva, F.S. Dietrich, M. Evtimova, P. Fallon, J. Gibelin, S.R. Lesher, M.A. McMahan, L. Phair, E. Rodriguez-Vieitez, and M. Wiedeking, "Study of the (^{3}He,t) Charge Transfer Reaction as a Surrogate for Neutron Energy Between 10 to 20 MeV," in *Proceedings of the 2007 International Workshop on Compound-Nuclear Reactions and Related Topics, Fish Camp, California, 2007* (AIP Conf. Proc., 2008), p. 101.

J.T. Burke, L.A. Bernstein, N.D. Scielzo, D.L. Bleuel, S.R. Lesher, J. Escher, L. Ahle, F.S. Dietrich, R.D. Hoffman, E.B. Norman, S.A. Sheets, L. Phair, P. Fallon, R.M. Clark, J. Gibelin, C. Jewett, I.Y. Lee, A.O. Macchiavelli, M.A. McMahan, L.G. Moretto, E. Rodriguez-Vieitez, M. Wiedeking, B.F. Lyles, C.W. Beausang, J.M. Allmond, H. Ai, J.A. Cizewski, R. Hatarik, P. D. O'Malley, and T. Swan, "Surrogate reactions in the actinide region," in *Proceedings of the 2007 International Workshop on Compound-Nuclear Reactions and Related Topics, Fish Camp, California, 2007* (AIP Conf. Proc., 2008), p. 96.

J. Gibelin, L. Phair, M. Wiedeking, L.A. Bernstein, J.T. Burke, D.L. Bleuel, R.M. Clark, M. Cromaz, M.-A. Deleplanque, P. Fallon, R. Hatarik, P.T. Lake, I.-Y. Lee, S.R. Lesher, B.F. Lyles, A.O. Macchiavelli, M.A. McMahan, E. Rodriguez-Vieitez, and L.G. Moretto, "Fusion-evaporation reactions: a tool for gamma-ray spectroscopy on light nuclei," in *Proceedings of the 2007 International Workshop on Compound-Nuclear Reactions and Related Topics, Fish Camp, California, 2007* (AIP Conf. Proc., 2008), p. 77.

S.R. Lesher, L.A. Bernstein, H. Ai, C.W. Beausang, D. Bleuel, J.T. Burke, R.M. Clark, P. Fallon, J. Gibelin, I.Y. Lee, B.F. Lyles, A.O. Macchiavelli, M.A. McMahan, K.J. Moody, E.B. Norman, L. Phair, E. Rodriguez-Vieitez, and M. Wiedeking, "Benchmarking the External Surrogate Ratio Method using the (α,α'*f*) reaction at STARS," in *Proceedings of the 2007 International Workshop on Compound-Nuclear Reactions and Related Topics, Fish Camp, California, 2007* (AIP Conf. Proc., 2008), p. 113.

N.D. Scielzo, L.A. Bernstein, D.L. Bleuel, J.T. Burke, S.R. Lesher, E.B. Norman, S.A. Sheets, M.S. Basunia, R.M. Clark, P. Fallon, J. Gibelin, B. Lyles, M.A. McMahan, L.G. Moretto, L.W. Phair, E. Rodriguez-Vieitez, M. Wiedeking, J.M. Allmond, and C.W. Beausang, "Determining the (n,γ) cross section of ^{153}Gd using surrogate reactions," in *Proceedings of the 2007 International Workshop on Compound-Nuclear Reactions and Related Topics, Fish Camp, California, 2007* (AIP Conf. Proc., 2008), p. 109.

J.E. Escher, L.A. Bernstein, J.T. Burke, F.S. Dietrich, and B.F. Lyles, "Nuclear Reaction Data from Surrogate Measurements: A Consideration of (n,f) Cross Sections," in *Proceedings of the Eighth International Topical Meeting on Nuclear Applications and Utilization of Accelerators, Pocatello, Idaho, 2007* (American Nuclear Society, 2008).

J. Escher, L.A. Bernstein, J. Burke, F.S. Dietrich, C. Forssén, and B.F. Lyles, in *Proceedings of the International Conference on Nuclear Data for Science and Technology, Nice, France, 2007,* edited by O. Bersillon, F. Gunsing, E. Bauge, R. Jacqmin, and S. Leray (EDP Sciences, 2008), p. 325.

SELECTED PRESENTATIONS

- **Lecturer.** "Organic Scintillators for Fast Neutron Detection," Nuclear Analytical Techniques Summer School, Department of Physics, University of California, Davis, Davis, CA, USA, Aug 13, 2019.
- **Invited.** "Gaming Methods for Studying Deterrence in Hypothetical Escalation Scenarios," Defense Advanced Research Programs Agency (DARPA), Washington, DC USA Apr 30, 2019.

- **Invited.** "Experimental Wargames: Studying Deterrence and Conflict Escalation," Military Operations Research Society, Wargame Community of Practice, February 19, 2019.
- **Invited.** "NSSC Enhancing Mission Awareness: Experiential Learning and Collaborative R&D," National Nuclear Security Administration Office of Defense Nuclear Nonproliferation R&D, Washington, DC USA, Nov 19, 2018.
- **Invited.** "Light Yield in Organic Scintillators," Single Volume Scatter Camera Collaboration, Sandia National Laboratories, Livermore, CA USA, Jan 9, 2019.
- **Invited.** "Characterization Platform for Novel Organic Scintillators," Quarterly Meeting of the Advanced Materials for Gamma Detection Venture, Lawrence Berkeley National Laboratory, Berkeley, CA USA, Dec. 8, 2017.
- **Guest Lecturer.** "Nuclear Security and Nonproliferation Research and Development," Freshman Seminar, Department of Nuclear Engineering, University of California, Berkeley, Berkeley, CA USA, Nov. 13, 2017.
- **Invited.** "Neutrons at the 88-Inch Cyclotron," 88 Strategic Planning Meeting, Lawrence Berkeley National Laboratory, Berkeley, CA USA, Oct. 30, 2017.
- **Invited.** "Establishing and Advancing Nonproliferation and Nuclear Policy Education in Nuclear Science and Engineering Programs-Panel," 2017 American Nuclear Society Annual Meeting, San Francisco, CA USA, Jun. 11-15, 2017.
- **Invited.** "Networks and Nukes: A Multiplex Model of Nuclear Proliferation," Center for International Security and Cooperation, Freeman Spogli Institute for International Studies, Stanford University, Stanford CA, USA, Mar. 6, 2017.
- **Invited.** "Neutrons for National Security," Department of Physics, University of California, Davis, Davis, CA USA, Nov. 29, 2016.
- **Invited.** "Next Generation Challenges: University Consortia in Nonproliferation Education-Panel," 2016 American Nuclear Society Advances in Nuclear Nonproliferation Technology and Policy Conference, Santa Fe, NM USA, Sept. 25-30, 2016.
- **Invited.** "Scintillator Characterization for Neutron Detection," Department of Nuclear Engineering, University of California, Berkeley, Berkeley, CA USA, Feb. 9, 2016.
- **Invited.** "University Consortia for Nuclear Nonproliferation Research and Development-Panel," 2015 American Nuclear Society Winter Meeting, Washington, DC USA, Nov. 8-12, 2015.
- **Invited.** "Next Generation Nuclear Security Policy: Education, Research, and Experience," NATO Advanced Research Workshop on Preparedness for Nuclear and Radiological Threats, Los Angeles, CA USA, Nov. 18-20, 2014.
- **Invited.** "Characterization of Stilbene-doped Bibenzyl Single-Crystal Organic Scintillator for nTOF Diagnostics at NIF," 248th American Chemical Society National Meeting, San Francisco, CA, USA, Aug. 10-14, 2014.
- **Invited.** "Nuclear Science and Security Consortium: Training the Next Generation," 55th Annual Meeting of the Institute on Nuclear Materials Management, Atlanta, GA, USA, July 20-24, 2014.
- "Connecting Science and Policy for Nuclear Security Applications," University and Industry Technical Interchange Review Meeting, Walnut Creek, CA, USA, June 3-5, 2014.
- **Invited.** "The UC Berkeley Nuclear Policy Working Group: A Nontraditional Model for Nuclear Security Education," Workshop on Nuclear Issues Education, Stevens Institute of Technology and the Federation of American Scientists, Hoboken, NJ, USA, Nov. 15, 2013.
- **Lecturer.** "Characterization of Scintillators for Applications in Neutron Diagnostics and Fundamental Nuclear Physics," 2013 Exotic Beam Summer School, Lawrence Berkeley National Laboratory, Berkeley, CA, USA, Jul. 28-Aug. 4, 2013.

- "A UCB-Labs Joint Berkeley Nuclear Research Center," University of California Laboratory Fees Research Program, 2013 Principal Investigator Symposium, Burlingame, CA, USA, Jul. 11, 2013.
- **Invited.** "Epithermal Capture γ-ray Measurements and Spectral Similarity," 4th Workshop on Nuclear Level Density and Gamma Strength, Oslo, Norway, May 27-31, 2013
- "Indirect Determination of Neutron Capture Cross Sections on Spherical and Near-Spherical Nuclei using the Surrogate Method," 11th International Conference on Nucleus-Nucleus Collisions, San Antonio, TX, May 27- June 1, 2012.
- **Invited.** "Surrogate Cross Section Methodology for Advanced Nuclear Reactors," Workshop on Gamma Strength and Level Density in Nuclear Physics and Nuclear Technology, Dresden-Rossendorf, Germany, August 30-September 3, 2010.
- **Lecturer.** "Addressing Nuclear Data Needs for Advanced Nuclear Energy Systems," American Chemical Society Nuclear and Radiochemistry Summer School, San Jose, CA, USA, Jul. 16, 2010.
- **Invited.** "Addressing Nuclear Data Needs for Advanced Nuclear Energy Systems," Department of Physics, University of Washington, Seattle, WA, USA, Apr. 29, 2010.
- **Keynote Address.** "Nuclear Physics for Application," Annual American Association of University Women Funds Dinner, Walnut Creek, CA, USA, Feb. 16, 2010.
- "Indirect Determination of Neutron Capture Cross Sections using the Surrogate Ratio Method," Asia-Pacific Symposium on Radiochemistry, Napa, CA, November 29 thru December 4, 2009.
- **Invited.** "The Surrogate Method: An Indirect Approach to Nuclear Reactions Data to the Benefit of Future Nuclear Energy Systems," Department of Chemical Engineering and Materials Science, University of California, Irvine, Irvine, CA, USA, Nov. 13, 2009.
- **Invited.** "The Role of Surrogate Reactions in the Search for New NRF States," 1st Workshop on Special Topics in Homeland Nuclear Security, Berkeley, CA, July 22-24, 2009.
- **Invited.** "Surrogate Ratio Methodology for the Indirect Determination of (n,γ) Cross Sections," 2nd Workshop on Level Density and Gamma Strength, Oslo, Norway, May 11-15, 2009.
- **Invited.** "The Surrogate Ratio Method: Exploring the Limitations of the Technique," 236th American Chemical Society National Meeting, Philadelphia, PA, August 17-21, 2008.
- **Official US Delegate.** China-India-US Science Technology and Innovation Workshop, Bangalore, India, July 7-9, 2008.
- "Determination of (n,γ) Cross Sections in the Rare Earth Region via the Surrogate Ratio Method," Gordon Research Conference on Nuclear Chemistry, Nuclear Reactions, Colby-Sawyer College, New London, NH, June 15-20, 2008.
- Nuclear Astrophysics Workshop, Livermore, CA, August 27-30, 2007.
- **Invited.** "Effects of Angular Momentum Population Distributions on the Surrogate Method," 234th American Chemical Society National Meeting, Boston, MA, August 19-23, 2007.
- **Lecturer.** "The Physics of Nuclear Weapons," Public Policy and Nuclear Threats Boot Camp, La Jolla, CA, July 9-27, 2007.
- "The Effect of the J-π Population Mismatch on the Surrogate Method," Annual Meeting of the Division of Nuclear Physics of the American Physical Society, Nashville, TN, October 25-28, 2006.
- "Studying the (^{7}Li,^{5}Li) reaction using STARS," Second Joint Meeting of the American Physical Society and The Physical Society of Japan, Maui, Hawaii, September 18-22, 2005.