

BETHANY LYLES GOLDBLUM

4169 Etcheverry Hall – University of California, Berkeley – Berkeley, CA 94720
(011) 510.643.3288 bethany@nuc.berkeley.edu

PROFESSIONAL OBJECTIVE

To establish an academic career performing cutting-edge scientific research and providing quality education at an internationally recognized institution

EDUCATION

| | | |
|-------------------------|---|--------------|
| FALL 2003 – FALL 2007 | UNIVERSITY OF CALIFORNIA – BERKELEY | Berkeley, CA |
| | <ul style="list-style-type: none">Nuclear Engineering – GPA: 4.0/4.0 Degree: M.Sc., December 2005 Ph.D., December 2007 | |
| | Thesis: Absolute and Relative Surrogate Measurements of the $^{236}\text{U}(n,f)$ Cross Section as a Probe of Angular Momentum Effects | |
| FALL 1997 – SPRING 2002 | FORT LEWIS COLLEGE | Durango, CO |
| | <ul style="list-style-type: none">Chemistry/Mathematics – GPA: 4.0/4.0 Degree: B.S./B.A., April 2002 | |

ACADEMIC & RESEARCH EXPERIENCE

| | | |
|-------------------------|--|----------------|
| SEPT 2008 - PRESENT | UNIVERSITY OF CALIFORNIA, BERKELEY | Berkeley, CA |
| | <i>Clare Boothe Luce Chancellor's Postdoctoral Fellow</i> | |
| JAN 2008 – AUG 2008 | UNIVERSITY OF CALIFORNIA, BERKELEY | Berkeley, CA |
| | <i>Postdoctoral Scholar in Department of Nuclear Engineering</i> | |
| JAN 2008 – JUNE 2008 | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES | Washington, DC |
| | <i>Project on Nuclear Issues Scholar</i> | |
| SUMMER 2006 | AUSTRALIAN NATIONAL UNIVERSITY | Canberra, ACT |
| | <i>NSF/AAS East Asia and Pacific Summer Institutes Fellow</i> | |
| SUMMER 2005 | LAWRENCE LIVERMORE NATIONAL LABORATORY | Livermore, CA |
| | <i>Technical Associate in Physics and Advanced Technologies</i> | |
| SUMMER 2004 | INSTITUTE ON GLOBAL CONFLICT & COOPERATION | La Jolla, CA |
| | <i>NSF/IGERT Public Policy and Nuclear Threats Fellow</i> | |
| FALL 2002 – SPRING 2003 | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | Cambridge, MA |
| | <i>Technical Assistant in Department of Chemical Engineering</i> | |
| SUMMER 2002 | ACS NUCLEAR & RADIOCHEMISTRY SUMMER SCHOOL | San Jose, CA |
| | <i>Nuclear Instrumentation and Radiation Laboratory Techniques</i> | |
| SUMMER 2001 | STANFORD UNIVERSITY | Palo Alto, CA |
| | <i>X-Ray Scattering at Stanford Synchrotron Radiation Laboratory</i> | |

TEACHING & LEADERSHIP EXPERIENCE

| | | |
|-----------------------|---|----------------|
| FALL 2009 - PRESENT | BERKELEY NUCLEAR RESEARCH CENTER <i>Assistant Director</i> | Berkeley, CA |
| SPRING 2009 | UNIVERSITY OF CALIFORNIA – BERKELEY <i>Lecturer – Radiation Biophysics and Dosimetry</i> | Berkeley, CA |
| FALL 2007 | UNIVERSITY OF CALIFORNIA – BERKELEY <i>Head Graduate Student Instructor – Nuclear Reactions and Radiation</i> | Berkeley, CA |
| AUG 2006 – DEC 2007 | UNIVERSITY OF CALIFORNIA – BERKELEY <i>Graduate Social Club Chairperson</i> | Berkeley, CA |
| FEB 2007 | INSTITUTE ON GLOBAL CONFLICT AND COOPERATION <i>Organizer and Host for Public Policy and Nuclear Threats Winter Conference</i> | Washington, DC |
| FALL 2003 | UNIVERSITY OF CALIFORNIA – BERKELEY <i>Graduate Student Instructor – Radiation Detection and Nucl. Inst. Lab</i> | Berkeley, CA |
| AUG 1999 – APRIL 2002 | FORT LEWIS COLLEGE <i>Teacher's Assistant in Introductory and Organic Chemistry Laboratories</i> | Durango, CO |

SCHOLASTIC HONORS AND AWARDS

- Finalist in the University of California, Berkeley's Science, Technology and Engineering Policy White Paper Competition (2006)
- American Nuclear Society Graduate Scholarship Award (2005)
- Student Marshal for Fort Lewis College 2002 Graduating Class (Highest GPA)
- 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)

FELLOWSHIPS AND GRANTS

- Clare Boothe Luce Chancellor's Postdoctoral Fellowship, UC Berkeley (2008)
- American Association of University Women Selected Professions Dissertation Fellow (2007)
- Soroptimist Founder Region Fellow (2007)
- National Science Foundation East Asia and Pacific Summer Institute Grant Recipient (2006)
- 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)

SCHOLARLY CONTRIBUTIONS

REFEREED JOURNAL ARTICLES

- 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 $^{230}\text{Th}(n,f)$ and $^{231}\text{Th}(n,f)$ 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. Hinnners, 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. Tripathi 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 $(^3\text{He},t\bar{f})$ 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 $(\alpha,\alpha'f)$ 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 $^{235}\text{U}(n,\gamma)$ and (n,f) cross sections from $^{235}\text{U}(d,p\gamma)$ and (d,pf) ," *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, L.A. 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 $^{236}\text{U}(n,f)$ 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

D.H. Chivers, B.F. Lyles Goldblum, B.H. Isselhardt, 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

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

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 ($^3\text{He},t$) 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') 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.

PRESENTATION ABSTRACTS

L.A. Bernstein, J.T. Burke, L.W. Phair, P. Fallon, K.J. Moody, M. McMahan, B.F. Lyles, R.M. Clark, A.O. Macchiavelli, I.Y. Lee, M. Wiedeking and S. Sinha. “Determination of the $^{237}\text{U}(n,\gamma)$ and $^{237}\text{U}(n,2n)$ cross sections using the surrogate ratio technique,” in *Abstracts of Papers of the American Chemical Society* **231** (2006).

B.F. Lyles, A.P. Gast, J.A. Pople, S.A. Furlong and S.P. Armes. “SAXS solution study of self-assembling polyelectrolyte diblock copolymers,” in *Abstracts of Papers of the American Chemical Society* **223** (2002).

B. Lyles and P. Russo. “Characterization of self-assembling two-directional arborol gels and a fluorescent analog,” in *Abstracts of Papers of the American Chemical Society* **221** (2001).

CONFERENCE PRESENTATIONS

-
- 1st Workshop on Special Topics in Homeland Nuclear Security, Berkeley, CA, July 22-24, 2009 **Invited Talk**
 - 3rd UC Forum on the Future of Nuclear Power, Berkeley, CA, June 10-12, 2009 **Co-Organizer**
 - 2nd Workshop on Level Density and Gamma Strength, Oslo, Norway, May 11-15, 2009 **Invited Talk**
 - 236th American Chemical Society National Meeting, Philadelphia, PA, August 17-21, 2008 **Invited Talk**
 - China-India-US Science Technology and Innovation Workshop, Bangalore, India, July 7-9, 2008 **Official US Delegate**
 - Gordon Research Conference on Nuclear Chemistry, Nuclear Reactions, Colby-Sawyer College, New London, NH, June 15-20, 2008 **Invited Talk**
 - Public Policy and Nuclear Threats Winter Conference, Lawrence Livermore National Laboratory, Livermore, CA, February 28-29, 2008 **Conference Chair**
 - Nuclear Astrophysics Workshop, Livermore, CA, August 27-30, 2007
 - 234th American Chemical Society National Meeting, Boston, MA, August 19-23, 2007 **Invited Talk**
 - Public Policy and Nuclear Threats Training Program, La Jolla, CA, July 9-27, 2007 **Invited Talk**
 - Public Policy and Nuclear Threats Winter Conference, Washington, D.C., February 1-2, 2007 **Conference Chair**
 - The Annual Meeting of the Division of Nuclear Physics of the American Physical Society, Nashville, TN, October 25-28, 2006
 - Public Policy and Nuclear Threats Winter Conference, Berkeley, CA, January 26-27, 2006
 - Second Joint Meeting of the American Physical Society and The Physical Society of Japan, Maui, Hawaii, September 18-22, 2005

RELATED SKILLS

-
- C/C++ Programming
 - Unix/Linux Environment

- MATLAB & Mathematica
- Monte Carlo N-Particle (MCNP) Transport Code
- Wide and Small-angle X-ray Scattering
- Atomic Force Microscopy
- Nuclear Magnetic Resonance Spectroscopy
- Gas Chromatography and Time-of-Flight Mass Spectrometry
- Matrix Assisted Laser Desorption/Ionization Mass Spectrometry
- Laser Induced Fluorescence
- Hot Separations Chemistry including Column Chromatography
- Gamma Ray Spectroscopy
- Particle Detection using Silicon Semiconductors

PROFESSIONAL AFFILIATIONS

- American Physical Society
- American Nuclear Society
- American Institute of Physics

HOBBIES

Scuba Diving, Hip Hop Dancing, Ocean Kayaking, World Traveling