Jessica Halligan

3275 Pomace Ct
Pleasanton, CA 94566

925-858-8357
halligan.jessica.leigh@gmail.com

Education

M.S., Nuclear Engineering, Purdue University, 3.7 GPA — 2013
B.S., Chemical Engineering and Nuclear Engineering, UC Berkeley, 3.4 GPA — 2008

Work

Teacher and Tutor • Pleasanton Unified School District, Pleasanton, CA — 2015–
Conducted classes and tutoring in mathematics for middle and high school students

Graduate Research Assistant • Purdue University, West Lafayette, IN — 2012–2013
Advised SPARC group for development of risk-informed nuclear power plant construction

Graduate Research Assistant • Purdue University, West Lafayette, IN — 2009–2012
Developed parts of novel antineutrino detector for reactor monitoring in AISL group
Modeled neutron time projection chamber with MCNP Polimi and Mathematica

Visiting Researcher • Lawrence Livermore National Laboratory, Livermore CA — 2009
Developed neutron time projector simulation code with MCNPX for Advanced Detectors Group

Research Assistant • Argonne National Laboratory, Lemont, IL — 2008
Used Penning Trap mass spectrometer to determine Q-value measurements of tellurium isotopes

Research Assistant • Gran Sasso National Laboratory, Assergi, Italy — 2008
Performed chemical etching of crystal bolometers and constructed prototype radon shield for CUORE

Tutoring Supervisor • UC Berkeley Academic Services, Berkeley, CA — 2007–2008
Chemistry Tutor • UC Berkeley Academic Services, Berkeley, CA — 2006–2008

Research Assistant • Lawrence Berkeley National Laboratory, Berkeley, CA — 2006–2007
Collected and analyzed HPGe/BGO radiation detector data for gamma ray multiplicity measurement

Nuclear Sciences Intern • Lawrence Livermore National Laboratory, Livermore, CA — 2007
Designed and optimized neutron collimator source and geometry with MCNPX

Nuclear Sciences Intern • Lawrence Livermore National Laboratory, Livermore, CA — 2006
Analyzed pathogenic spores with SEM and energy dispersive x-ray spectrometer

Tools

Languages/Packages: C, MATLAB, Octave, Python, Mathematica, MCNPX, MCNP PoliMi
Documentation/Development: Microsoft Office, LaTeX, Emacs

Honors

Purdue Doctoral Fellowship — 2009
California Governor's Scholar — 2004

Research

- with N.S. Bowden, M. Foxe, M. Heffner, I. Jovanovic, P. O'Malley, D. Carter, and G. Carosi. Directional fast neutron detection using a time projection chamber. Nuclear Instruments and Methods in Physics Research, vol. 624, issue 1, p. 153-161, Dec 2010.

- with D.L. Bleuel, L.A. Bernstein, J.T. Burke, Gibelin, M.D. Heffner, E. B. Norman, L. Phair, N.D. Scielzo, S.A. Sheets, N.J. Snyderman, and M. Wiedeking. Gamma-ray multiplicity measurement of ^{252}Cf in a highly-segmented HPGe/BGO detector array. Nuclear Instruments and Methods in Physics Research, vol. 624, issue 3, p. 691-698, Dec 2010.

- with N.D. Scielzo, S. Caldwell, G. Savard, J.A. Clark, C.M. Deibel, J. Fallis, S. Gulick, D. Lascar, A.F. Levand, G. Li, E.B. Norman, R.E. Segel, K.S. Sharma, M. Sternberg, T. Sun, and J. Van Schelt. Double-beta decay Q-values of ^{130}Te, ^{128}Te, and ^{120}Te. Physical Review C, vol. 80, issue 2, p. 5, Aug 2009.

- Simulation of a Neutron Time Projection Chamber Detector. 3rd Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, Volume 54, Number 10 , October 2009 in Waikoloa, HI (presentation).

- Double-beta decay Q-values of ^{130}Te, ^{128}Te, and ^{120}Te. Conference Experience for Undergraduates (CEU), Department of Nuclear Physics Conference, August 2008 in Oakland, CA (presentation).