Sherline, Todd E.

129 Newhaven Road • Oak Ridge, TN 37830 • Phone: (865)-773-3157 • E-Mail: sherline.todd@gmail.com

Education

Ph. D. in Ultra-Low Temperature Physics, GPA 4.0/4.0

August 2006, University of Florida, College of Liberal Arts and Sciences, Gainesville, FL

Bachelor of Science in Physics, GPA 3.5/4.0

May 1997 University of Florida, College of Liberal Arts and Sciences, Gainesville, FL

Skills

- Design, construction, operation, diagnosis, and maintenance of SE LT&M equipment
- Data analysis/Computer programming: OriginPRO, Mathematica
- Experimental Planning and Logistics
- NSD user program support
- Analytical/Critical Thinking
- Teaching in group and individual settings
- Listening/Communication
- Public Speaking/Presentations

Experience

NSD Sample Environment Cryogenic Physicist — Oak Ridge National Laboratory

May 2012 - Present — Oak Ridge, TN

- Design, fabrication, testing, and implementation of new sample environments
- Front line sample environment support for NSD user program

Adjunct Professor — Pellissippi State Technical Community College

March 2016 – December 2016 — Knoxville, TN

- Teaching “Concepts of Physics” and “Physics I w/o Calculus”

Private Tutor in Mathematics and Physics

August 2014 – December 2019

- Tutoring Mathematics
  - Pre-Algebra to Differential Equations at the middle school to college level
- Tutoring Physics
  - College Physics I and II, Statistical Mechanics at the college level

NSD SEQUOIA Scientific Associate — Oak Ridge National Laboratory

September 2006 – May 2012 — Oak Ridge, TN

- Oversight of the construction and operational support for the users of SEQUOIA

Research Assistant — University of Florida Microkelvin Laboratory

May 1999 – September 2006 — Gainesville, FL

- Doctoral research on solid ^3He and Cs_2CuBr_4 at ultra-low temperature

Guest Scientist — Hahn-Meitner Institut
September 2000 – May 2003 — Berlin, Germany

- Doctoral research on nuclear ordering in Solid ^{3}He at ultra-low temperatures using neutron scattering

Teaching Assistant — University of Maryland Department of Physics
August 1997 – May 1999 — College Park, MD

- Taught lab to engineering students for the Physics Education Research Group

Undergraduate Teaching Assistant — University of Florida Department of Physics
January 1997 – May 1997 — Gainesville, FL

- Taught lab sections of Physics II – Electricity and Magnetism

Calculus Tutor — University of Florida Broward Tutoring Center
August 1993 – May 1994 — Gainesville, FL

- Tutored Calculus in a large room group setting

Volunteer/Community Service Work

Leader in several church organizations	2012–Present; Oak Ridge, TN
Science Olympiad Facilitator	2/2015; Knoxville, TN
Alachua County Regional Science and Engineering Fair Judge	8/2004; Gainesville, FL

Schools/Professional Training

Mastering Presentations — August 25, 2014
Oak Ridge National Laboratory Training Event

Mastering Workflow – Getting Things Done — August 23, 2013
Oak Ridge National Laboratory Training Event

Project Management Foundation Skills — March 25 – 27, 2009
Oak Ridge National Laboratory Training Event

MS Project 2007 — Jan 27 – 28, 2009
Oak Ridge National Laboratory Training Event

Human Performance Improvement Fundamentals — September 19, 2007
Oak Ridge National Laboratory Training Event

Exploring Crucial Conversations — March 1, 2007
Oak Ridge National Laboratory Training Event

European Cryogenics School — Sept 25 – 27, 2002
CRTBT – CNRS

22nd Tutorial on Neutron Scattering February 2001
Hahn-Meitner Institut, Berlin

Professional Societies

American Physical Society
Member: 2020 – Present

Neutron Scattering Society of America
Member: 2007 - Present

International Society for Sample Environment
Member: 2014 - Present

Awards

ORNL Awards Night: Continuing Improvement	December 10, 2021
ORNL Service Award: 15 Years	September 11, 2021
ORNL Service Award: 10 Years	September 11, 2016
Supplemental Performance Award	December 1, 2013
ORNL Service Award: 5 Years	September 11, 2011
Significant Achievement Award	March 1, 2009

Publications

T.R. Prisk, R.T. Azuah, D.L. Abernathy, G.E. Granroth, T.E. Sherline, P.E. Sokol, J. Hu, M. boninsegni. "Zero-point Motion of Liquid and Solid Hydrogen." Physical Review B, 094511 (2023).

Feng Ye, Masaaki Matsuda, Zachary Morgan, Todd Sherline, Yifei Ni, Hengdi Zhao, G. Cao. "Magnetic Structure and Spin Fluctuations in the Colossal Magnetoresistance Ferrimagnet $Mn_3Si_2Te_6$." Physical Review B, 180402 (2022).

Barry Winn, C. Broholm, M Bird, Bruce Breneman, David Coffey, Roy Cutler, Robert Duckworth, R. Erwin, Seungyong Hahn, Yamali Hernandez, Kenneth Herwig, Leo Holland, Kevin Lonergan, Ziad Melhem, Stephen Minter, C. Nelson, Parans Paranthaman, Josh Pierce, Jacob Ruff, Tengming Shen, Todd Sherline, Peter Smeibidl, David Tennant, Danko Van der Laan, Robert Wahle, Yifei Zhang. *Utra-high Field Magnets for X-ray and Neutron Scattering Using High Temperature Superconductors*. ORNL/TM-2016/712, 2017.

S. Bryan, T. R. Prisk, T. E. Sherline, S. O. Diallo, P. E. Sokol. "Bulklike Excitations in Nanoconfined Liquid Helium." Physical Review B, 144509 (2017).

J. P. Clancy, B. D. Gaulin, C. P. Adams, G. E. Granroth, A. I. Kolesnikov, T. E. Sherline, F. C. Chou. "Singlet-Triplet Excitations in the Unconventional Spin-Peierls Compound TiOBr." Physical Review Letters, 117401 (2011).

J. P. Clancy, B. D. Gaulin, C. P. Adams, A. I. Kolesnikov, G. E. Granroth, T. E. Sherline, F. C. Chou. "X-ray and Neutron Scattering Studies of the Unconventional Spin-Peierls Compound TiOBr." Physics in Canada 63(3), 192-194 (2010).

T. E. Sherline, L. Solomon, C. K. Roberts II, D. Bruce, B. Gaulin, and G. E. Granroth. "A low temperature sample orienting device for single crystal spectroscopy at the SNS." Journal of Physics: Conference Series, 12085 (2010).

B. E. Granroth, A. I. Kolesnikov, T. E. Sherline, J. P. Clancy, K. A. Ross, J. P. Ruff, B. D. Gaulin, S. E. Nagler. "SEQUOIA: A Newly Operating Chopper Spectrometer at the SNS." Journal of Physics: Conference Series, 12058 (2010).

N.A. Fortune, S.T. Hannah, Y. Takano, Y. Yoshida, T.E. Sherline, A.A. Wilson-Muenchow, T. Ono, H. Tanaka. Journal of Physics: Conference Series, 22008 (2010).

N. A. Fortune, S. T. Hannahs, Y. Yoshida, T. E. Sherline, T. Ono, H. Tanaka, and Y. Takano. "Cascade of Magnetic-Field-Induced Quantum Phase Transitions in a Spin ½ Triangular-Lattice Antiferromagnet." Phys. Rev. Lett., 257201 (2009).

T. E. Sherline, E. D. Adams, and Y. Takano. "Temperature Dependence of the Upper Critical Field in bcc Solid ^{3}He." J. Low Temp. Phys. 148, 743 (2007).

T. E. Sherline, (2006). – *Antiferromagnetism in Cesium Tetrabromocuprate (II) and Body-Centered-Cubic Solid Helium Three* [Doctoral dissertation, University of Florida]