

Dr Andrew Karl Gillespie
Research Scientist

Texas Tech University
Department of Physics – Center for Emerging Energy Sciences
Lubbock, TX 79409

ACADEMIC TRAINING

PhD, Physics, University of Missouri, Columbia, Missouri, May 2017.
MS, Condensed Matter Physics, University of Missouri, Columbia, Missouri,
May 2014.
BS, Physics, Illinois State University, Normal, Illinois, May 2011.
BS, Physics Teacher Education, Illinois State University, Normal, Illinois, May 2011.

RESEARCH EXPERIENCE (Representative)

Research Scientist, Department of Physics and Astronomy, Numeric Modeling
of Nuclear Processes Using Monte Carlo n-Particle Simulations, Evaporative
Calorimetry and Mass Spectrometry of light isotopes, Texas Tech
University, Lubbock Texas, April 2017 – present, Dr. Robert Duncan,
Supervising Professor.
Research Assistant, Department of Physics, Hydrogen Adsorption and Enthalpy
Measurements on Activated Carbons, University of Missouri, Columbia,
February 2012 – May 2017, Dr. Peter Pfeifer, Supervising Professor and
Physics Department Chairperson.
Department of Energy Internship, Metallurgical Analysis of Niobium for
Improved Accelerating Gradients in SRF Cavities, Fermi National
Accelerator Laboratory, Batavia, Illinois, May 2009 – August 2009, Lance
Cooley, Charlie Cooper, Spencer Pasero, Research Advisors.

ADDITIONAL RELEVANT TRAINING (Representative)

Introduction to MCNP6, Los Alamos National Laboratory, August 2021.
Using MCNP to Create ACE Files & Visualize Nuclear Data, Los Alamos
National Laboratory, August 2021.
Intermediate MCNP6, Los Alamos National Laboratory, October 2021.
MCNP6 for Nuclear Safeguards Practitioners, Los Alamos National
Laboratory, May 2022.

PEER-REVIEWED PUBLICATIONS (Representative)

1. "A Quantitative Light-Isotope Measurement System for Climate and Energy Applications" R. P. Thorn, A. Gillespie, C. Lin, H. Higgins, S. LaCouture, R. Baca, B. Tejerina, A. Durso, D. Jones, R. Ogu, B. Neurohrand, and R. Duncan. *Int. J. Mass Spectrom.*, 464(116574), June 2021. doi: 10.1016/j.ijms.2021.116574
2. "A New Fast Response Cryogenic Evaporative Calorimeter" A. Gillespie, C. Lin, R. Thorn, H. Higgins, R. Baca, A. Durso, D. Jones, R. Ogu, J. Marquis, and R. Duncan. *Review of Scientific Instruments*, 91(8), 085103. <https://doi.org/10.1063/5.0013713>
3. "Quasi-elastic Neutron Scattering Measurement of Hydrogen Diffusion in a Graphene Oxide Framework" M. Connolly, Z. Buck, C. Wexler, J. Schaeperkoetter, H. Taub, A. Gillespie, and H. Kaiser. *J. Phys. Chem. A*, April 2020.
4. "Determination of the Enthalpy of Adsorption of Hydrogen in Activated Carbon at Room Temperature" E. Knight, A. Gillespie, M. Prosniewski, D. Stalla, E. Dohnke, T. Rash, P. Pfeifer, and C. Wexler. *International Journal of Hydrogen Energy*, *International Journal of Hydrogen Energy* 45 (27). <https://doi.org/10.1016/j.ijhydene.2020.04.037>
5. "Effect of cycling and thermal control on the storage and dynamics of a 40-L monolithic adsorbed natural gas tank" M. Prosniewski, T. Rash, J. Romanos, A. Gillespie, D. Stalla, E. Knight, A. Smith, and P. Pfeifer, *Fuel* 244, 447-453, May 2019. <https://doi.org/10.1016/j.fuel.2019.02.022>
6. "Controlled charge and discharge of a 40-L monolithic adsorbed natural gas tank" M. Prosniewski, T. Rash, E. Knight, A. Gillespie, D. Stalla, C. Schulz, and P. Pfeifer, *Adsorption* 24 (6), 541-550, August 2018. <https://doi.org/10.1007/s10450-018-9961-2>
7. "Phase Transition of H₂ in Subnanometer Pores Observed at 75 K" R. J. Olsen, A. Gillespie, J. W. Taylor, C. I. Contescu, M. B. Stone, P. Pfeifer, and J. R. Morris, *ACS Nano*, Volume 11, Issue 11, pages 11617 - 11631, November 2017. <https://doi.org/10.1021/acsnano.7b06640>
8. "Microporous Carbon Monolith Synthesis and Production for Methane Storage," T.A. Rash, A. Gillespie, B.P. Holbrook, L.H. Hiltzik, J. Romanos, Y. Soo, S. Sweany, and P. Pfeifer, *Fuel* 200, 371-379, July 2017. <https://doi.org/10.1016/j.fuel.2017.03.037>
9. "Properties of Adsorbed Hydrogen and Methane Films on Nanoporous Solids" A. Gillespie, Doctoral Thesis, University of Missouri, May 2017. <https://hdl.handle.net/10355/63810>
10. "Multiply Surface-Functionalized Nanoporous Carbon for Vehicular Hydrogen Storage." P. Pfeifer, A. Gillespie, D. Stalla, and E. Dohnke, United States: N. p., 2017. Web. doi:10.2172/1344383.

TEACHING EXPERIENCE (Representative)

Affiliate Instructor, Department of Physics and Astronomy, Metropolitan State University, Denver, Colorado, July 2020 – present.

Instructor, Department of Physics and Astronomy, Texas Tech University, Lubbock, Texas, August 2017 – August 2021.

AWARDS

Faculty Senate Teaching Excellence Award (2nd), Metropolitan State University Faculty Senate, April 2022.

Teaching Assistant of the Year, Department of Physics and Astronomy, University of Missouri, April 2016.

Research and Creative Activities Forum (RCAF) Presentation Competition Winner, Physical Sciences, University of Missouri, March 2015

H. R. Danner Research Fellowship, Department of Physics and Astronomy, University of Missouri, May 2014.

Research and Creative Activities Forum (RCAF) Presentation Competition Winner, Physical Sciences, University of Missouri, March 2013

Skadron Computational Physics Competition, 2nd Place, Department of Physics, Illinois State University, April 2011.

University Physics Competition, Silver Medal Winner, Theoretical Analysis and Optimization of a Trebuchet, Department of Physics, University of Colorado Boulder, December 2010.

Top 100 Presentations, ORNL SERCH Poster Presentation Competition, November 2009.

Skadron Computational Physics Competition, 2nd Place, Department of Physics, Illinois State University, April 2009.

Teaching Assistant of the Year, Department of Physics, Illinois State University, April 2009.

Robert Shears Renewable Energy Scholarship, Department of Physics, Illinois State University, April 2009.

Skadron Computational Physics Competition, 1st Place, Department of Physics, Illinois State University, April 2008.

Eagle Scout, Boy Scouts of America, April 2005.