Elizabeth S. Sooby, PhD

Assistant Professor

I. CONTACT INFORMATION

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II. EDUCATION AND TRAINING

Bachelor of Science; Physics; Millsaps College; **2008**
Master of Science; Physics; Texas A&M University; **2011**
Doctor of Philosophy; Physics; Texas A&M University; **2014**
Postdoctoral Fellow; Materials Science and Tech.; Los Alamos National Lab.; **2014-2017**

III. RESEARCH AND PROFESSIONAL EXPERIENCE

Co-owner; Nuclear Materials Consulting, LLC; **2021 – Present**
Assistant Professor; Mechanical Engineering; University of Texas at San Antonio; **2019 – Present**
Assistant Professor; Physics and Astronomy; University of Texas at San Antonio; **2017 – Present**
Staff Scientist II; Materials Science and Tech.; Los Alamos National Laboratory; **2017**
Grad. Research Asst.; Materials Science and Tech; Los Alamos National Laboratory; **2013-2014**
Visiting Researcher; University Pierre and Marie Curie, Paris 6, Paris, France; **2012**
Visiting Researcher; Center for Advanced Energy Studies, Idaho Falls, ID; **2011**
Grad. Research Asst.; Materials Physics Applications Los Alamos National Laboratory; **2010**
Grad. Research Asst.; Department of Physics; Texas A&M University; **2009-2014**
Undergrad. Intern; Propulsion Research Lab; NASA Marshall Space Flight Center; **2009**
Undergrad. Intern; Electrical Engineering Support ; NASA Marshall Space Flight Center; **2008**

IV. PUBLICATIONS

Book Chapters (Refereed)

1. **Elizabeth Sooby Wood,** Joshua T. White, Brian Jaques, Douglas Burkes, Paul Demkowicz, "10 - Advances in fuel fabrication", Editor(s): Markus H.A. Piro, In Woodhead Publishing Series in Energy, *Advances in Nuclear Fuel Chemistry*, Woodhead Publishing, 2020, Pages 371-418, ISBN 9780081025710, https://doi.org/10.1016/B978-0-08-102571-0.00011-2.

Journal Articles (Refereed)

2. Cole Moczygemba, Jonathan George, Eduardo Montoya, Eunja Kim, Geronimo Robles, and **Elizabeth S Sooby**, "Structure Characterization and Steam Oxidation Performance of U_3Si_2 with Zr Alloying Additions," *Journal of Nuclear Materials*, Available Online July, 27 2022, https://doi.org/10.1016/j.jnucmat.2022.153951.
3. Jiatu Liu, Patrick A. Burr, Joshua T. White, Vanessa K. Peterson, Pranesh Dayal, Christopher Baldwin, Deborah Wakeham, Daniel J. Gregg, **Elizabeth S. Sooby**, and Edward Obbard, "Structural and phase evolution in U_3Si_2 during steam corrosion," *Corrosion Science*, Vol 204, 110373, August 2022, https://doi.org/10.1016/j.corsci.2022.110373.
4. **Elizabeth S. Sooby**, Brian Brigham, Geronimo Robles, Joshua White, Scarlett Widgeon Paisner, Erofili Kardoulaki, and Brandon Williams, "Steam Oxidation of Uranium Mononitride in Pure and Reducing Steam Atmospheres to 1200 °C," *Journal of Nuclear Materials*, 560, March 2022, https://doi.org/10.1016/j.jnucmat.2021.153487.
5. Jennifer Watkins, Adrian R. Wagner, Adrian Gonzales, Brian J. Jaques, **Elizabeth S. Sooby**, "Challenges and Opportunities to Alloyed and Composite Fuel Architectures to Mitigate High Uranium Density Fuel Oxidation: Uranium Diboride and Uranium Carbide", *"Journal of Nuclear Materials*, 560, March 2022, https://doi.org/10.1016/j.jnucmat.2021.153502.

6. Adrian Gonzales, Jennifer K. Watkins, Adrian R. Wagner, Brian J. Jaques, **Elizabeth S. Sooby**, "Challenges and Opportunities to Alloyed and Composite Fuel Architectures to Mitigate High Uranium Density Fuel Oxidation: Part 2 Uranium Silicide," *Journal of Nuclear Materials*, 553, September 2021, https://doi.org/10.1016/j.jnucmat.2021.153026.
7. Jennifer K. Watkins, Adrian Gonzales, Adrian R. Wagner, **Elizabeth S. Sooby**, Brian J. Jaques, "Challenges and Opportunities to Alloyed and Composite Fuel Architectures to Mitigate High Uranium Density Fuel Oxidation: Part 1 Uranium Mononitride," *Journal of Nuclear Materials*, 553, September, 2021, https://doi.org/10.1016/j.jnucmat.2021.153048.
8. Tashiema Wilson, Sven Vogel, Denise Lopes, Vancho Kocevski, Joshua White, Elizabeth Sooby Wood, Theodore Besmann, "Phase Stability of U_5Si_4, USi, and U_2Si_3 in the Uranium-Silicon System," *Journal of Nuclear Materials*, 540, November 2020, https://doi.org/10.1016/j.jnucmat.2020.152353.
9. D. A. Lopes, T. L. Wilson, V. Kocevski, E. Moore, T. M. Besmann, **E. Sooby Wood,** J. T. White, A. T. Nelson, S.C. Middleburgh, and A. Claisse, "Experimental and Computational Assessment of U-Si-N Ternary Phases", *Journal of Nuclear Materials*, 516, April 2019, pages 194-201, https://doi.org/10.1016/j.jnucmat.2019.01.008.
10. **Sooby Wood, E.,** White, J., Grote, C., and Nelson, A.T. "U_3Si_2 in H_2O: Part I Flowing Steam and the effect of H_2". *Journal of Nuclear Materials, 501*, April 2018, 404-412, https://doi.org/10.1016/j.jnucmat.2018.01.002.

V. SYNERGESTIC ACTIVITIES

1. Panelist (2022), Roundtable on Fundamental Science to Accelerate Nuclear Energy Innovation, Department of Energy Office of Science, Basic Energy Sciences Program.
2. National Advisory Panelist (2022-present), Department of Energy Office of Nuclear Energy
   Invited to serve on a national advisory panel reporting to DOE-NE aimed to increase the engagement of MSI and HBC's in the Nuclear Energy University Programs
3. UTSA Radiation and Laser Safety Committee, member, (2019-current)
   Reviewing radiological work procedures for new faculty, faciltiiest, and capabilities, ensuring safe work with radiological materials, radiation producing devices, and lasers.
4. American Nuclear Society Diversity & Inclusion Committee (2020-present), Chair (2022-present)
   Contributions to this committee include: meeting to review items such as the ANS Code of Ethics and PR statements regarding ANS's commitment to DEI, organization of panels and workshops at ANS Meetings, advancement of K-12 outreach as it pertains to DEI (identifying underserved communities and avenues to reach them), working with our team of translators to transition our educational content to multi-lingual audiences, and the review of award nomination packages.
5. Faculty Advisor UTSA Undergraduate Women in Physics (R-WiP: 2018-present)
   R-WiP is a student organization. In this role, I mentor, recruit, and advance underrepresented minority students in areas of Physics in addition to leading professional development activities for participants from the undergraduate to faculty levels.