

NOAH D'AMICO

Ph.D. Physics

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Lubbock, TX

PROFESSIONAL SUMMARY

Physicist and researcher specializing in nuclear detection systems, novel nuclear fuel technologies, and applied machine learning. Successfully defended PhD dissertation on detection and materials advances for next-generation nuclear systems (March 2026). Research encompasses a novel fission-fusion nuclear cycle using lithium, with focus on cost-effective radiation sensing methods and CR-39 plastic nuclear track detectors. Track record of 3 published peer-reviewed papers, 4 patent filings, and cross-functional experience spanning academic research, AI-driven product strategy, and technology leadership.

EDUCATION

Ph.D. in Physics <i>Texas Tech University</i> GPA: 4.0 Dissertation: "Detection and Materials Advances for Next-Generation Nuclear Systems" Advisor: Dr. Robert V. Duncan	May 2026
M.S. in Physics <i>Texas Tech University</i> GPA: 4.0	2024
B.S. in Physics <i>University of Florida</i> GPA: 3.6	2023

PROFESSIONAL EXPERIENCE

Chief Operating Officer <i>Blankslate Innovation</i> <ul style="list-style-type: none">Direct operations and strategic planning for an early-stage technology companyLead marketing and customer outreach for new FT-ICR mass spectrometer sales	2026 – Present
Teaching Assistant <i>Department of Physics & Astronomy, Texas Tech University</i> Lubbock, TX <ul style="list-style-type: none">Instruct undergraduate sections of Introduction to Astronomy Lab (ASTR 1400)	Jan 2026 – Present
Graduate Research Assistant <i>Center for Emerging Energy Science, Texas Tech University</i> Lubbock, TX <ul style="list-style-type: none">Led development of an AI-based nuclear particle track analysis system using MATLAB R-CNN and YOLO object detectionEngineered boron nitride coatings on CR-39 detectors to enhance neutron detection sensitivityProduced low-density aerogel nuclear fuels for fission fragment rockets and novel reactor designsDesigned and built experimental vacuum systems for nuclear materials handling and analysisContributed to tritium content determination in D₂ gas and heavy water	May 2024 – Jan 2026
Campus Strategist <i>Perplexity AI</i> <ul style="list-style-type: none">Drove adoption of Perplexity AI tools across Texas Tech University through campus outreach and student engagement	Dec 2024 – Jun 2025
Teaching Assistant	Aug 2023 – May 2024

Department of Physics & Astronomy, Texas Tech University | Lubbock, TX

- Taught undergraduate lab sections for Principles of Physics I (PHYS 1403) and Principles of Physics II (PHYS 2401)

Electronics Lab Assistant

Aug 2022 – May 2023

Department of Physics, University of Florida | Gainesville, FL

- Supported LIGO laboratory operations for the physics department

PUBLICATIONS

1. "AI-based Large-Area Nuclear Particle Track Analysis System," **N. D'Amico**, S. Puri, I. Jones, C. Lin, A.K. Gillespie, B. Zhao, R.V. Duncan. *Nuclear Engineering and Technology*, 2025. DOI: 10.1016/j.net.2025.103738
2. "Boron Nitride Coatings for the Enhanced Detection of Neutrons in CR-39," **N. D'Amico**, S. Puri, I. Jones, C. Lin, A.K. Gillespie, B. Zhao, R.V. Duncan. *Nuclear Engineering and Technology*, 2025. DOI: 10.1016/j.net.2025.104027
3. "Production of Low-Density Aerogel Nuclear Fuels for Use in Fission Fragment Rockets and Novel Reactor Design," **N. D'Amico**, S. Puri, I. Jones, C. Lin, A.K. Gillespie, B. Zhao, R.V. Duncan. *Nuclear Engineering and Technology*, 2026. DOI: 10.1016/j.net.2026.104351
4. "Determination of Tritium Content in D₂ Gas and Heavy Water," S. Puri, **N. D'Amico**, I. Jones, C. Lin, A.K. Gillespie, S. Alaniz, R.V. Duncan, 2025. *Under review, Journal of Open Nuclear Energy*.
5. "Radioisotope Collision-Induced Fusion in D₂ Gas," **N. D'Amico**, S. Puri, I. Jones, C. Lin, A.K. Gillespie, B. Zhao, R.V. Duncan, 2025. *In preparation*.

PATENTS & DISCLOSURES

1. R.V. Duncan, A.L. Sobel, C. Lin, I. Jones, A.K. Gillespie, S. Puri, **N. D'Amico**. "Development of Solid-State Particle Track Detectors with Enhanced Neutron Detection for Fusion and Aerospace Applications." Provisional Patent, TTU Ref. No. 2025-020.
2. R.V. Duncan, C. Lin, I. Jones, A.K. Gillespie, S. Puri, **N. D'Amico**. "Solar Cell Heavy Water Enrichment System." Patent Disclosure, TTU Ref. No. 2025-005.
3. R.V. Duncan, C. Lin, I. Jones, A.K. Gillespie, S. Puri, **N. D'Amico**. "Novel Method for Detection of High-LET Radioisotopes in Drinking Water and in Other Applications Critical to Human Health and Safety." Patent Disclosure, Texas Tech University.
4. R.V. Duncan, C. Lin, I. Jones, A.K. Gillespie, S. Puri, **N. D'Amico**, B. Zhao. "Method for Manufacturing Aerogel-Based Nuclear Fuel." Provisional Patent, Texas Tech University.

TECHNICAL SKILLS

Computation & Simulation: Python, MATLAB, Mathematica, SRIM, LTspice, LabVIEW, ImageJ, OpenClaw

Machine Learning & AI: MATLAB R-CNN, YOLO, AI-assisted object detection for nuclear track analysis

Microscopy & Spectroscopy: Optical Microscopy, SEM, EDS, XRD, NMR, Neutron Spectroscopy, Gamma Spectrometry, FT-ICR Mass Spectrometry

Nuclear Methods: CR-39 polymerization and analysis, Tri-Carb liquid scintillation, vacuum system design, nuclear materials handling, nuclear shielding and safety, fission/fusion analysis

AWARDS & FELLOWSHIPS

David Howe Graduate Fellowship, Texas Tech University	2025
Helen DeVitt Jones Graduate Fellowship, Texas Tech University	2025
CB and Fran Carter Graduate Fellowship, Texas Tech University	2025

APS Global Summit Travel Award , Anaheim, CA	2025
TSAPS Student Travel Award , University of Houston	2025
TSAPS Student Travel Award , Southern Methodist University	2024
Benacquisto Scholarship , University of Florida	2019–2023
National Merit Scholarship	2019