

# JOSHUA PAUL SMITH

**OBJECTIVE** For an employment opportunity following expected graduation in May 2021.

## RELEVANT FIELD EXPERIENCE

### **GRADUATE RESEARCH ASSISTANT: SCINTILLATION MATERIALS RESEARCH CENTER, UTK: CURRENT**

- Characterization of new scintillator composition for radiation detection
- Research compound synthesis methods including sol-gel, polymeric steric entrapment and solid-state synthesis
- Investigating the synthesis of ceramic scintillators using the hot pressing, hot isostatic pressing and spark plasma sintering methods.

### **NSSC-GW NUCLEAR SECURITY POLICY BOOTCAMP: SUMMER 2019**

- Intensive, two-week introduction to policy foundations and drivers in the nuclear arena.

### **NSSC-LANL KEEPIN NON-PROLIFERATION SCIENCE SUMMER FELLOW: SUMMER 2018**

- Researched the Sol-Gel method for producing  $\text{Li}_5\text{La}_3\text{Ta}_2\text{O}_{12}$  nanoparticles for transparent ceramic scintillator synthesis
- Participated in several nuclear security radiation detection exercises and courses.

### **LANL SCHOOL OF NUKES NON-DESTRUCTIVE ASSAY SHORT COURSE: SUMMER 2018**

- Learned the fundamentals of non-destructive assay measurement techniques used for nuclear material accountancy by the International Atomic Energy Agency including hands on exercises.

### **SUMMER FELLOWSHIP: CENTER FOR SPACE NUCLEAR RESEARCH, INL: SUMMER 2016**

- Design of an 8-10 We Radioisotope Thermal Photovoltaic Generator and a lab demonstration model

### **RESEARCH: ADVANCED MONTE CARLO METHODS: SPRING 2016**

- Conducting experiments used in part for validation of exponential Monte Carlo methods for solving the neutron transport equation.

### **DIRECTED STUDIES: NUCLEAR POWER FOR SPACE APPLICATIONS: 2015**

- Studied nuclear power propulsion systems for space applications: plasma propulsion systems and fission fragment propulsion systems.
- Studied radioisotopes and decay chains for new radioisotope thermoelectric generators.
- Studied neutron production rates in polyethylene shielding in cosmic-ray environments.

### **DIRECTED STUDIES: CHINA, SUMMER 2014**

- Studied Reactor Systems Engineering at Harbin Engineering University in Harbin, China.

- Toured manufacturing sites of pressure vessels, pipes and steam generators for AP 1000.
- Toured power plant construction sites at Huang Yan He and Sanmen.
- Toured nuclear training facilities at Daya Bay.

**AMERICAN NUCLEAR SOCIETY SECRETARY: 2016**

- Organize and assist in running meetings and events for the American Nuclear Society student chapter at Texas A&M University

**AMERICAN NUCLEAR SOCIETY SERVICE COORDINATOR: 2015-2016**

- Develop and coordinate service opportunities for the American Nuclear Society student chapter at Texas A&M University.

**EXPERT  
KNOWLEDGE**

Proficient in LaTeX, AutoCAD and Solid Works.  
 Proficient in Python, MatLab and C programming languages.  
 Proficient in MCNP and COMSOL.  
 Experience with ENDF/B-VII.1 nuclear data files.  
 Experience with AMaze and TriComp electromagnetic modeling software.  
 Experience with SRIM stopping power and range software.  
 Experience with GOTHIC, SCALE and CASMO modeling and simulation software.  
 Experience with Quantum Espresso modeling software.

**EDUCATION**

**GRADUATE STUDENT, THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN, 2016-PRESENT**

Expected Graduation: May 2020

**MASTERS IN NUCLEAR ENGINEERING, THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN, 2016-PRESENT**

Graduated: May 2019

**BS IN NUCLEAR ENGINEERING, TEXAS A&M UNIVERSITY, COLLEGE STATION, TX, 2011-2016**

Graduated: May 2016

Major GPA: 3.384

**RELEVANT COURSE WORK: MECHANICAL ENGINEERING DEPARTMENT**

- MEEN 221- Statics & Particle Dynamics
- MEEN 315- Principles of Thermodynamics
- MEEN 344- Fluid Mechanics
- MEEN 461- Heat Transfer

**RELEVANT COURSE WORK: MATHEMATICS**

- MATH 151- Engineering Math I
- MATH 152- Engineering Math II

- MATH 251- Engineering Math III
- MATH 308- Differential Equations
- MATH 309- Linear Algebra for Differential Equations
- MATH 401- Advanced Engineering Math V

**RELEVANT COURSE WORK: NUCLEAR ENGINEERING DEPARTMENT**

- NUEN 101- Principles of Nuclear Engineering
- NUEN 201- Intro to Nuclear Engineering I
- NUEN 265- Material Science for Nuclear Engineering
- NUEN 302- Intro to Nuclear Engineering II
- NUEN 301- Nuclear Reactor Theory
- NUEN 309- Radiological Safety
- NUEN 303- Nuclear Isotope Detection Lab
- NUEN 304- Nuclear Reactor Analysis
- NUEN 329- Analytical and Numerical Methods
- NUEN 405- Nuclear Engineering Experiments
- NUEN 406- Nuclear Engineering Systems and Designs
- NUEN 410- Design of Nuclear Reactors
- NUEN 430- Computer Applications in Nuclear Engineering
- NUEN 431- Technical Communication Issues in Nuclear Engineering
- NUEN 481- Nuclear Engineering Seminar
- NUEN 485- Directed Studies: China
- NUEN 485- Directed Studies: Space Nuclear Applications
- NUEN 491- Research: Computational Methods
- NE 530- Nuclear Security Science and Analysis
- NE 551- Radiation Protection
- NE 597- Space Radiation Effects and Shielding
- NE 532- Advanced Topics- Nuclear Security Science/Analysis
- NE 588- Particle Accelerators: Techniques and Applications
- NE 697- Scintillation Materials

**RELEVANT COURSE WORK: MATERIAL SCIENCE AND ENGINEERING DEPARTMENT**

- MSE 511- Crystallography
- MSE 522- Defects in Crystals
- MSE 513- Thermodynamics of Materials
- MSE514- Electronic and Optical Properties of Materials
- MSE613- Modelling and Simulation for Materials Science Quantum Mechanics

**RELEVANT COURSE WORK: OTHER**

- ENGR 485- Engineering Ethics
- CVEN 305- Mechanics of Materials
- ECEN 215- Principles of Electrical Engineering
- SENG 321- Industrial Safety Engineering

EXTERNAL  
PROFESSIONAL  
EXPERIENCE TO  
FINANCE  
UNDERGRADUATE  
EDUCATION

**SERVER AND TRAINER, SALTGRASS STEAKHOUSE, COLLEGE STATION, TX**

August 2014- May 2016

**COOK AND CASHIER, CRAWFISH TO GEAUX, BRYAN, TX**

April 2014- May 2016

**MANAGER, BARTENDER AND SERVER, NINFA'S MEXICAN RESTAURANT, COLLEGE STATION, TX**

January 2012- August 2014

**SERVER, MCALLISTER'S DELI, COLLEGE STATION, TX**

August 2011- May 2012

**SOCCER REFEREE AND MANAGER, PLANO SPORTS AUTHORITY, PLANO, TX**

August 2008- August 2011

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REFERENCES

References available upon request.

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