



Nuclear Science and Security Consortium

Summer 2025 Newsletter



Letter from the NSSC Director

Prof. Jasmina Vujic
University of California, Berkeley



Dear Friends of NSSC,

As I reflect on our achievements over the past year, I am continually impressed by the exceptional contributions of the NSSC community, consisting of our scholars, faculty, and staff whose tremendous efforts in research and education have been instrumental in advancing our mission. Together, we continue to push the boundaries of innovation and excellence in the critical areas of nuclear science and security.

Since its establishment in 2011, the NSSC has consistently exceeded expectations thanks to our outstanding multi-disciplinary and multi-institutional teams; our successful ability to recruit diverse groups of the best students from across the Nation; our efficient administrative oversight; and our strong, meaningful collaborations with U.S. DOE National Laboratories. These partnerships are strengthened not only through intensive summer internships, but also by the year-round presence of our faculty, postdocs, and students at the national labs. Our excellent and effective management structure, including the Executive Team, Research Focus Area Leadership Team, POC Council (composed of partner university and laboratory points-of-contact), and Advisory Board, has been key to our continued success.

In 2021, the NSSC3 team successfully competed for an additional five years of support. Our current partner universities include UC Berkeley (lead), AFIT, MSU, GWU, NCSU, TAMU, UCD, UIUC, UNLV, UNM, and UTK, alongside laboratory partnerships with LBNL, LLNL, LANL, ORNL, and SNL. Our faculty now number 52, including 12 Assistant Professors. The NSSC3 (2021-2026) conducts R&D in five technical areas: nuclear physics and nuclear data, radiochemistry and nuclear chemistry, nuclear materials science, nuclear and chemical engineering, and radiation detection, with two crosscutting disciplines: computing and optimization in nuclear applications, and education in nuclear science, technology and policy.

In just the first 3 and a half years, the NSSC3 has graduated 38 B.S., 38 M.S., and 40 Ph.D. student Fellows and Affiliates, and placed 51 program graduates in DOE National Laboratories or other government agencies. Our scientific excellence is reflected in more than 113 peer-reviewed publications, 600 oral and poster presentations, and 106 excellence and innovation awards earned by our students and faculty.

Letter from the NSSC Director

Prof. Jasmina Vujic
University of California, Berkeley

A total of 139 students have performed on-site research at partner labs and 6 faculty participated in National Lab Rotations: Prof. Manfredi (AFIT) at LLNL; Prof. DiFulvio (UIUC) at NCERC; Prof. Bogetic (UTK) at NCERC; Prof. Siefman (UCB) at LLNL; Prof. Hosemann (UCB) at LLNL; and Prof. Scarlat (UCB) at LANL. In addition, Prof. Kai Vetter received the Lifetime Achievement Award from LBNL in 2024. Moreover, the NSSC3 has hosted or co-sponsored 16 summer schools since 2021.

Since inception 13.5 years ago, the NSSC has supported 730 scholars at a range of levels (undergraduate and graduate students, postdocs, specialists, and faculty) and placed 207 (45%) of program graduates into careers at DOE National Laboratories or other government agencies. The NSSC has graduated 160 B.S., 131 M.S., and 188 Ph.D. Fellows and Affiliates and supported 50 postdoctoral scholars through program completion. In addition, close to 70 NSSC Fellows and Affiliates have gone on to faculty and research positions at U.S. universities. Our community has demonstrated scientific excellence through 512 peer-reviewed publications, 2,034 oral and poster presentations, and 315 excellence and innovation awards.

Our stellar NSSC Fellows and Affiliates represent the next generation of scientists and researchers, equipped with the skills and expertise required to advance critical nuclear science and engineering disciplines needed for nuclear nonproliferation, nuclear arms control, nuclear incident response, nuclear intelligence, nuclear energy, and other key nuclear-related fields.

— Jasmina Vujic



The Mission of the NSSC

The NSSC has two primary objectives: (i) develop world-class nuclear scientists and engineers with expertise in the critical disciplines required for careers at U.S. DOE National Laboratories and other nuclear-related fields, and (ii) provide innovative concepts, technologies, and ideas to the labs in support of the NNSA DNN R&D mission. Our Consortium brings an end-to-end approach, by attracting and training exceptional students, connecting them with research in relevant nuclear disciplines, and facilitating their transition to careers in national and nuclear security.



NSSC Fellowships are awarded on the basis of academic merit, demonstrated competence in relevant research areas, and promise for a career in the DOE National Laboratories and government agencies with nuclear missions.

Our scholars are our greatest asset!

NSSC Leadership Team

NSSC Executive Team



NSSC Director:
Jasmina Vujic
(UCB)



NSSC Executive Director: Bethany Goldblum (UCB)



NSSC NNSA Liaison: Kai Vetter (UCB)



NSSC Deputy Exec Director: Jason Hayward (UTK)



NSSC National Lab Liaison: Lee Bernstein (UCB)

Support Staff

Derek Johnson
Financial Analyst

Ava Benkhatar
Program Manager

NSSC External Advisory Board



Chair: Carol Burns (LBNL)



Ibo Matthews (LLNL)



Roger Falcone (UCB)



Kary Myers (LANL)



Jason Newby (ORNL)



Trish Baisden
(Retired from LLNL)



Miriam “Mim” John (Retired from SNL)



Benn Tannenbaum (SNL)



NSSC Demonstrated Excellence & Innovation


2011 to present

730



Personnel Supported

315




Awards

518



Peer-Reviewed Publications

67



Webinars & Seminars

829

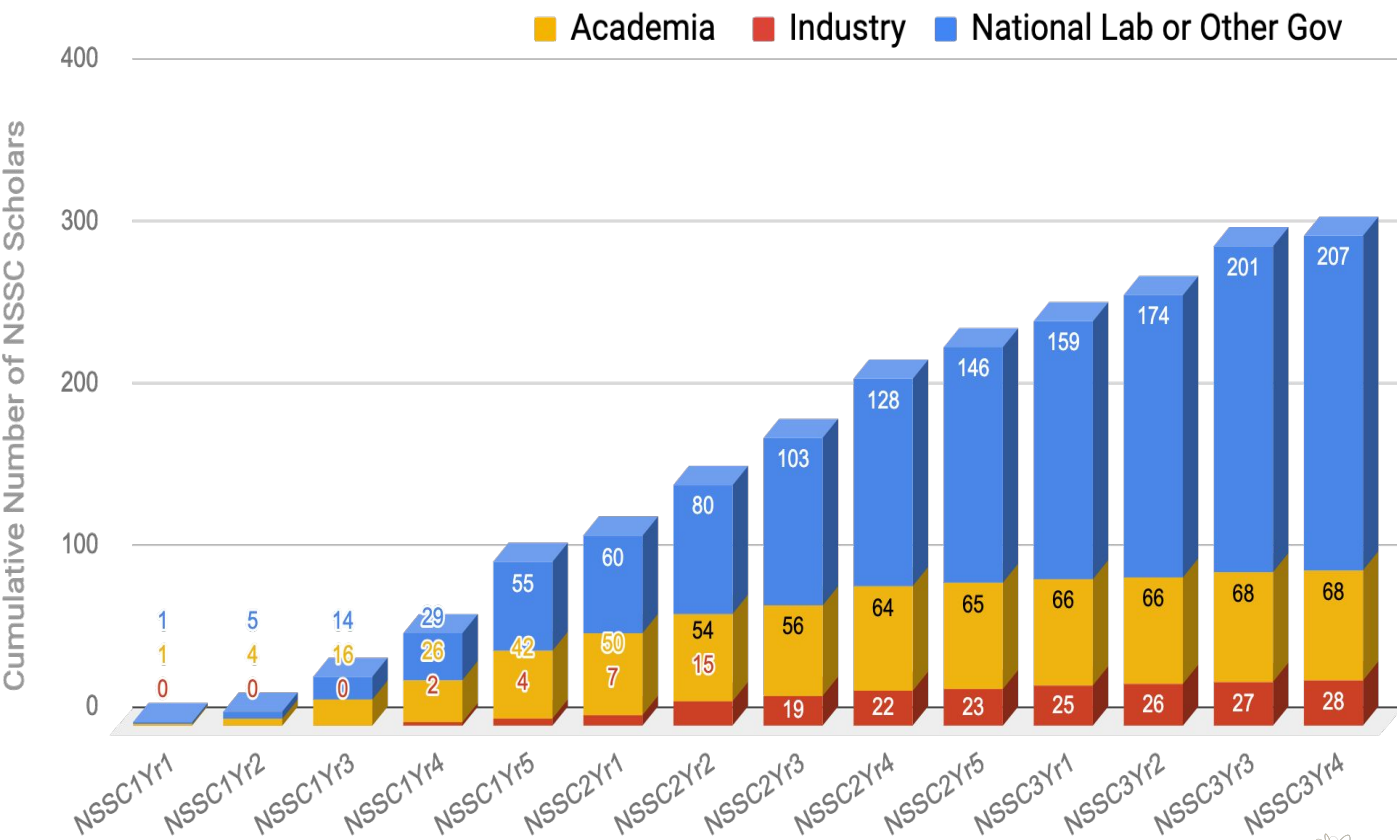


Posters

1205



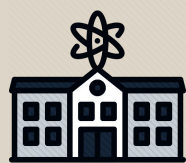
Oral Presentations



NSSC3 Demonstrated Excellence & Innovation

51 scholars placed in labs or other government agencies in just the first 3 ½ years of NSSC3!

139



Students On-Site at Partner Labs

9



New Assistant Professors

113



Peer-Reviewed Publications

106



Awards

267



Poster Presentations

332



Oral Presentations

6



Faculty National Lab Rotations

38



Bachelor's Degrees

38



Master's Degrees

40



PhD Degrees

NSSC-LLNL Nuclear Security Summer School

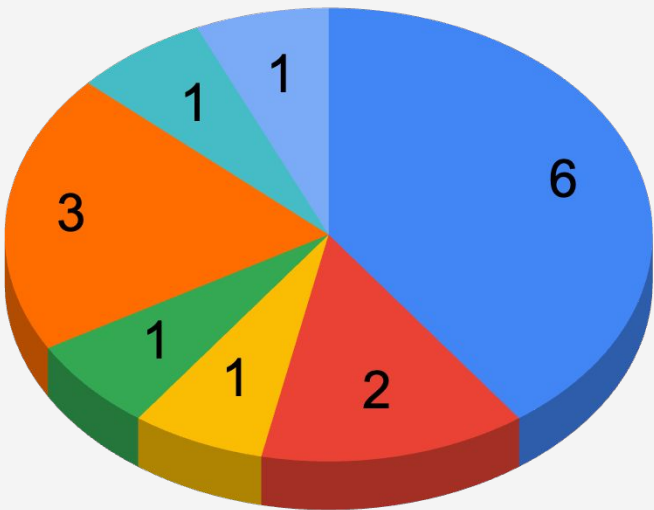
★ *New Initiatives for NSSC3* ★



Building on the success of the 2023 NSSC-LLNL Consortia Workshop, NSSC and LLNL hosted a 4-day summer school in 2024 that immersed 20 students in the laboratory’s cutting edge research environment. The program included lectures, tours, and hands-on experimental modules tackling challenges in warhead verification, emergency response, and nuclear forensics. Students also had the opportunity to connect with their peers and LLNL scientists from various directorates through informal interactions and organized networking events. Another iteration of the NSSC-LLNL Nuclear Security Summer school is planned for 2025.

2025 NSSC-LLNL Summer School Cohort

- UCB
- MSU
- UTK
- Georgia Tech
- UF
- UMich
- U Puerto Rico



The 2025 program was made available to students from all 5 DNN R&D consortia and included 16 participants from 7 universities!

NSSC-LLNL Nuclear Security Summer School

Overview of Hands-on Experimental Modules



Source Search & Characterization

The **Radiological Source Search and Characterization** module challenges scholars to localize and characterize an unidentified threat using passive neutron and gamma-ray measurements.



Nuclear Forensics

In the **Nuclear Forensics** module, scholars investigate and trace the origins of nuclear and radiological materials through measuring radiation signatures and isotopic compositions of simulated nuclear samples.



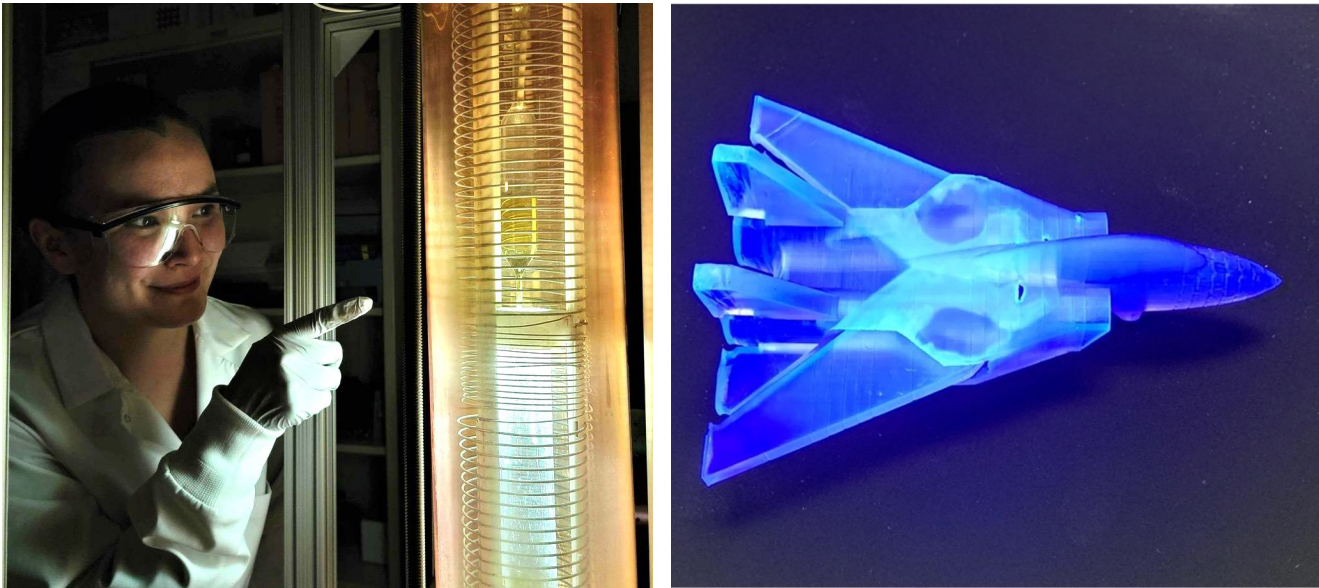
Warhead Verification

In the **Warhead Verification** module, scholars participate as host and inspector teams in a simulated warhead dismantlement scenario to support their nation with technical verification options.

New to NSSC3!

★ *New Initiatives for NSSC3* ★

Scintillator Summer School - New for Summer 2025



The Scintillator Summer School, introduced in 2025, focuses on **scintillation radiation detectors** and is **hosted by ORNL, UCB, AFIT, and UTK**. Participants will travel to ORNL/UTK to learn from subject matter experts on the fundamentals of scintillation (both organic and inorganic), hear about cutting-edge applications, **make their own scintillators**, and perform characterization measurements. Students will have the opportunity to **network with ORNL staff scientists**, tour **world-class laboratories** at ORNL, and learn about available career opportunities.

NSSC-LLNL Professional Development Program



The **NSSC collaborated with Lawrence Livermore National Laboratory (LLNL)** to offer scholars a new opportunity: the **Professional Development Program for NSSC Future Leaders**. Four NSSC Scholars, **Rebecca Manns (UNLV)**, **Hannah Berg (MSU)**, **Tracy Edwards (MSU)**, and **Zachary McGuire (UCB)**, were selected for this **multi-year program**, which provides **leadership, project management, and education training for scientists and engineers**. These scholars will work **hand-in-hand with LLNL scientists** to lead an interactive experimental module at the 2026 NSSC-LLNL Summer School.

NSSC3 Student Highlights

Research Accomplishments of NSSC Scholars from the Past Year



Jared Justice



Jared co-authored a *J. Appl. Phys.* publication with LANL. This paper investigated electron and phonon transport in bulk multilayered composites as a function of layer height, aiming to understand the trade-off between enhanced radiation damage resistance from increased interface density and the corresponding reduction in transport efficiency.



Megan Schiferl



Megan co-authored a *JNE MDPI* paper with a team of NSSC faculty, students, and scientists from LBNL and LLNL. This paper explored the growing challenge of determining the origin of radiological materials from advanced reactor fuel cycles that have fallen out of regulatory control, and identifies nuclear forensic signatures within these cycles that should be prioritized for further investigation.



Mejdi Mogannam



Mejdi co-authored a *Phys. Rev. Lett.* paper with LLNL. This paper details the execution of an experiment at ANL to constrain the neutron capture cross section for ^{139}Ba , leading to a significantly reduced uncertainty in the cross section and the observation of unexpected behavior in the low-energy gamma-ray strength function for ^{140}Ba .

NSSC3 Initiative Highlights

Program Successes through the Lens of NSSC Scholars



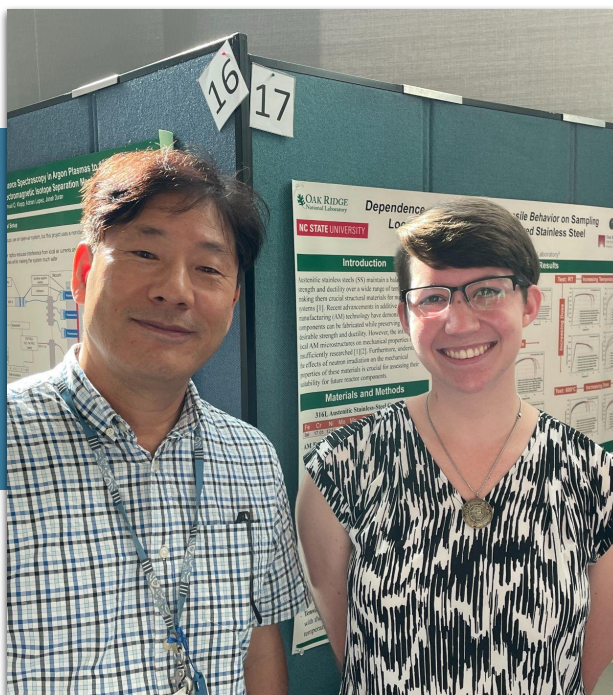
"The PDP has been an incredible experience so far! As someone who teaches undergraduates, it was incredibly insightful to hear about the ways that teaching integral science skills can be weaved into positive experiences during practical exercises. This program has taught me to be a better science communicator and I look forward to continuing in the program."

**-Rebecca Manns (UNLV)
2025 NSSC-LLNL PDP Participant**



"NSSC played a major role in my decision to pursue a postdoc at LANL by connecting me with my lab mentor early in my graduate career. Additionally, the NSSC-LANL Keepin Nonproliferation Summer Program enhanced my internship experience through opportunities to tour facilities, expand my network, and gain inspiration from the breadth and importance of LANL's mission."

**- Noah Walton (UTK-LANL)
LANL Director's Postdoc Fellow**



"My involvement with the NSSC provided me with the opportunity to participate in a summer internship at ORNL during the summer of 2024, and this internship allowed me to see first-hand how ORNL is at the forefront of nuclear materials research and meet scientists who inspired me to pursue a full time career at the laboratory."

**-Kara Krogh (NCSU-ORNL)
Technical Specialist at ORNL**

NSSC Laboratory Faculty Rotation Program

★ *New Initiative for NSSC3* ★



Prof. Manfredi (AFIT) at LLNL in 2025

Previous NSSC Faculty Rotations



*Prof. Di Fulvio (UIUC)
at NCERC in 2024
and 2025*



*NSSC Prof. Bogetic
(UTK) & students at
NCERC in 2024*



*Prof. Siefman (UCB)
& students at LLNL
in 2024*



*Prof. Hosemann
(UCB) wins 2023
LLNL Faculty
Sabbatical*



*Prof. Scarlat (UCB)
at LANL in 2022*

NSSC Careers (2011-present)

NSSC Alums Currently at the National Laboratories or Other Government Agencies

180 NSSC Fellows & Affiliates have been placed!



Kara Krogh
Bachelors UCB
ORNL
2025



Matt deJong
Masters
NCSU
ORNL
2025



Kim Pestovich
PhD UTK
DTRA
2025



Noah Walton
PhD UCB
LANL
2024



Joel Castillo
PhD UNLV
PNNL
2025



Mairead Montague
PhD UTK
ANL
2024



Kalie Knecht
PhD UCB
ORNL
2024



Catherine Apgar
PhD UCB
LANL
2024



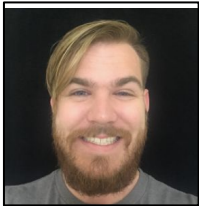
Joe Brackbill
PhD UCB
LBNL
2024



Robert Jacob
PhD UCB
LBNL
2024



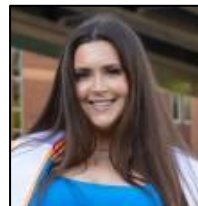
Dustin Rogers
Masters AFIT
Air Force
2024



Tyler Jordan
PhD UCB
LANL
2024



Brady Moore
Bachelors UTK
Y-12
2024



Autumn Mitchell
Bachelors UTK
Government
2024



Brady Buckley
Masters AFIT
Air Force
2024



Peter Boone
Masters UCB
LLNL
2024



Ryan Smith
PhD UCB
LBNL
2023



Ananya Venkatraman
Bachelors UCB
JHU APL
2023



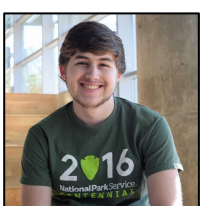
Chris Brand
PhD UCB
LLNL
2023



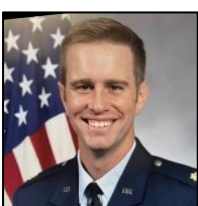
Benjamin Walusiak
PhD GWU
LANL
2023



Christian Young
PhD UTK
Y-12
2023



David Raji
PhD UTK
PNNL
2023



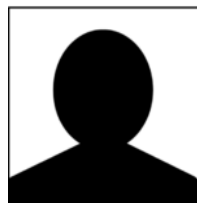
Tim Genda
PhD UCB
Air Force
2023



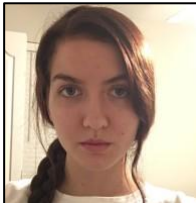
Ben Godfrey
PhD UCD
LBNL
2022

NSSC Pipeline Metrics (2011-2024)

NSSC Alums Hired at the National Labs or Government Positions



Richard Lew
Bachelors UCB
LLNL
2023



Carla McKinley
Masters UCB
LLNL 2023



Dominic Piedmont
PhD UIUC
BNL
2023



Jonathan George
Masters UNLV
ORNL
2023



Karen Hogue
PhD UTK
ORNL
2023



Aaron Nowack
PhD UTK
SNL
2023



Daniel Puentes
PhD MSU
NNSA
2023



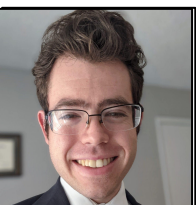
Brian Lenardo
PhD UCD
SLAC
2023



Erin Good
PhD MSU
PNNL
2023



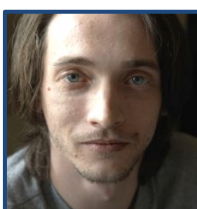
Scott Essenmacher
Postdoc MSU
LLNL
2023



Austin Mullen
PhD UCB
LANL
2023



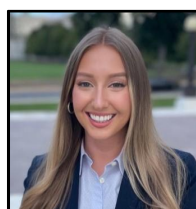
Tyler Nagel
PhD UCB
LANL
2023



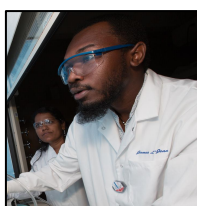
Billy Boxer
PhD UCD
PNNL
2022



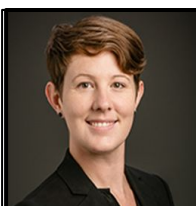
Sarah Loftin
Masters TAMU
DOE NNSA
2022



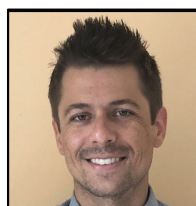
Sarah Stevenson
PhD UCB
Air Force
2022



James Louis-Jean
PhD UNLV
SRNL
2022



Kathryn Huff
PhD UCB
DOE
2022



Peter Huck
PhD GWU
LLNL
2022



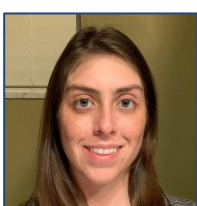
Jyothisraj Johnson
PhD UCD
LBNL
2022



Luca Pagani
PhD UCD
PNNL
2022



Fernando Torales-Acosta
PhD UCB
LBNL
2022



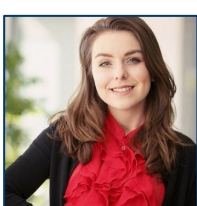
Elizabeth Rubino
PhD MSU
LLNL
2022



Katherine Luebke
PhD UNLV
LANL
2022



Matthew Weiss
Postdoc UIUC
LLNL
2022



Nicole Byrne
PhD GWU
Argonne
2022



Leon Pickard
Postdoc UCD
LBNL
2022



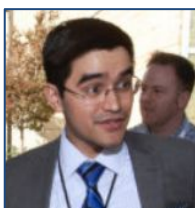
Aaron Chester
Postdoc MSU
FRIB
2022

NSSC Pipeline Metrics (2011-2024)

NSSC Alums Hired at the National Labs or Government Positions



Juan Manfredi
Postdoc UCB
AFIT
2021



Ethan Boado
Bachelors
UCD
PNNL
2022



James
Bevins
PhD UCB
LANL
2021



Jake Tibbetts
Masters UCB
Intelligence
2021



Mariah
Ramirez
PhD TAMU
DTRA
2021



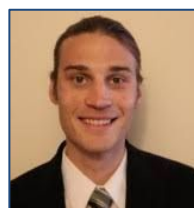
Katie
Childers
PhD MSU
RSL
2021



Carl Britt
PhD UTK
PNNL
2021



Caleb
Redding
PhD UTK
ORNL
2021



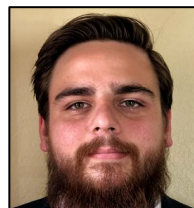
Eric Nelius
Masters UTK
SNL
2021



Cordell
Delzer
PhD UTK
LANL
2021



Jason
Matheny
Masters UCB
LANL
2021



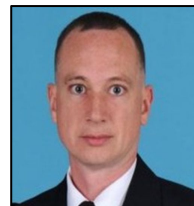
Joshua
Smith
PhD UTK
LLNL
2021



Rebecca
Lowe
PhD UNLV
NNSS
2021



Kelly Kmak
PhD UCB
LLNL
2021



Brian
Champine
PhD UCB
LLNL
2021



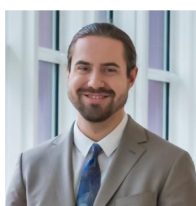
John Ash
PhD MSU
TRIUMF
2021



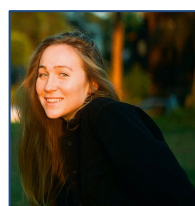
Kevin
Glennon
PhD TAMU
LLNL
2021



Hi Vo
PhD UCB
LANL
2021



Patrick
Williams
Masters UTK
IAEA
2021



Paulina
Wheeler
Bachelors UCB
NASA
2021



Katherine
Shield
PhD UCB
US DOS
2021



Roy Ready
PhD MSU
US Naval
Research Lab
2021



Teal
Pershing
PhD UCD
LLNL
2020



Rebecca
Krentz-Wee
PhD UCB
IAEA
2020



Athena
Gallardo
PhD UNLV
LANL
2020



Stephanie
Lyons
Postdoc MSU
PNNL
2020



Terri
Poxon-Pearson
PhD MSU
NNSA
2020

NSSC Pipeline Metrics (2011-2024)

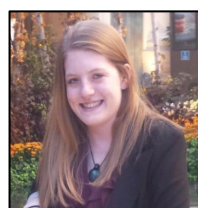
NSSC Alums Hired at the National Labs or Government Positions



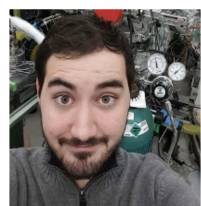
Max Wallace
Bachelors
UCB
LLNL
2020



August
Ridenour
PhD GWU
NRL
2020



Kelsey
Amundson
Bachelors UCB
LANL
2020



Brenden
Longfellow
PhD MSU
LLNL
2020



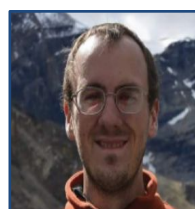
Tucker
McClanahan
PhD UTK
LANL
2020



J.R.
Powers-Luhn
PhD UTK
PNNL
2020



Adriana
Sweet
PhD UCB
LLNL
2020



Jon Balajthy
PhD UCD
SNL
2020



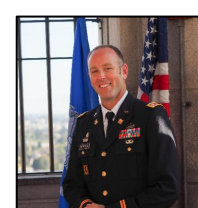
Jackie
Dorhout
PhD UNLV
LANL
2020



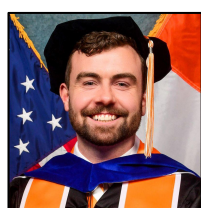
Eleanor
Comer
Masters UTK
Y-12
2020



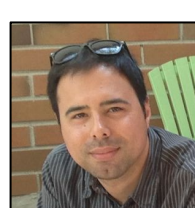
Caroline
Hughes
Masters UCB
PNNL
2019



Keith
McManus
PhD UCB
JHU APL
2019



Jonathan
Hartman
Masters UTK
SNA Int
2020



Aaron
Manalaysay
Postdoc UCD
LBNL
2019



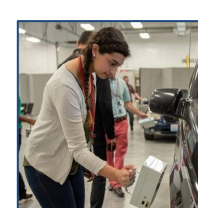
William Kerlin
PhD UNLV
LLNL
2019



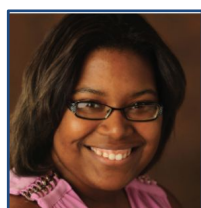
Christian
Bustillos
PhD UCI
LLNL
2019



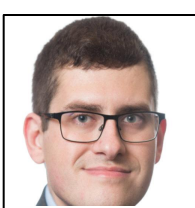
Rachel Mersch
PhD UTK
ORNL
2019



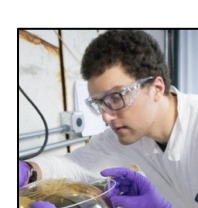
Angela Moore
PhD UTK
PNNL
2019



Ardelia Clarke
PhD Fisk
PNNL
2019



Lucas
Boron-Brenner
PhD UNLV
PNNL
2019



Vincent
Fisher
Postdoc UCD
FERMI
2019



Michael Moore
PhD UTK
PNNL
2019



Bradley Childs
PhD UNLV
LLNL
2019



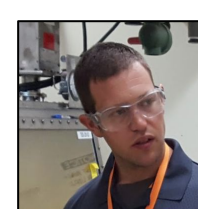
Madhuri
Kumari
PhD UCD
SNL
2019



Daniel Votaw
Masters MSU
LANL
2019



Jason Richards
PhD UNLV
ORNL
2018



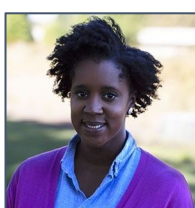
Mark Quint
Masters UTK
U.S. Army
2018

NSSC Pipeline Metrics (2011-2024)

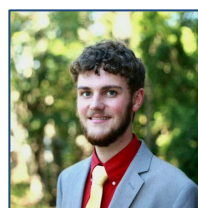
NSSC Alums Hired at the National Labs or Government Positions



Elizabeth Heckmaier
PhD UCI
LLNL
2018



Tomi Akindele
PhD UCB
LLNL
2018



Daniel Harding
PhD UTK
Norfolk Naval Shipyard
2018



Krystin Stiefel
PhD MSU
ORNL
2018



Scott Parker
PhD UCB
LANL
2018



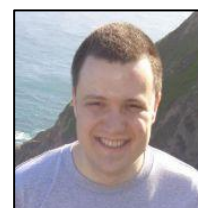
Nicole Apadula
Postdoc UCB
LBNL
2018



Maxwell Sherrod
PhD UNLV
SRNL
2018



Mike Shattan
PhD UTK
ANSER
2018



Steven Gardiner
PhD UCD
FERMI
2018



Sarah Laderman
Masters UCB
IAEA
2018



Matthew Tweardy
PhD UTK
NNSA at PNNL
2018



Cassara Higgins
Postdoc UNLV
LANL
2017



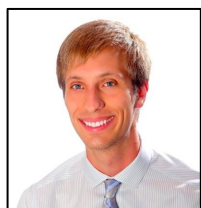
Marc Fitzgerald
PhD UNLV
LLNL
2017



Gian Surbella
PhD GWU
PNNL
Spring 2017



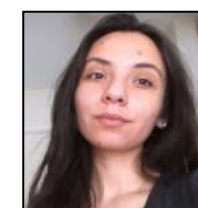
Josh Brown
PhD UCB
SNL
Fall 2017



Leo Kirsch
PhD UCB
LLNL
Spring 2017



Joe Belarge
Postdoc MSU
MIT Lincoln Lab
2017



Berenice Garcia
Bachelors UCB
LANL
2017



Joseph Labrum
Bachelors UCB
Intelligence
2017



Josh Despotopulos
PhD UNLV
LLNL
2017



Derek McLain
PhD UNLV
ANL
2016



Janelle Droessler
PhD UNLV
LANL
2016



Nick Bricker
Masters UCB
LBNL
2016



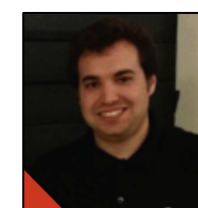
Charles Loelius
Masters MSU
NNSA | PNNL
2016



Michael Jones
PhD MSU
LBNL
2016



Christopher Prokop
PhD MSU
LANL
2016



NSSC Pipeline Metrics (2011-2024)

NSSC Alums Hired at the National Labs or Government Positions



Barbara Wang
Postdoc UCB
LLNL
2016



David Weisz
PhD UCB
LLNL
2016



Keenan Thomas
Masters UCB
LLNL
2016



Anthony Juarez
UCB
SNL
2016



Caleb Roecker
PhD UCB
LANL
2016



Chris Morse
PhD MSU
LBNL
2016



Thomas Halverson
Masters UCB
West Point
2016



Kalee Hammerton
PhD MSU
SRNL
2016



Scott Suchyta
PhD MSU
Postdoc UCB
RSL
2016



Quinlan Smith
Masters UNLV
ORNL
Spring 2016



Uday Mehta
Bachelors
UCB
LLNL
2016



Nicole Larson
Bachelors MSU
INL
2016



Timothy Shokair
Postdoc UCB
LLNL
2015



Sherry Faye
PhD UNLV
LLNL
2015



Justin Munson
PhD UCB
LLNL
2015



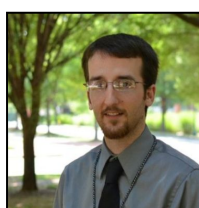
Christopher Brand
Bachelors UCB
LLNL
2015



Marc Bergevin
Postdoc UCD
LLNL
2015



Andrew Wysong
Masters UCB
LLNL
2015



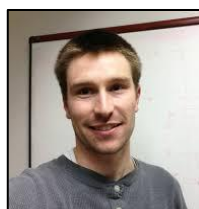
Alex Braatz
PhD UCI
ORNL
2015



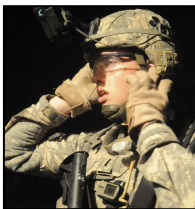
Perry Chodash
PhD UCB
LLNL
2015



David Sweeney
Postdoc UCB
DTRA
2015



Steven Stroberg
PhD MSU
TRIUMF
Spring 2014



Andrew Gillick
Masters UCB
Army
2014



Tim Aucott
PhD UCB
SRNL
2014



Duane Smalley
Postdoc MSU
LANL
2014



Matthew Proveaux
Masters UCB
PNNL
2014



Victor Negut
Bachelors
UCB
LBNL
2014

NSSC Pipeline Metrics (2011-2024)

NSSC Alums Hired at the National Labs or Government Positions



Anthony
Lubbers
Bachelors UCB
LLNL
2014



Audrey Roman
PhD UNLV
LANL
2014



Tashi Parsons-
Moss
PhD UCB
LLNL
2014



Cameron
Bates
PhD UCB
LANL
2014



Jeremy
Mock
PhD UCD
LBNL
2014



Keri Campbell
PhD UNLV
LANL
2014



Brian
Plimley
PhD UCB
LBNL
May 2014



Deepa Khatri
Bachelors UCB
NNSA/LFO
2014



Maryline
Ferrier
PhD UNLV
LANL
2014



Jenna Smith
PhD MSU
TRIUMF
2014



Anagha Iyengar
Bachelors UCB
NNSA
2014



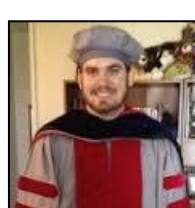
Paul Davis
Postdoc UCB
NNSA
2013



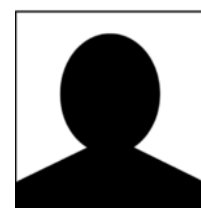
Quinn Looker
PhD UCB
SNL
2013



Ligang Bai
Postdoc UNLV
ANL
2013



Brian Daub
Postdoc UCB
LLNL
2013



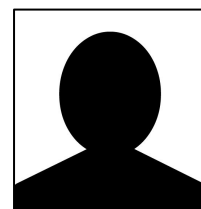
Adam Rice
Masters UCB
Intelligence
2013



Noah Fischer
Bachelors
UCB
LANL
2012



Jonathan Plaue
PhD UNLV
LANL
2012



Joshua Meyers
PhD UCB
LLNL
2012

A stylized graphic of an atomic symbol, featuring three intersecting elliptical orbits in a light yellow color. Three dark blue dots are positioned at the intersections of the orbits, representing electrons. The graphic is located in the upper right quadrant of the image, partially overlapping the 'SSC' portion of the main text.

NSSC

NUCLEAR SCIENCE and SECURITY CONSORTIUM